Appendix H:
Transportation Supporting Information

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Shiloh Crossing Project
Traffic Impact Study

Prepared for the
Town of Windsor

June 15, 2022

GHD | 2235 Mercury Way, Suite 150, Santa Rosa, CA 95407 | 11230338

Table of Contents

1. Introduction 1
   - 1.1 Report Overview 1
   - 1.2 Project Location 1
   - 1.3 Project Description 2
     - 1.3.1 Proposed Land Uses 2
     - 1.3.2 Proposed Site Access 2
2. Transportation Impacts 8
   - 2.1 Setting 8
     - 2.1.1 Street Network 8
     - 2.1.2 Transit Service 9
   - 2.2 Regulatory Framework 10
     - 2.2.1 State Regulations 10
     - 2.2.2 Regional Regulations 11
     - 2.2.3 Local Regulations 11
   - 2.3 CEQA Significance Criteria 13
   - 2.4 Impact & Mitigation Findings 13
     - 2.4.1 Transportation Programs, Plans, Ordinances & Policies 13
     - 2.4.2 Vehicle Miles Traveled (VMT) 14
     - 2.4.3 Hazards 15
3. Traffic Level of Service 19
   - 3.1 LOS Methodologies 19
   - 3.2 Windsor General Plan LOS Standard 21
   - 3.3 Study Intersections 21
   - 3.4 Existing Conditions 22
   - 3.5 Existing plus Project Conditions 25
     - 3.5.1 Project Trip Generation 25
     - 3.5.2 Project Trip Distribution & Assignment 26
     - 3.5.3 Existing plus Project LOS 29
   - 3.6 Cumulative Conditions 30
     - 3.6.1 Cumulative No Project LOS 30
     - 3.6.2 Cumulative Plus Project LOS 35
   - 3.7 Left-turn Queue Analysis 36

Figure Index

Figure 1.1 Vicinity Map 1
Figure 1.2 Project Site Plan (Civil Drawing) 3
Figure 1.3 Project Site Plan (Architectural Drawing) 4
Figure 1.4 Public Street Section: Shiloh Road 5
Figure 1.5 Public Street Section: Business Park Court 6
Figure 1.6 Proposed Private Drive Dimensions 7
Figure 2.1 Windsor 2040 Circulation System Map 12
Figure 2.2 Study Intersection Locations 15
Figure 3.1 Study Intersection Locations & Existing Lane Configurations 23
Figure 3.2 Existing Conditions Peak Hour Traffic Volumes 24
Figure 3.3A Pass-by Trips 26
Figure 3.3B Project Trip Assignment (Existing plus Project Conditions) 27
Figure 3.4 Existing plus Project Peak Hour Traffic Volumes 28
Figure 3.5 Future Lane Configurations (Cumulative No Project Conditions) 31
Figure 3.6 Cumulative No Project Conditions Peak Hour Traffic Volumes 32
Figure 3.7 Project Trip Assignment (Cumulative Conditions) 33
Figure 3.8 Cumulative Plus Project Conditions Peak Hour Traffic Volumes 34

Table Index

Table 2.2 Reported Collisions (2015-2019) 16
Table 3.1 Intersection Level of Service (LOS) Criteria 20
Table 3.2 Existing Conditions Intersection LOS 22
Table 3.3 Vehicle Trip Generation Rates 25
Table 3.4 Vehicle Trip Generation Forecast – Proposed Project 25
Table 3.5 Project Trip Distribution 26
Table 3.6 Existing Plus Project Conditions Intersection LOS 29
Table 3.7 Cumulative No Project Conditions Intersection LOS 30
Table 3.8 Cumulative Plus Project Conditions Intersection LOS 35
Table 3.9 Left-turn Queue Analysis (Existing & Existing plus Project Conditions) 36
Table 3.10 Left-turn Queue Analysis (Cumulative Conditions) 37

Appendix Index

Appendix A Fire Turning Exhibits

Appendix B Intersection Level of Service Calculations & Left-turn Queue Reports

1. Introduction

This report has been prepared to present the results of the study performed by GHD, Inc., to evaluate potential transportation impacts and changes to traffic level of service (LOS) resulting from the proposed Shiloh Crossing development (the "Project") in Windsor, California.

1.1 Report Overview

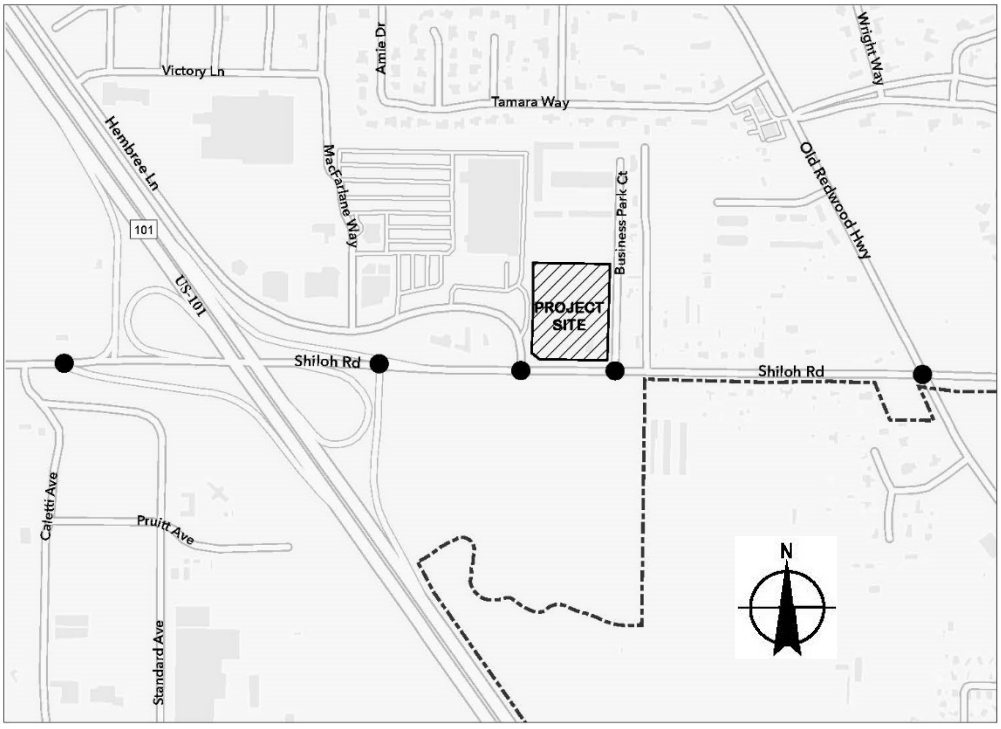
This report is divided into the following sections:

- **Chapter 1 Introduction** provides a description of the project and proposed site plan, including site access provisions
- **Chapter 2 Transportation Impacts** provides an assessment of potential transportation impacts resulting from the project based on California Environmental Quality Act (CEQA) impact criteria
- **Chapter 3 Traffic Level of Service** provides an assessment of the effect of project-generated motor vehicle traffic on level of service (LOS) and left-turn queues at key intersections near the project site

1.2 Project Location

The Project Site is an undeveloped property located on the north side of Shiloh Road, between Hembree Lane and Business Park Court, as shown on Figure 1.1.

Figure 1.1 Vicinity Map



1.3 Project Description

1.3.1 Proposed Land Uses

The Project would provide 173 affordable multi-family residential dwellings in two buildings, a five-story North Building and four-story South Building, and 8,000 square feet of ground-floor local-serving retail space in the South Building. The proposed dwellings would provide housing for families earning up to 80 percent of Adjusted Median Income (AMI). The project site plan is illustrated on Figures 1.2 and 1.3.

1.3.2 Proposed Site Access

Proposed access would be from Shiloh Road and an existing street that would be widened, Business Park Court. Public off-site improvements on Business Park Court and Shiloh Road would include parallel on-street parking, bicycle lanes, sidewalks, and parkway planting areas, as illustrated on Figures 1.4 and 1.5. In addition, as shown on Figure 1.4: the Project proposes to convert the second westbound lane on Shiloh Road approaching Hembree Lane from a shared through/right-turn lane to a right-turn only lane.

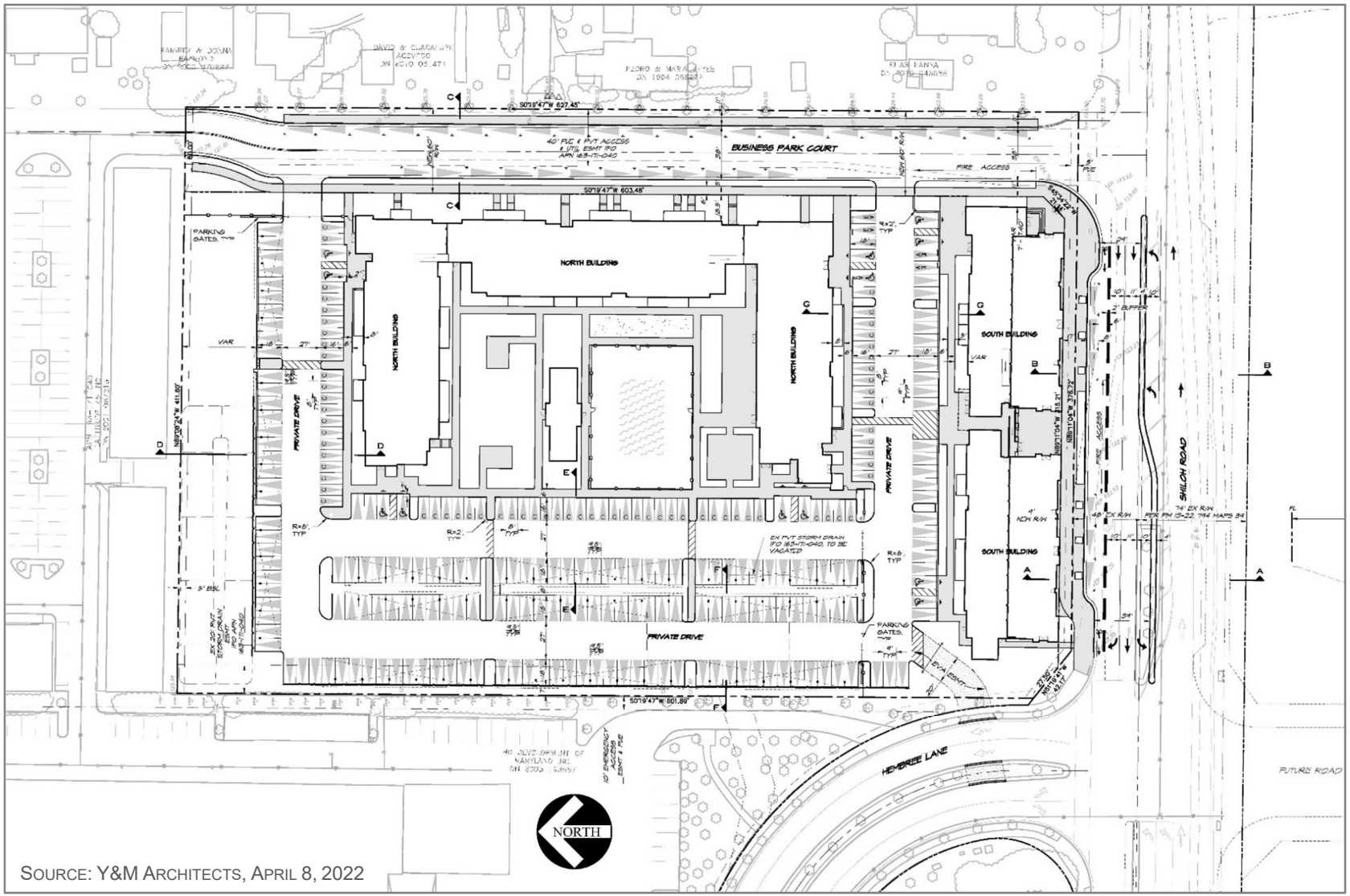
The Project would provide a sidewalk on the north side of Shiloh Road between Hembree Lane and Business Park Court that would connect with an existing sidewalk on Hembree Lane, and the Project would also provide sidewalks on both sides of Business Park Court.

Direct motor vehicle access to the Project site would be provided via Business Park Court, which would be improved with curbs and widened to accommodate on-street parking in addition to the provision of sidewalks described above. The Project would provide an eastbound left-turn pocket from Shiloh Road to Business Park Court to enhance access and reduce potential hazards associated with left-turn movements. In response to potential safety concerns: Town staff has indicated that left-turn movements from Business Park Court to eastbound Shiloh Road will eventually be prohibited, at such time as a westbound left-turn lane is provided on Shiloh Road approaching Hembree Lane that would allow vehicles exiting Business Court to make a U-turn to travel east on Shiloh Road.

The Project would provide 302 automobile parking spaces, including 254 off-street spaces and 48 on-street spaces. The commercial portion of the development will exceed the Town of Windsor Zoning Code standards of one stall per 200 square feet of space. The 48 on-street automobile parking spaces would include 42 on-street spaces on Business Park Court and 6 on-street parking spaces on Shiloh Road.

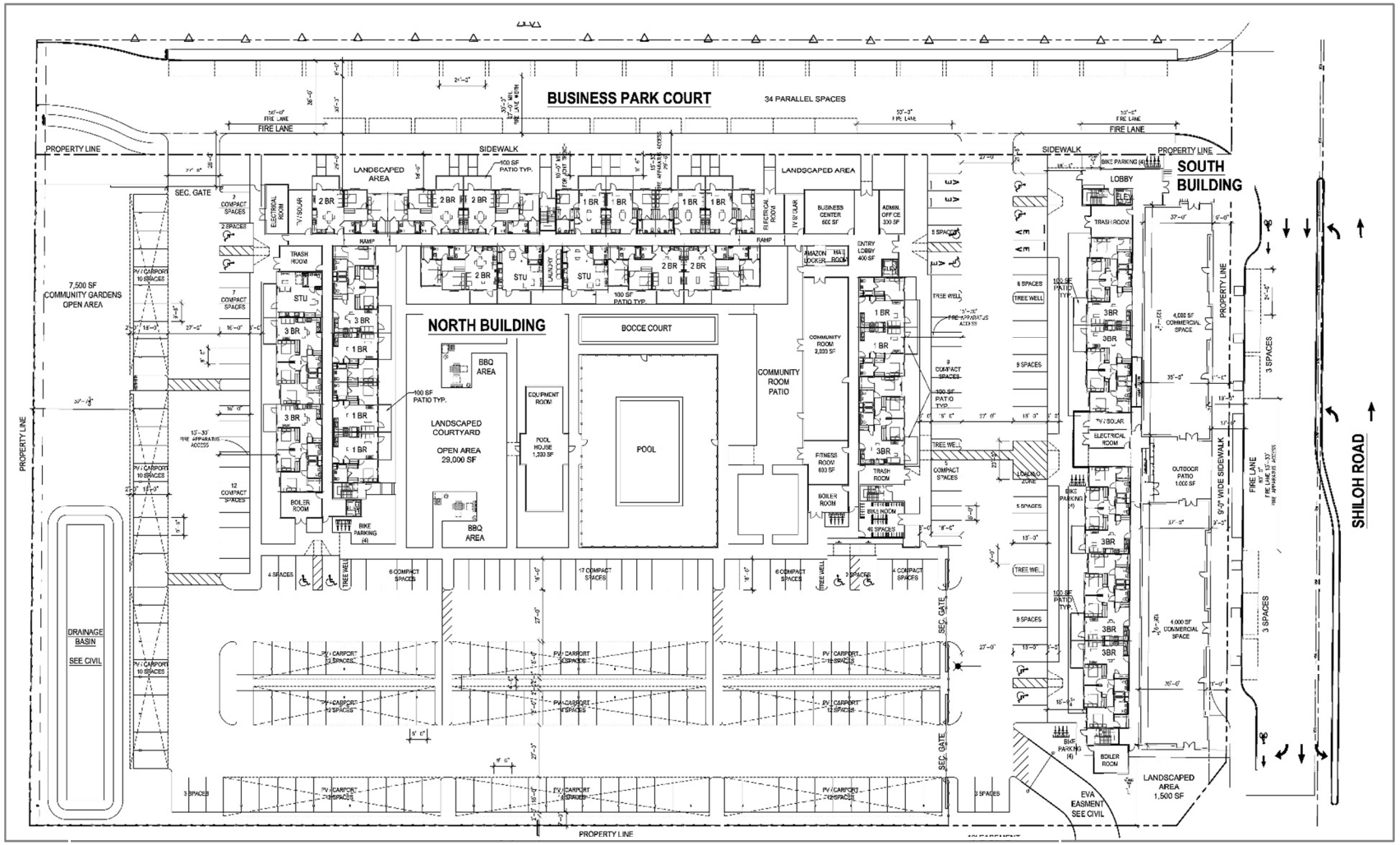
The Project would provide 68 bicycle parking spaces, including 40 long-term bicycle parking spaces in a bike room within the North Building and 28 short-term bicycle parking spaces in outdoor bicycle racks that would be dispersed between both buildings.

Figure 1.2 Project Site Plan (Civil Drawing)



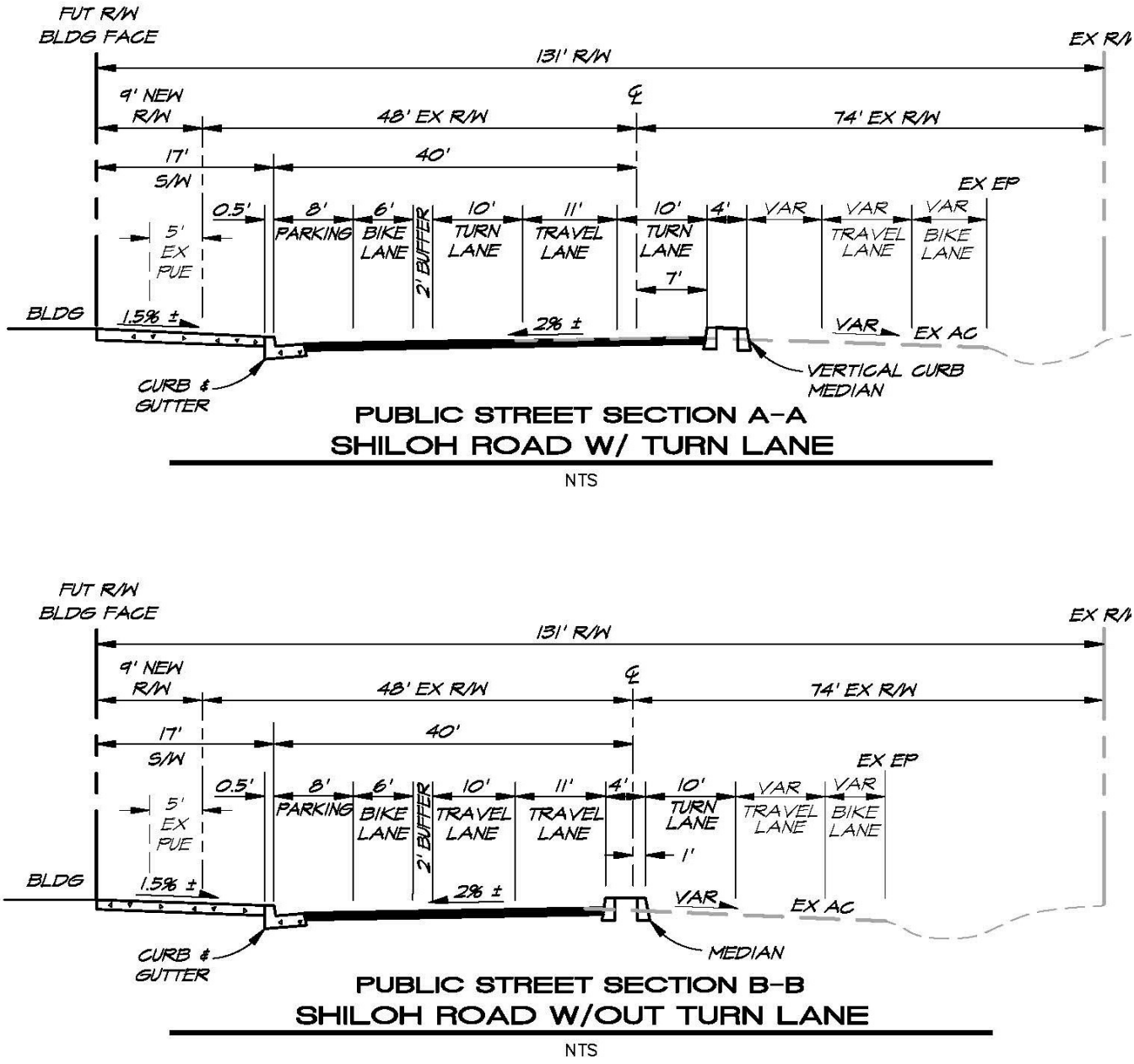
SOURCE: Y&M ARCHITECTS, APRIL 8, 2022

Figure 1.3 Project Site Plan (Architectural Drawing)



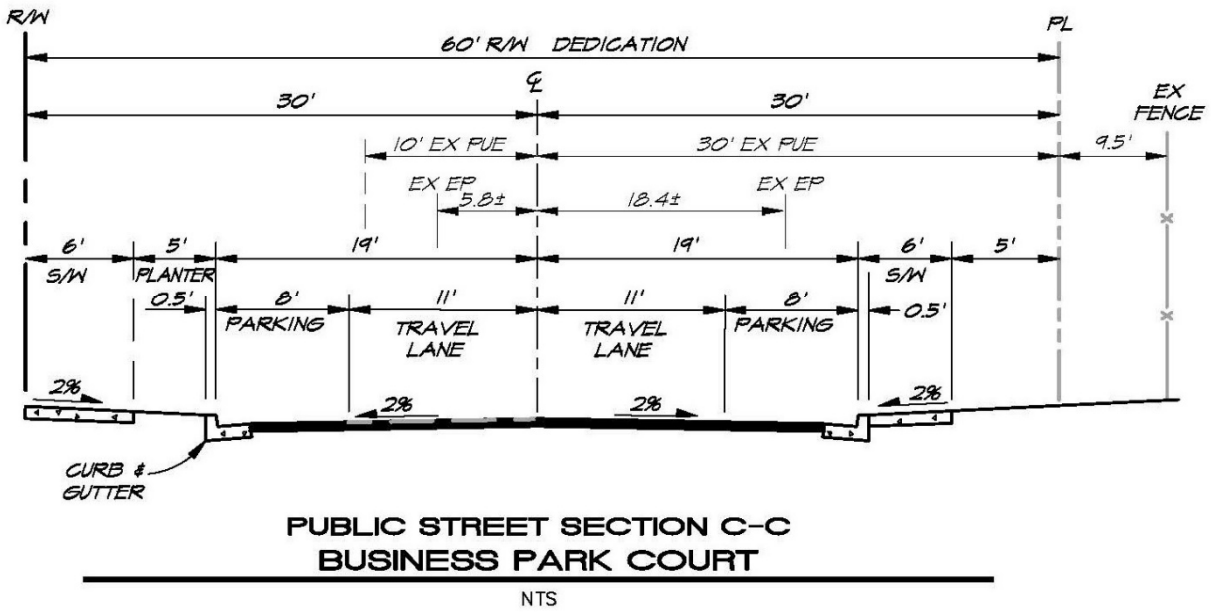
SOURCE: Y&M ARCHITECTS, APRIL 8, 2022

Figure 1.4 Public Street Section: Shiloh Road



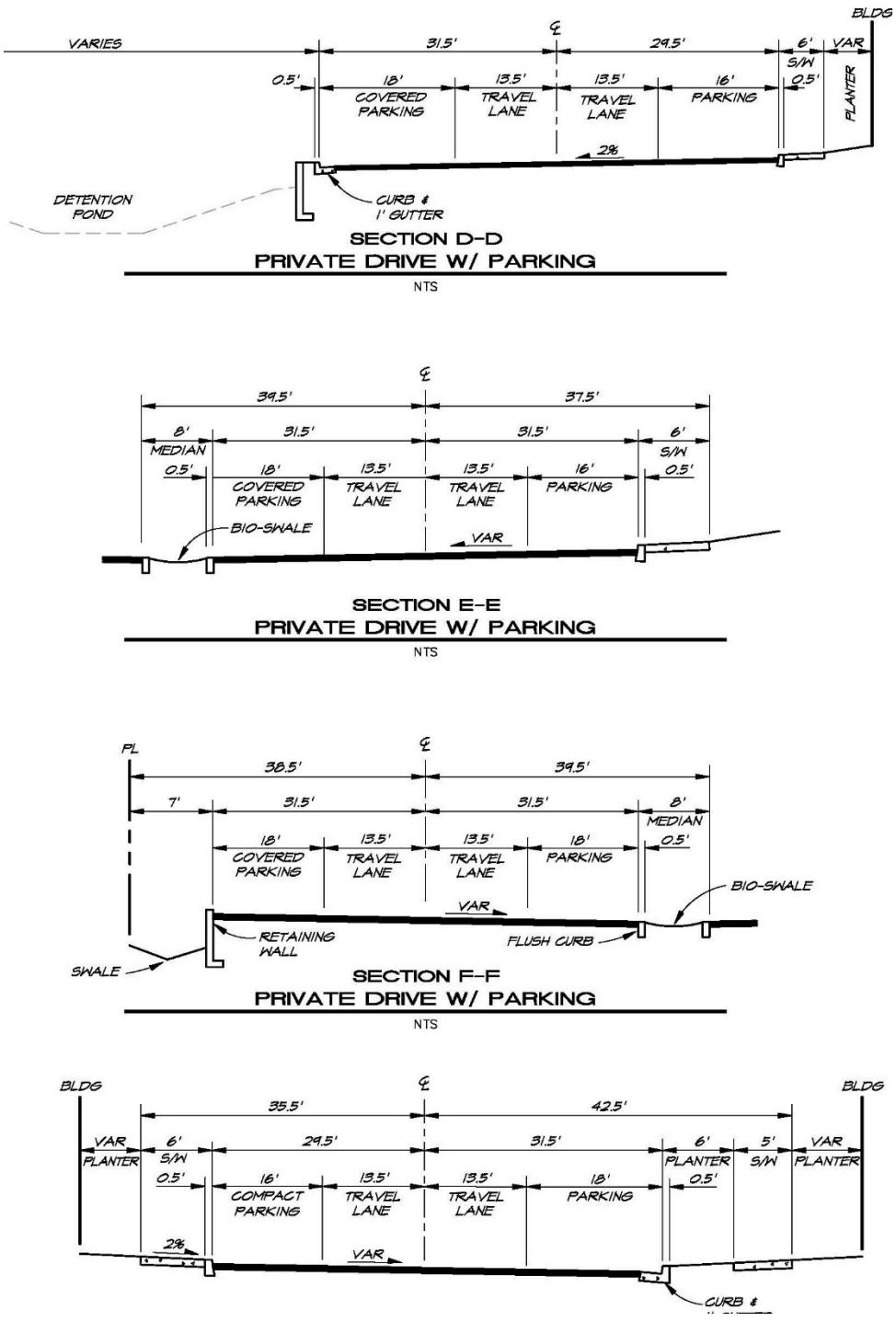
SOURCE: Y&M ARCHITECTS, APRIL 8, 2022

Figure 1.5 Public Street Section: Business Park Court



SOURCE: Y&M ARCHITECTS, APRIL 8, 2022

Figure 1.6 Proposed Private Drive Dimensions



SOURCE: Y&M ARCHITECTS, APRIL 8, 2022

2. Transportation Impacts

This chapter describes the assessment of transportation impacts under the California Environmental Quality Act (CEQA), findings of significance and any recommended mitigations.

2.1 Setting

2.1.1 Street Network

Several key transportation facilities provide access to the study area:

Shiloh Road is designated as a Crosstown arterial street, currently providing two motor vehicle lanes (one per direction) and bicycle lanes in both directions, with a posted speed limit of 40 miles per hour (mph). The Windsor 2040 General Plan identifies the segments near the Project site for future expansion to five motor vehicle lanes (two per direction plus a center turn-lane or median). Sidewalks are not yet provided on Shiloh Road but will be constructed on some portions as part of two current projects:

- The *Shiloh Terrace* project is currently under construction on the northwest corner of Shiloh Road and Old Redwood Highway. Sidewalks will be constructed as part of the project along the entire project frontage.
- The *Clearwater at Windsor* project, on the south side of Shiloh Road opposite Shiloh Crossing, is currently seeking entitlements. Sidewalks are proposed for the entire project frontage along the south side of Shiloh Road.

Hembree Lane is also designated as a Crosstown arterial street and provides three lanes (one per direction plus a center left-turn lane at intersections) on most segments to the north of the Project site, as designated by the General Plan. Near the project site: four lanes are provided near the intersection with Shiloh Road (two northbound lanes and two southbound lanes). Sidewalks are provided on the east side of Hembree Lane. The intersection of Hembree Lane and Shiloh Road is currently a 3-way T-intersection; provision of a fourth leg is anticipated to occur if and when the property on the south side of Shiloh Road were to be developed.

Business Park Court is a local street that connects with Shiloh Road and provides access to the project site and adjacent commercial properties. Sidewalks are not yet provided on Business Park. The *Shiloh Road Village Vision Plan* envisions Business Park Court to be part of a street network that will eventually connect to Old Redwood Highway.

Old Redwood Highway is a Crosstown Connector, running north-south approximately 1,400 feet (0.26 miles) east of the project site, providing direct access to neighborhoods east of the U.S. 101 freeway, and ultimately accessing downtown Windsor to the north. Bicycle lanes are generally provided in both directions, with a posted speed limit of 40 mph near Shiloh Road. There are currently no sidewalks on the segments of Old Redwood Highway nearest to Shiloh Road. Sidewalks will be constructed along the frontage of the *Shiloh Terrace* project near the northwest corner of Old Redwood Highway and Shiloh Road.

U.S. 101 is the largest regional freeway in the area, providing north-south motor vehicle access throughout Sonoma County and to the adjacent counties of Marin (south) and Mendocino (north). US 101 provides two lanes per direction north of downtown Windsor, and three lanes per direction south of downtown Windsor (one of which is a high occupancy vehicle (HOV) lane). The posted speed limit is 65 miles per hour (mph), and access points in the Town of Windsor are found at Old Redwood Highway in the north and Shiloh Road in the south.

As noted above:

- Bicycle lanes are provided on Shiloh Road, Hembree Lane and Old Redwood Highway.
- Sidewalks are provided on the east side of Hembree Lane.
- Sidewalks are not yet provided on Shiloh Road, Business Park Court or segments of Old Redwood Highway nearest to Shiloh Road. The *Shiloh Terrace* project is currently under construction on the northwest corner of Shiloh Road and Old Redwood Highway. Sidewalks will be constructed as part of the project along the entire project frontage. In addition, the *Clearwater at Windsor* project, on the south side of Shiloh Road opposite Shiloh Crossing, is currently seeking entitlements. Sidewalks are proposed for the entire project frontage along the south side of Shiloh Road.

2.1.2 Transit Service

Transit service is provided by Sonoma County Transit, which includes the following bus routes serving the study area:

- **Route 66 Windsor Shuttle** operates on a one-way loop connecting Windsor neighborhoods and downtown Windsor including the Windsor Depot. Near the Project site, Route 66 arrives via eastbound Shiloh Road and serves a northbound bus stop on Hembree Lane, approximately 1,000 feet northwest of the Project site. In addition, Sonoma County recently requested an additional bus stop on the south side of Shiloh Road fronting the proposed *Clearwater at Windsor* project. Buses operate between 7:45 a.m. and 5:08 p.m. Monday to Saturday, and typically arrive every 45 to 55 minutes. The Windsor Shuttle is free for all riders under Sonoma County Transit's "Fare-Free" program. The Windsor Shuttle's "Fare-Free" program is subsidized by the Town of Windsor.
- **Route 60 Cloverdale Santa Rosa** operates on Old Redwood Highway, with stops in both directions located approximately 1,500 feet (0.28 miles) from the Project site. Route 60 provides intercity service that connects the study area with downtown Windsor, Healdsburg and Cloverdale to the north, and downtown Santa Rosa to the south. In downtown Santa Rosa (Third Street Transit Mall), transfers to other Sonoma County Transit Routes, local Santa Rosa CityBus services and regional services provided by Golden Gate Transit can be made. Route 60 operates on a daily schedule between 6:45 a.m. and 9:38 p.m. with buses generally arriving every 45 to 120 minutes in each direction.
- **Sonoma Marin Area Rail Transit (SMART)** operates between Larkspur and the Sonoma County Airport station located on Airport Boulevard approximately two miles southwest of the Project site. Trains operate seven days a week, with roughly hourly service in both directions on

weekdays between 5:02 a.m. and 9:46 p.m. Future plans to extend SMART service north to Cloverdale would include service in downtown Windsor at the Windsor Depot.

2.2 Regulatory Framework

This section summarizes the adopted regulations relevant to the analysis of transportation impacts.

2.2.1 State Regulations

Vehicle Miles Traveled & Automobile Delay

As amended in December 2018 and effective statewide beginning on July 1, 2020, CEQA Guidelines section 15064.3 (Determining the Significance of Transportation Impacts) specifies that vehicle miles traveled (VMT) is the primary metric or measure of effectiveness (MOE) for determining the significance of transportation impacts across California. Section 15064.3(a) also specifies that a projects' effect on automobile delay shall not constitute a significant environmental impact, except as provided in subdivision (b) (2) which is applicable only to roadway capacity projects. As described in Section 15064.3(a) of the amended CEQA Guidelines:

> *Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project.* [1] *Other relevant considerations may include the effects of the project on transit and non-motorized travel.*

The updated CEQA guidelines specify that lead agencies have discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, and to develop thresholds of significance. Lead agencies have discretion to choose the most appropriate methodology to evaluate a project's vehicles miles traveled, including whether to express the change in absolute terms, per capita, per household or any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered: a lead agency may evaluate the project's vehicle miles travelled qualitatively. In December 2018, OPR circulated its most recent Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR) that provides recommendations and describes various options for assessing VMT for transportation analysis purposes. The VMT analysis options described by OPR are primarily tailored towards single-use development residential, office or office projects. OPR recommends the following methodology and criteria for specific land uses:

- For residential projects, OPR recommends that VMT impacts be considered potentially significant if a residential project is expected to generate VMT per Capita (i.e., VMT per resident) at a rate that exceeds 85 percent of a regional average.

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[1] As described separately in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR, December 2018), VMT re-routed from other origins or destinations as the result of a project would not be attributable to a project except to the extent that the re-routing results in a net increase in VMT. For example, OPR guidelines note that retail projects typically re-route travel from other retail destinations, and therefore a retail project may lead to increases or decreases in VMT, depending on previously existing travel patterns.

- For office projects, OPR recommends that VMT impacts be considered potentially significant if an office project is expected to generate VMT per Employee at a rate that exceeds 85 percent of a regional average.
- For retail projects, OPR recommends that VMT impacts be considered potentially significant if a project results in a net increase in total VMT. This approach takes into account the likelihood that retail developments may lead to increases or decreases in VMT, depending on previously existing retail travel patterns. This approach may also be used for other types of projects with customer components.
- OPR does not provide specific guidance on evaluating other land use types, except to say that other land uses could choose to use the method applicable to the land use with the most similarity to the proposed project.
- OPR also recommends exempting some project types from VMT analysis based on the likelihood that such projects will generate low rates of VMT. OPR recommends that projects generating less than 110 trips per day generally may be assumed to cause a less than significant transportation impact.

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Any improvements or modifications to the SHS would need to be approved by Caltrans. In May 2020, the California Department of Transportation (Caltrans) published the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG), which replaced its Guide for the Preparation of Traffic Impact Studies (2002). The TISG generally endorses the policies, technical approaches, and recommendations from OPR's Technical Advisory. It also indicates that Caltrans intends to "transition away from requesting LOS or other vehicle operations analyses of land use projects", instead placing the focus on VMT and safety.

2.2.2 Regional Regulations

Plan Bay Area

Plan Bay Area 2050 is the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) that describes the long-range plan for transportation improvements within the nine county Bay Area region that includes Windsor and Sonoma County.

2.2.3 Local Regulations

Windsor General Plan

The Circulation Element of the *Town of Windsor General Plan* contains a range of policies and implementation programs designed to maintain or improve transportation circulation within the Town. Figure 2.1 shows the planned street network as identified in the Circulation Element.

Figure 2.1 Windsor 2040 Circulation System Map

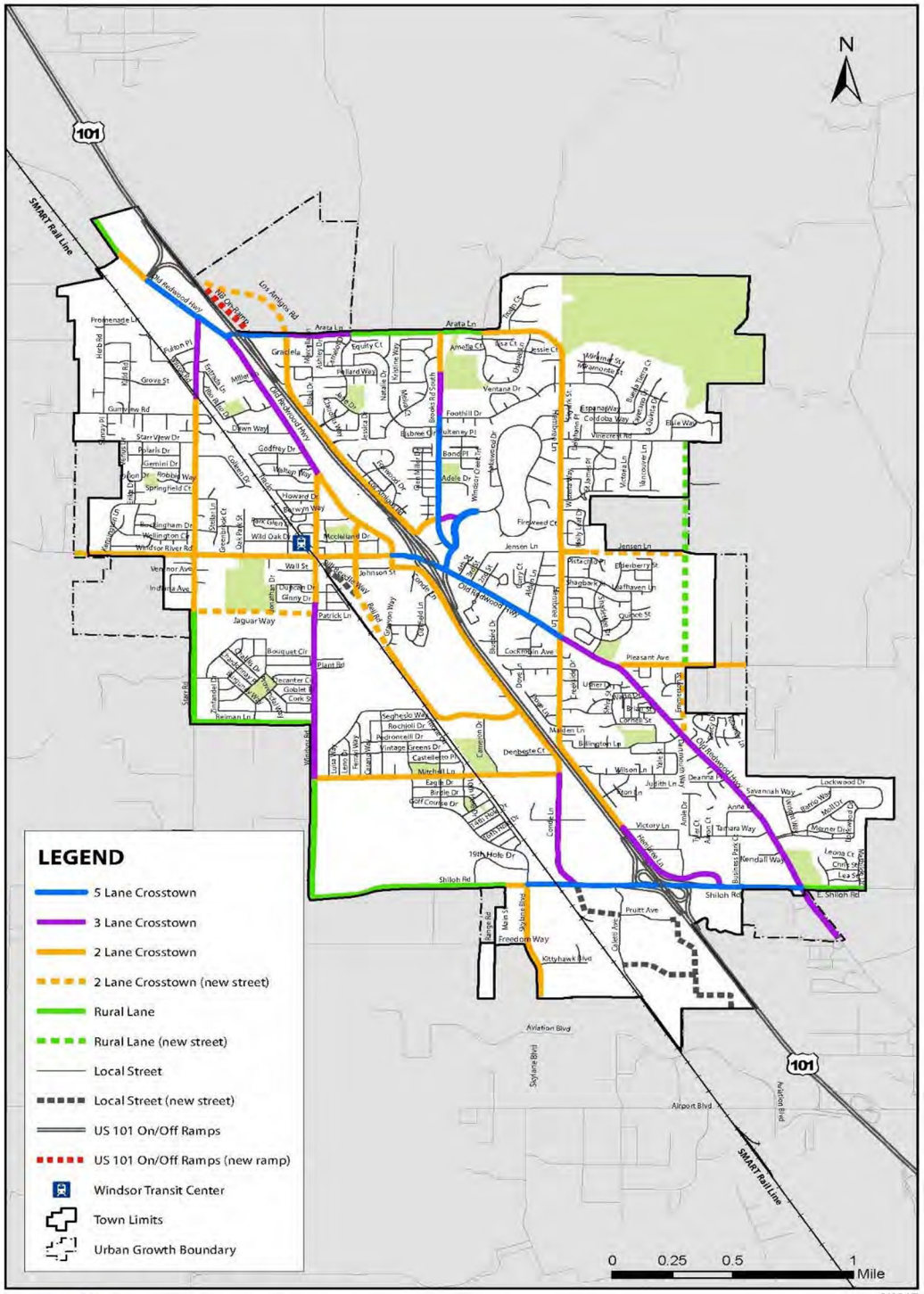


Figure M-1: Windsor 2040 General Plan Circulation System

2.3 CEQA Significance Criteria

For purposes of evaluating the significance of potential environmental impacts attributable to the project under the California Environmental Quality Act (CEQA), transportation impacts may be considered potentially significant if the proposed project were to:

a. *Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities; or*

b. *Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), which pertains to vehicle miles traveled (VMT); or*

c. *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or*

d. *Result in inadequate emergency access.*

2.4 Impact & Mitigation Findings

2.4.1 Transportation Programs, Plans, Ordinances & Policies

IMPACT T-1	**Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? *Finding: this impact is less than significant and no mitigation is required.***

This section assesses whether the proposed project is consistent with applicable regional and local transportation programs, plans, ordinances and policies that were summarized in the Regulatory Framework section of this report. Conflicts with adopted level of service (LOS) standards would not be considered significant for environmental impact analysis purposes.

The project is not anticipated to conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. The project would widen Shiloh Road and Business Park Court consistent with the Town's street network plan. The Project provide a 17-foot wide sidewalk zone on Shiloh Road bordering the site.

The proposed project would not conflict with the Town's adopted General Plan Transportation & Mobility Element or Bicycle Master Plan. Similarly, the project would not conflict with any adopted transit plan or relevant ordinances and policies addressing circulation. This impact is less than significant.

2.4.2 Vehicle Miles Traveled (VMT)

IMPACT T-2	**Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3 (b) due to VMT attributable to the Project?** ***Finding: this impact is less than significant and no mitigation is required.***

VMT for the Project was evaluated according to guidance provided in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* published by the California Governor's Office of Planning Research (OPR) in December 2018 (referred to below as the "Technical Advisory). This publication identifies several criteria that may be used by jurisdictions to identify certain types of projects that are unlikely to have a significant VMT impact and can be "screened" from further analysis. The Technical Advisory specifies that 100 percent affordable housing projects are one such type of project, as are local-serving retail projects. The Technical Advisory indicates that less than 50,000 square feet of retail space is typically considered local-serving.

The Project is presumed to have a less than significant impact on VMT because:

- 100 percent of the residential units will be affordable housing, and the proposed provision of automobile parking does not exceed the minimum requirements for residential development in Windsor; and
- The retail portion of the development will provide 8,000 square feet of local-serving retail space that is unlikely to result in a net increase in total VMT.

2.4.3 Hazards

IMPACT T-3	**Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous *intersections) or incompatible uses (e.g., farm equipment)? Finding: the Project proposes a westbound right-turn lane on Shiloh Road (approaching the intersection with Hembree Lane) to the left of the bicycle lane that would increase hazards to bicyclists. This impact is less than significant with Mitigation T-3.***

This section analyzes whether the proposed Project would result in increased hazards applicable to transportation.

Collision Data Review

Reported collision data for the 5-year period from January 1, 2015 to December 31, 2019 was reviewed at the following key intersections near the Project site shown on Figure 2.2:

1. Hembree Lane & Shiloh Road
2. Business Park Court & Shiloh Road
3. Old Redwood Highway & Shiloh Road
4. US 101 Northbound Off-ramp & Shiloh Road
5. US 101 Southbound Off-ramp & Shiloh Road

Figure 2.2 Study Intersection Locations

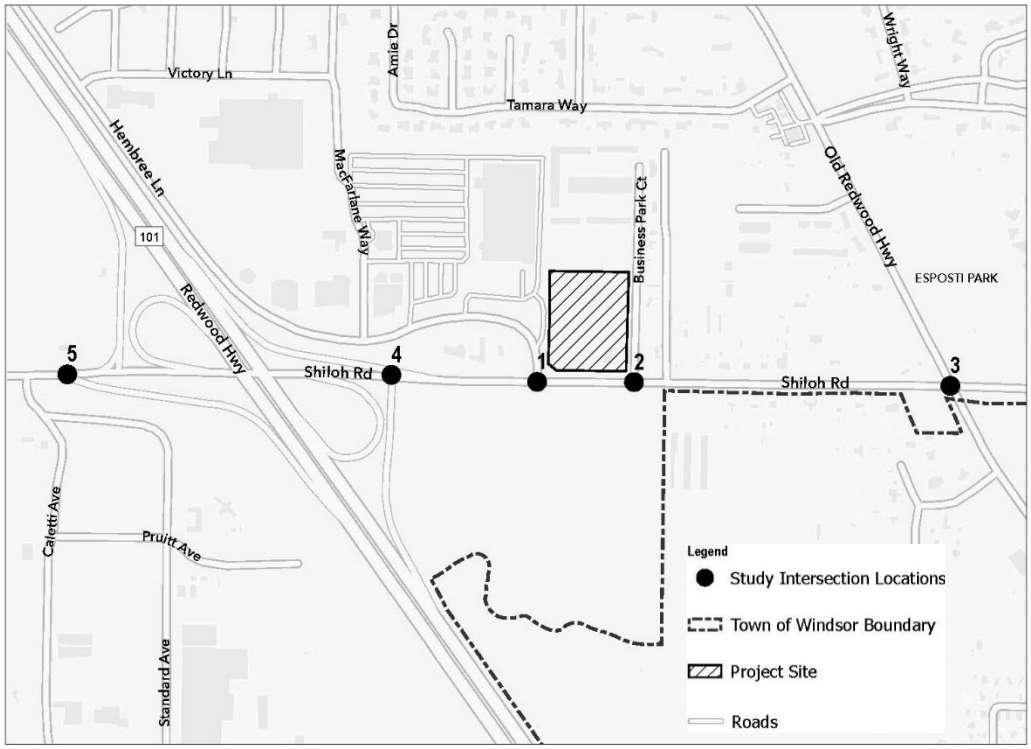


Table 2.2 summarizes the 5-year collision data. As shown: the rate of collisions was lower than the statewide average at most intersections near the Project site, with the exception of the intersection of the U.S. 101 Northbound Off-ramp with Shiloh Road which has a collision rate just above the State average (attributable mostly to collisions that were limited to property damage). There were no reported collisions involving pedestrians at any of the five intersections, and just one collision involving bicyclists. Based on this review of collision data: no significant safety issues are identified.

Table 2.1 Reported Collisions (2015-2019)

#	Intersection	Total Reported Collisions (2015-2019)	Calculated Collision Rate (c/mve)	Statewide Average Collison Rate (c/mve)	Injury Collisions, Automobile with:				Property Damage Only
					Automobile	Bicycle	Pedestrian	Total	
1	Hembree Lane & Shiloh Road	**10**	0.16	0.19	3	0	0	**3**	**7**
2	Business Park Court & Shiloh Road	**1**	0.03	0.08	0	0	0	**0**	**1**
3	Old Redwood Highway & Shiloh Road	**10**	0.22	0.24	3	1	0	**4**	**6**
4	US 101 NB Off-ramp & Shiloh Road	**10**	0.20	0.19	1	0	0	**1**	**9**
5	US 101 SB Off-ramp & Shiloh Road	**4**	0.09	0.19	2	0	0	**2**	**2**
Total		**35**			9	1	0	**10**	**25**

Source: Statewide Integrated Traffic Records System (SWTTRS), January 1, 2015 to December 31, 2019

Site Access Constraints

Existing constraints to travel to/from the project site include:

- Sidewalks are not yet provided on Shiloh Road or Business Park Court. The lack of sidewalks on Shiloh Road is relevant to pedestrian access to/from Espoti Park and the Route 60 bus stops on Old Redwood Highway that provide service to/from downtown Windsor and Cloverdale to the north, and Santa Rosa to the south.
- There are no marked crosswalks across Shiloh Road near the Project site. The nearest marked crosswalk for pedestrians desiring to cross Shiloh Road is located at Old Redwood Highway,

approximately 1,400 feet (0.27 miles) east of the Project site. Provision of a marked crosswalk across the east leg of the Hembree Lane/Shiloh Road is anticipated at such time as the property on the south side of Shiloh Road is developed.

The existing sidewalk on the east side of Hembree Lane provides pedestrian access to and from retail services including a grocery store and restaurants located near the Project site on Hembree Lane. In addition, the existing sidewalk on Hembree Lane provides access to/from the Route 66 (Windsor Shuttle) bus stop that provides service to and from downtown Windsor.

Existing bicycle lanes are provided on Hembree Lane, Shiloh Road and Old Redwood Highway.

Proposed Project Improvements

The Project would provide a sidewalk on the north side of Shiloh Road between Hembree Lane and Business Park Court that would connect with an existing sidewalk on Hembree Lane, and the Project would also provide sidewalks on both sides of Business Park Court. The proposed pedestrian facilities would improve pedestrian connectivity in the area and are not expected to result in increased hazards. Direct pedestrian and bicycle access to the site would be provided via both Shiloh Road and Business Park Court.

Direct motor vehicle access to the Project site would be provided via Business Park Court, which would be improved with curbs and widened to accommodate on-street parking in addition to the provision of sidewalks described above. The Project would provide an eastbound left-turn pocket from Shiloh Road to Business Park Court to enhance access and reduce potential hazards associated with left-turn movements. Since the Project would not have direct driveway across Shiloh Road: there are no safety concerns due to driveway sight distance.

In response to potential safety concerns: left-turn movements from Business Park Court to eastbound Shiloh Road will eventually be prohibited, at such time as a westbound left-turn/U-turn lane is provided on Shiloh Road approaching the intersection with Hembree Lane. Provision of the left-turn U-turn lane will allow vehicles exiting Business Court a right-turn (but desiring to travel east) to make a U-turn to travel east on Shiloh Road.

Potential safety hazards due to the design of the Project are limited to the following: As shown on the Project site plan set, the Project proposes to convert the existing westbound right lane on Shiloh Road (approaching the intersection with Hembree Lane) from a shared through/right-turn lane to a right-turn only lane, while the existing westbound through bicycle lane would remain to the right of the proposed right-turn only lane. However, this proposed configuration would increase the risk of potential conflicts between right-turning motorists and bicyclists continuing straight through the intersection. In addition, the proposed configuration conflicts with *Manual on Uniform Control Traffic Control Devises* (MUTCD) guidance which states that “A through bicycle lane shall not be positioned to the right of a right turn only lane” (MUTCD 2003 Edition, Chapter 9C). As a result: the Project would increase hazards due to a design feature. ***This impact is potentially significant.***

Where motorists must make a right-turn across an adjacent bicycle lane: the California vehicle code (section 21717) requires motorists to merge into the bicycle lane prior to making the right-turn. Motorists making a right-turn from an adjacent through lane thus typically merge into the bicycle lane

approximately 50 to 200 feet before the intersection. This requirement is not applicable where a right-turn only lane is provided to the right of the bicycle lane.

Mitigation T-3, Westbound right-turns across bicycle lane on Shiloh Road at the intersection with Hembree Lane: Revise the proposed westbound lane configuration on Shiloh Road approaching the intersection with Hembree Lane to ensure that provisions for right-turns by motor vehicles across the adjacent bicycle lane are consistent with applicable street design guidelines (including MUTCD and NACTO guidelines) and California vehicle code requirements. There are several potential options for accomplishing this:

- **Mitigation Option A:** provide the proposed westbound right-turn lane to the right of the bicycle lane between Business Park Court and Hembree Lane. The bicycle lane would thus be located between the right-turn lane and through lane. Appropriate striping and signing treatments, consistent with MUTCD and NACTO guidance, should installed where westbound motorists would cross the bicycle lane to enter the right-turn lane.
- **Mitigation Option B:** maintain the current westbound lane configuration approaching Hembree Lane, with a shared through/right-turn lane to the left of the bicycle lane. With this configuration: right-turning motorists would merge into the bicycle lane within 50 to 200 feet of the intersection, consistent with California vehicle code requirements.
- **Mitigation Option C:** provide two westbound through lanes approaching Hembree Lane to the left of the bicycle lane and provide a separate, short right-turn lane to the right of the bicycle lane within 50 to 200 feet of the intersection. As with Option A: appropriate striping and signing treatments, consistent with MUTCD and NACTO guidance, should be installed where westbound motorists would cross the bicycle lane to enter the right-turn lane. This option would require relocation of three proposed on-street parking spaces and would increase the pedestrian crossing distance across Shiloh Road by approximately 10 feet.

Significance with Mitigation T-3: ***Less than significant.***

IMPACT T-4 Would the Project result in inadequate emergency access? ***Finding: this impact is less than significant and no mitigation is required.***

Emergency vehicles would have direct access to the project site from Shiloh Road, Business Park Court and Hembree Lane, including access from Hembree Lane via an EVA easement shown on the site plans. Fire truck movements would be adequately accommodated as shown on the Fire Truck Turning Exhibits provided in Appendix A.

The project is not anticipated to result in inadequate emergency access. This impact is less than significant and no mitigation is required.

3. Traffic Level of Service

This section describes the assessment of traffic level of service (LOS) that was conducted to determine the effect of the Project on automobile delay at five intersections near the project site. In addition, this section evaluates the project effect on left-turn queueing at each study intersection.

3.1 LOS Methodologies

Motor vehicle traffic operations have been quantified through the determination of "Level of Service" (LOS). LOS is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection, or roadway segment, representing progressively worsening traffic conditions. LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. Levels of Service will be calculated for all intersection control types, roadway segments, and freeway ramp merge, diverge, and weave sections using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Sixth Edition, A Guide for Multimodal Mobility Analysis, 2016* (HCM 6).

The Synchro 10 (Trafficware) software program was used to implement the LOS methodologies. Synchro 10 considers intersection signal timing and queuing constraints when calculating delay and the corresponding LOS. Intersection LOS will be calculated for all control types using the methods documented in HCM 6. For signalized or all-way stop-controlled (AWSC) intersections, an LOS determination is based on the calculated averaged delay for all approaches and movements. For two-way or side-street stop controlled (TWSC) intersections, an LOS determination is based upon the calculated average delay for all movements of the worst performing approach. The vehicular-based LOS criteria for different types of intersection controls are presented in Table 3.1.

Table 3.1 Intersection Level of Service (LOS) Criteria

LOS	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle	
				Signalized	Un-signalized
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤10.0	≤10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and ≤20.0	>10.0 and ≤15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and ≤35.0	>15.0 and ≤25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and ≤55.0	>25.0 and ≤35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and ≤80.0	>35.0 and ≤50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	>80.0	>50.0

Source: *Highway Capacity Manual Sixth Edition, A Guide for Multimodal Mobility Analysis*, 2016 (HCM 6)

3.2 Windsor General Plan LOS Standard

The project effect on automobile delay, as defined by the Town's intersection level of service (LOS) standards that apply to the weekday peak travel periods, is relevant to assessing whether or not automobile traffic generated by the project would potentially conflict with the Town's adopted General Plan performance standards. The Town of Windsor's adopted LOS Standard is contained in the Town's General Plan and reads as follows:

> *The Town shall maintain level of service standards that define the minimum acceptable operating characteristics for intersections and streets. A level of service D (LOS D) is defined as the minimum acceptable level of congestion during the weekday morning peak periods for high- volume facilities such as freeways, crosstown streets and signalized or all-way stop-controlled intersections. This standard shall apply at all these locations except the following intersections, which are regional gateways to the Town's commercial and civic area, and where a Level of Service E is tolerated by the Town and considered acceptable: Old Redwood Highway/US Highway 101 Northbound off-ramps/Lakewood Drive; Old Redwood Highway/US Highway 101 Southbound ramps; and Old Redwood Highway/Conde Lane/Windsor River Road.*

The project would result in conditions that fail to meet with the Town's General Plan LOS standard if it results in unacceptable LOS at any study intersection; or if the project adds five or more seconds of average delay to an intersection that operates at unacceptable LOS. Therefore, for purposes of this study, the project would fail to meet the Town's LOS standard if:

- The project results in unacceptable LOS E or F at any study intersection; or
- At study intersections operating at an unacceptable LOS E or F without the project, impacts will be potentially significant if the Project adds more than four seconds of average delay to the intersection.

3.3 Study Intersections

For this study, LOS was evaluated at the following five intersections on Shiloh Road:

1. Hembree Lane & Shiloh Road
2. Business Park Court & Shiloh Road
3. Old Redwood Highway & Shiloh Road
4. US 101 Northbound Off-ramp & Shiloh Road
5. US 101 Southbound Off-ramp & Shiloh Road

Figure 3.1 shows the location and existing lane geometrics and intersection control types that are currently in place at each of the study intersections. For this study, LOS was evaluated under the following scenarios, described in further detail in the following sections:

- Existing Conditions
- Existing Plus Project Conditions
- Cumulative No Project Conditions
- Cumulative Plus Project Conditions

3.4 Existing Conditions

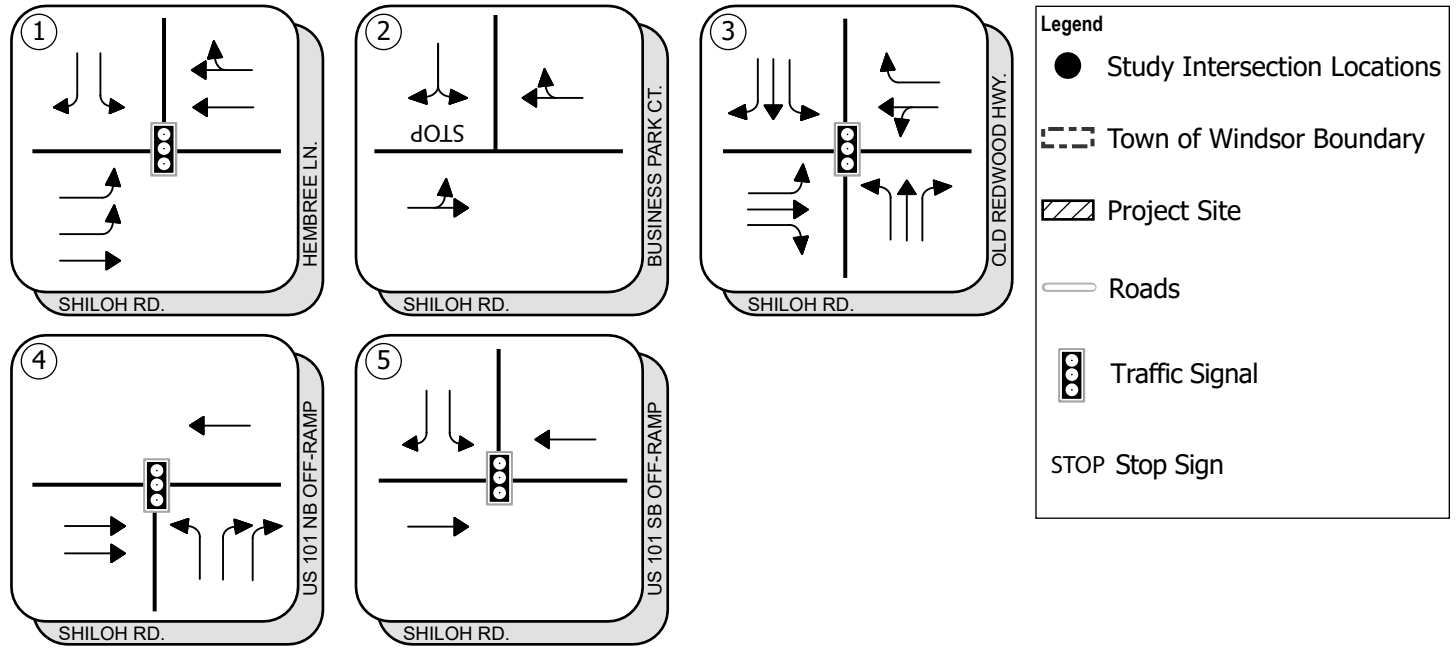
Existing weekday AM and PM peak hour LOS was determined based on existing traffic volumes, lane geometrics, and intersection controls. Given the reduction in traffic volumes during 2020-21 due to the COVID-19 pandemic, existing intersection volumes were based on traffic counts conducted in December 2018 and adjusted to reflect non-pandemic 2021 conditions. The adjustment factor was determined based on comparing 2018 and 2020 segment volumes on Shiloh Road and Old Redwood Highway[2]. Figure 3.2 illustrates the existing motor vehicle turning movements at each study intersection with those adjustments. The Existing LOS scenario was utilized as the baseline scenario for assessing the effect of project traffic on existing levels of intersection delay. As presented in Table 3.2 all study intersections operate at an acceptable LOS D or better under Existing Conditions during both the AM and PM peak hours.

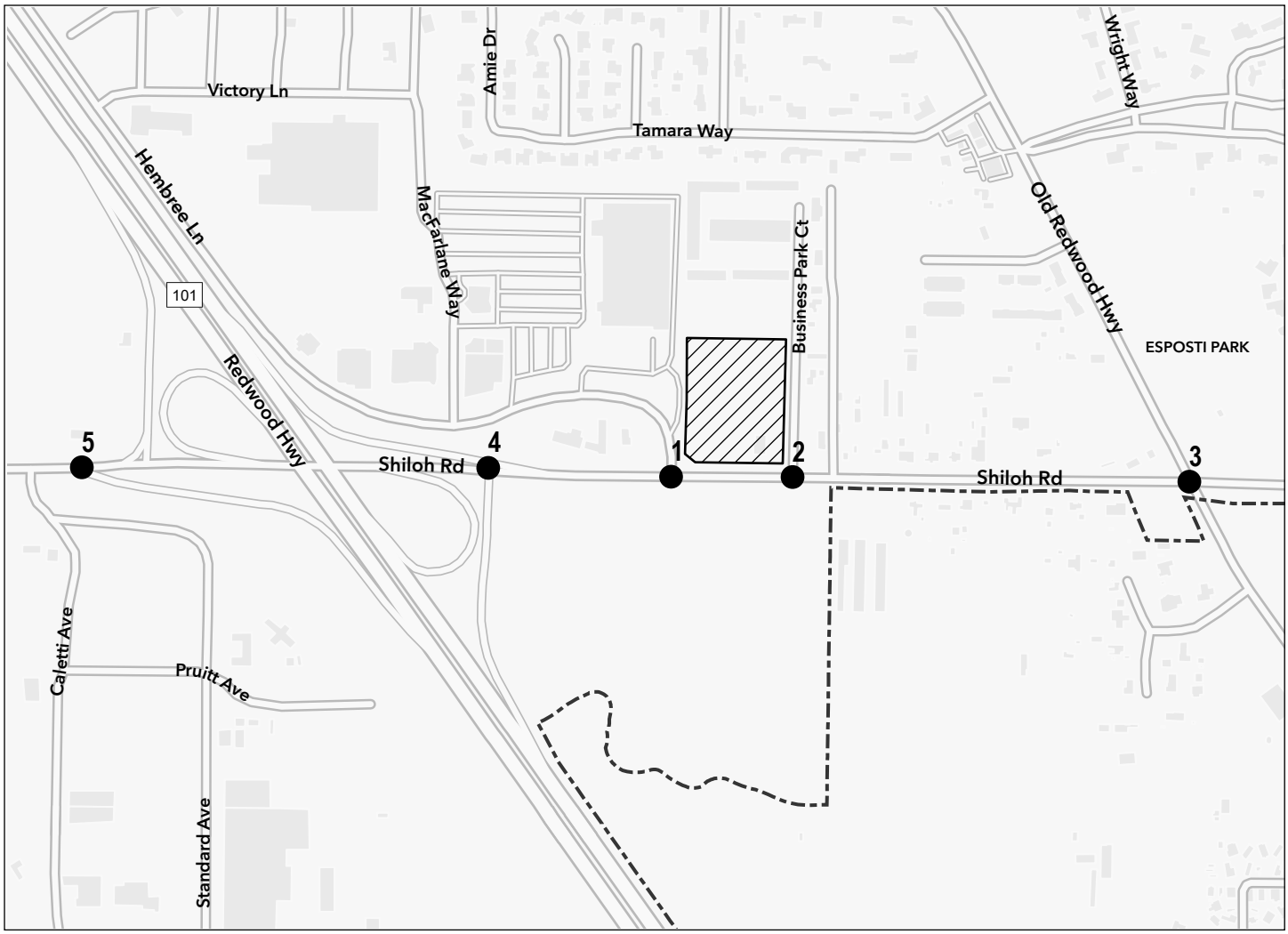
Table 3.2 Existing Conditions Intersection LOS

#	Intersection	Control Type[1]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay[2]	LOS	Delay[2]	LOS
1	Hembree Lane & Shiloh Road	Signal	D	11.3	B	16.5	B
2	Business Park Court & Shiloh Road	SSSC	D	16.9	C	16.2	C
3	Old Redwood Highway & Shiloh Road	Signal	D	26.0	C	29.6	C
4	US 101 NB Off-ramp & Shiloh Road	Signal	D	41.9	D	20.8	C
5	US 1 01 SB Off-ramp & Shiloh Road	Signal	D	22.4	C	11.1	B

Notes:
1. SSSC = Side Street Stop Control
   Average vehicle delay in seconds.

[2] W-Trans, *Shiloh Terrace Project Traffic Impact Study*, August 19, 2021





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TRAFFIC IMPACT STUDY

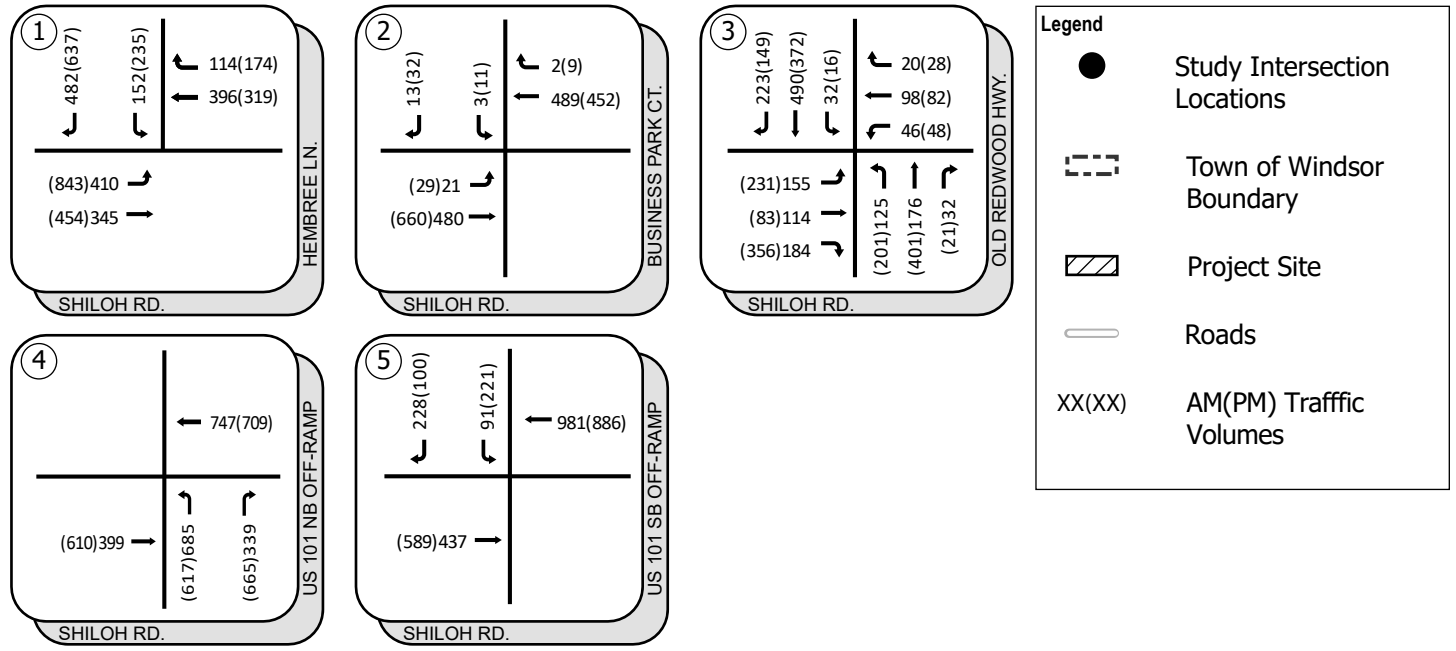
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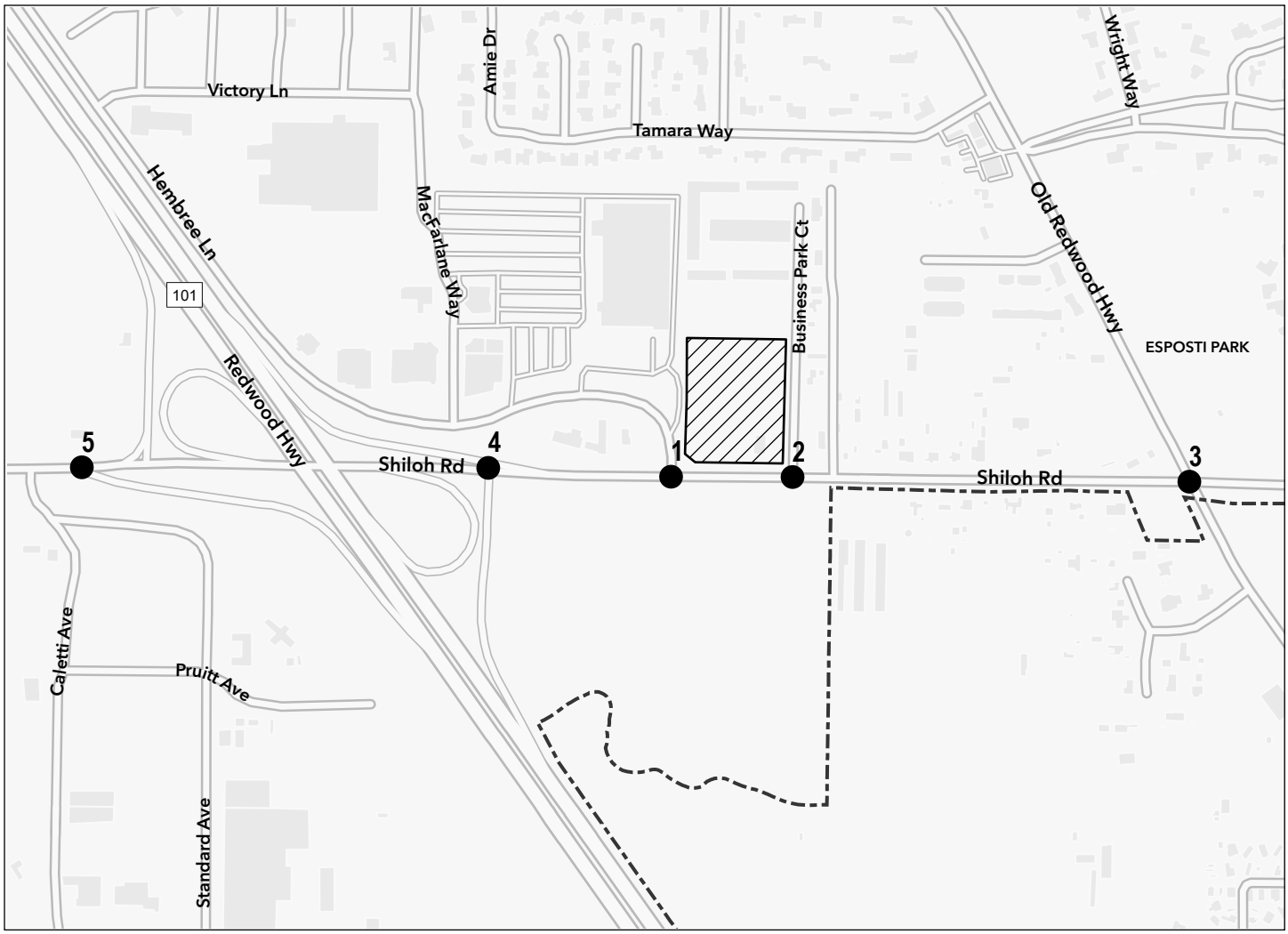
Project No. **1256511**
Revision No. **-**
Date **NOVEMBER 2021**

FIGURE 3.1

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TRAFFIC IMPACT STUDY

EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES

Project No. **1256511**
Revision No. **-**
Date **NOVEMBER 2021**

FIGURE 3.2

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3.5 Existing plus Project Conditions

Existing Plus Project conditions refers to the analysis scenario in which project trips at each study intersection are added to the existing traffic volumes.

3.5.1 Project Trip Generation

The project trip generation forecast describes the anticipated net increase in motor vehicle trips that is anticipated to result from the Project. This includes a forecast of daily vehicle trips, as well as vehicle trips that would be generated during the typical AM peak hour (weekdays between 7:00 a.m. and 9:00 a.m.), and typical PM peak hour (weekdays between 4:00 p.m. and 6:00 p.m.).

The volume of motor vehicle trips that would be generated by the proposed project was forecasted based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual (11th Edition 2021).* Table 3.3 presents the ITE vehicle trip generation rates. Table 3.4 presents the net trip generation forecast for the Project, including adjustments to account for internal trips and retail pass-by trips. As shown, the Project is forecasted to generate 1,025 daily motor vehicle trips, including 74 trips during the a.m. peak hour and 96 trips during the p.m. peak hour.

Table 3.3 Vehicle Trip Generation Rates

Land Use Category (ITE Code)	Unit [1]	Daily Trip Rate per Unit	AM Peak Hour Trip Rate per Unit			PM Peak Hour Trip Rate per Unit		
			Total	In %	Out %	Total	In %	Out %
Multifamily Housing (ITE land use 221)	DU	4.54	0.37	23%	77%	0.39	61%	39%
Strip Retail Plaza <40ksf (ITE land use 822)	KSF	54.45	2.36	60%	40%	6.59	50%	50%

Notes:
1. DU = dwelling units. KSF=1,000 square feet
2. Trip generation rates from Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition, 2021.

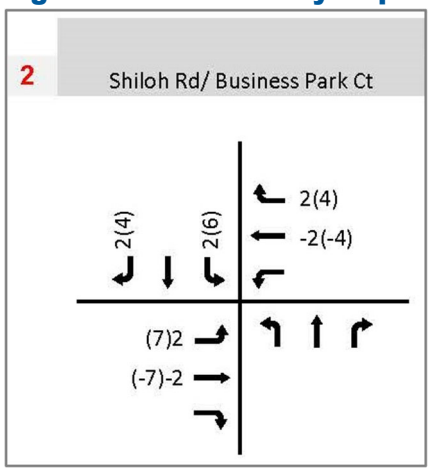
Table 3.4 Vehicle Trip Generation Forecast – Proposed Project

Use	Quantity	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			Total	In	Out	Total	In	Out
Multifamily Housing	173 DU	785	64	15	49	67	41	26
Retail Commercial	8 KSF	436	19	11	8	53	27	26
Internal Capture [1]	*5%*	*-22*	*-1*	*-1*	*0*	*-3*	*-2*	*-1*
Subtotal		***1,199***	***82***	*25*	*57*	***117***	*66*	*51*
Retail Pass-by Trips [2]	*40%*	***174***	***8***	*4*	*4*	***21***	*11*	*10*
Net Vehicle Trips with Project		**1,025**	**74**	21	53	**96**	55	41

Notes:
1. Internal Capture adjustment to prevent double-counting of trips between the housing and retail. The internal capture rate is based on ITE Trip Generation Handbook, 2nd Edition and was applied to the retail use.
2. Retail pass-by rate for Shopping Plaza 40 ksf to 150 ksf (ITE Land Use 821) from *2021 Pass-By Tables for ITE TripGen Appendices* (ITE Trip Generation Manual 11th Edition 2021).

Based on the vehicle trip generation forecast, the retail portion of the project would attract 8 pass-by trips during the AM peak hour (4 inbound and 4 outbound) and 21 pass-by trips during the PM peak hour (11 inbound and 10 outbound). Figure 3.3A shows the anticipated net effect of pass-by trips on turning movements at the intersection of Shiloh Road and Business Park Court (study intersection #2).

Figure 3.3A Pass-by Trips

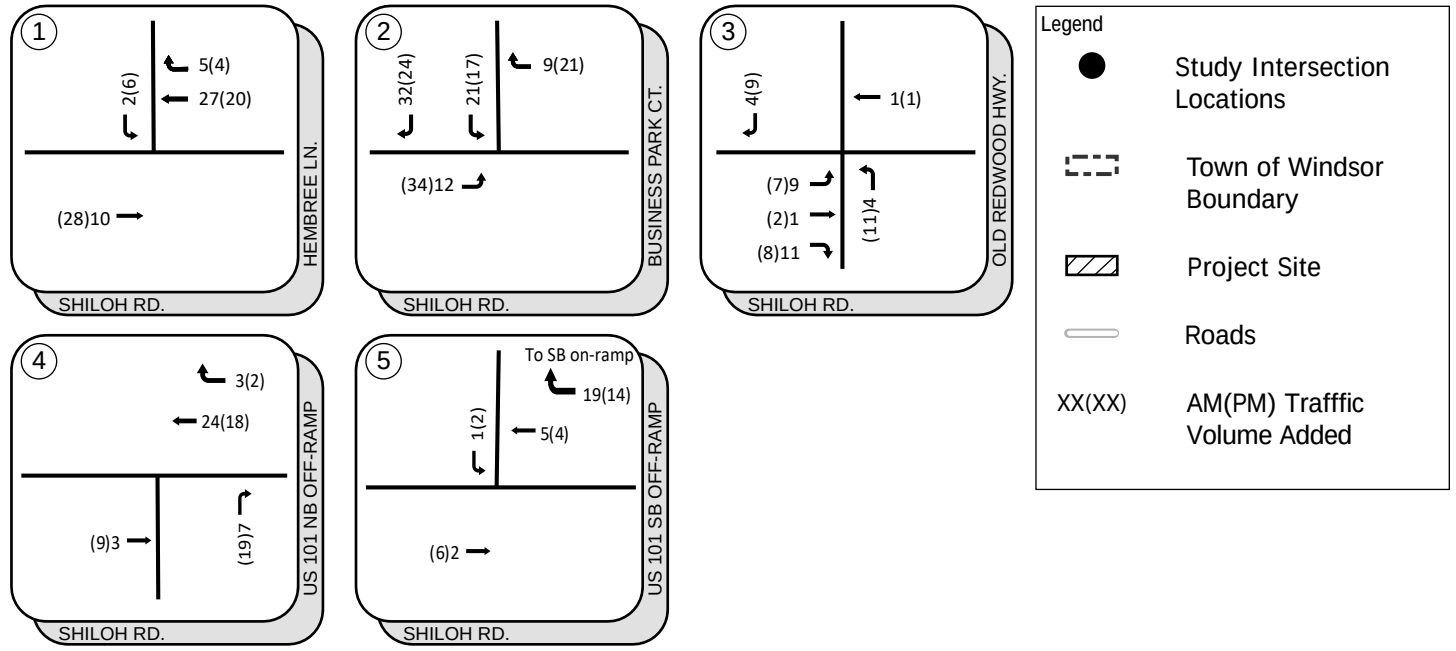


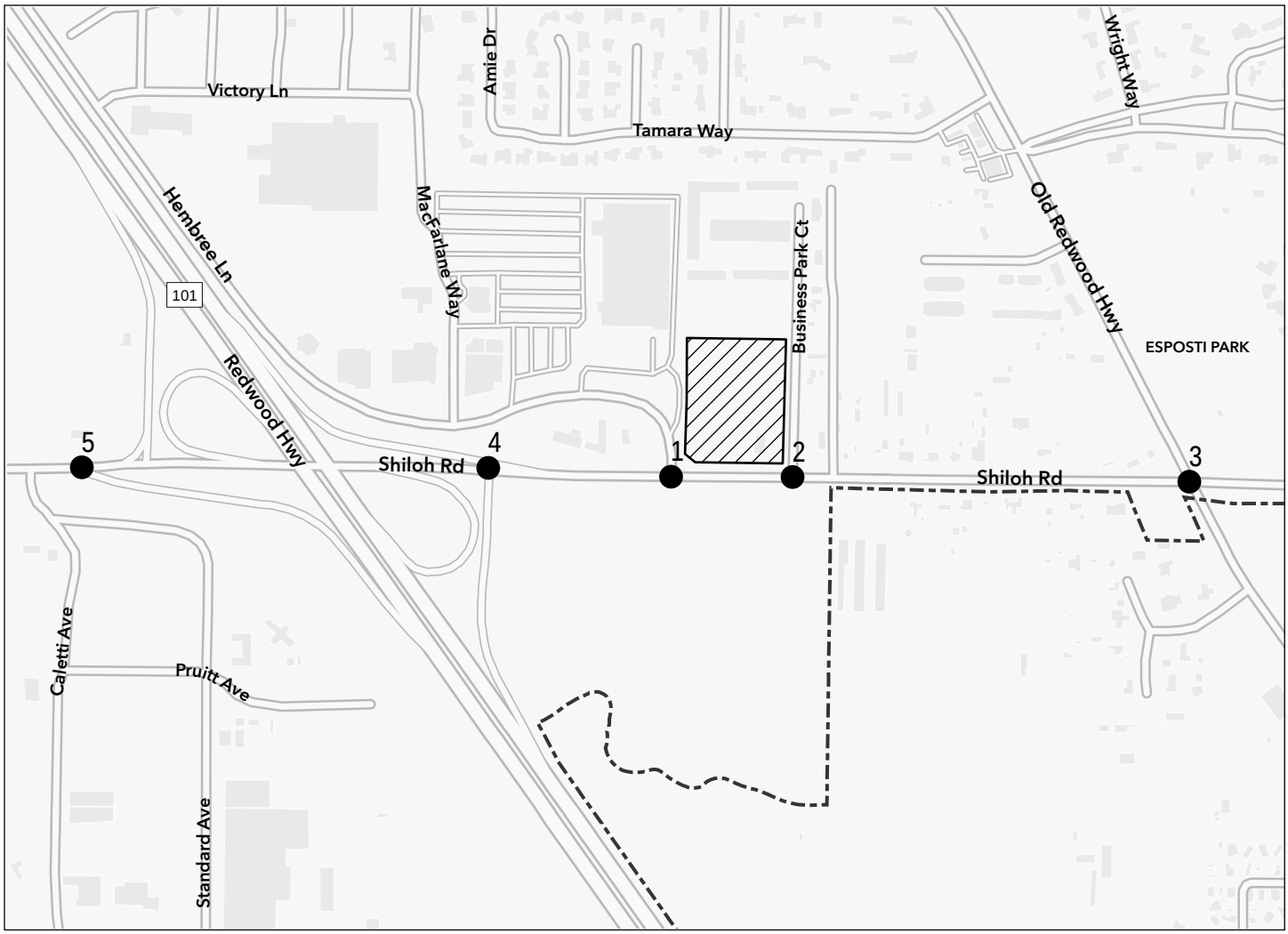
3.5.2 Project Trip Distribution & Assignment

The anticipated distribution of Project trips is shown on Table 3.5, based on the anticipated origin and destination pattern derived from existing travel characteristics in the area. Based on that distribution the anticipated volume of added traffic at each study intersection is shown on Figure 3.3B. Figure 3.4 presents the Existing Plus Project peak hour traffic volumes, including the net effect of pass-by trips as shown on Figure 3.3A as well as the Project trips shown on Figure 3.3B.

Table 3.5 Project Trip Distribution

To/From	Percent
US 101 – South of Shiloh Road	35%
West of US 101 (via Shiloh Road)	10%
US 101 – North of Shiloh Road	5%
Hembree Lane – north of Shiloh Road	10%
Old Redwood Highway – north of Shiloh Road	17%
Old Redwood Highway – south of Shiloh Road	20%
Total	**100%**





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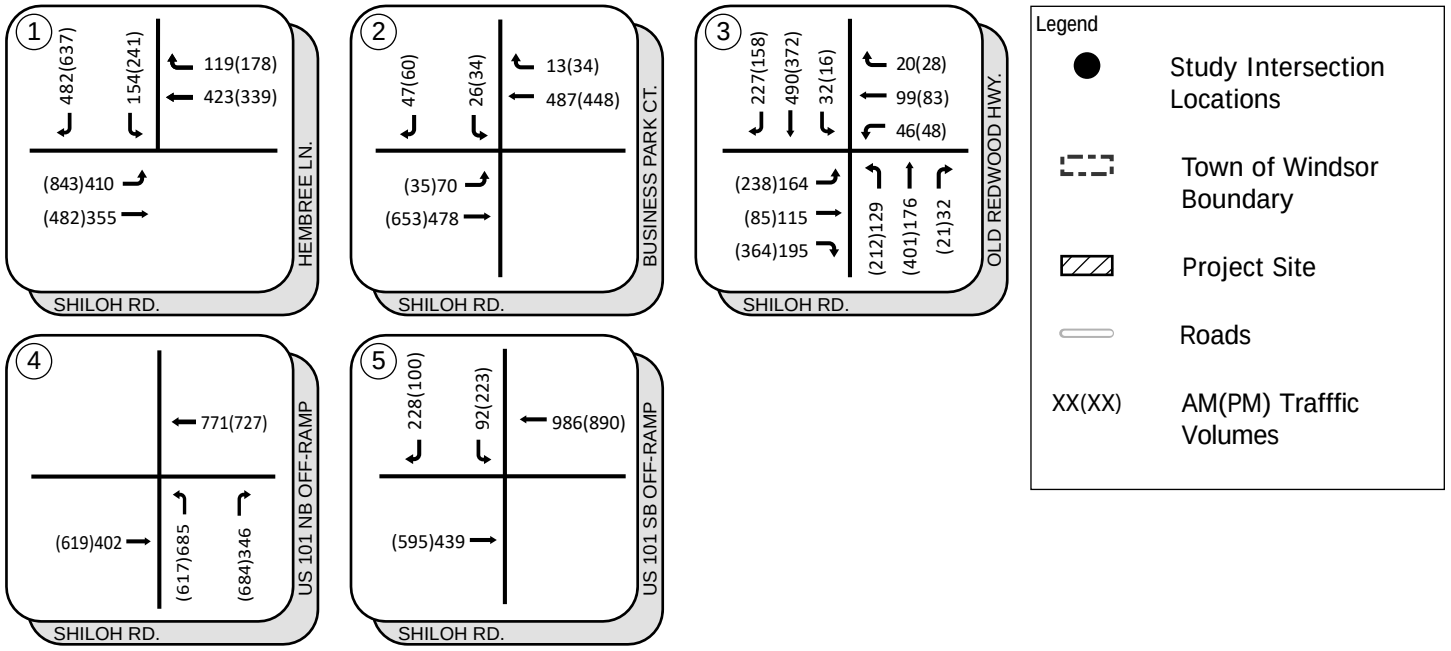
PROJECT TRIP ASSIGNMENT (EXISTING PLUS PROJECT CONDITIONS)

Project No. 1256511
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FIGURE 3.3B

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SHILOH CROSSING
TRAFFIC IMPACT STUDY

EXISTING PLUS PROJECT
PEAK HOUR TRAFFIC VOLUMES

Project No. 1256511
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FIGURE 3.4

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3.5.3 Existing plus Project LOS

The analysis of Existing plus Project conditions is based on the net effect of Project trips at each study intersection. In addition, the following proposed physical changes relevant to the intersections of Shiloh Road with Hembree Lane (study intersection #1) and Business Park Court (study intersection #2) were evaluated under this scenario:

- **Proposed changes to westbound through/right-turn lane on Shiloh Road approaching Hembree Lane:** under existing conditions, this second westbound lane begins approximately 130 feet west of Hembree Lane. As shown on the Project plans: with the proposed Project this westbound lane is proposed to be converted to a right-turn lane and extended approximately 270 feet east to begin at Business Park Court, thus extending along the entire block bordering the Project site.
- **Proposed eastbound left-turn pocket on Shiloh Road approaching Business Park Court.** Based on the Project site plan, the proposed left-turn pocket would be approximately 120 feet in length.

The project site plan also accommodates provision of a future westbound left-turn pocket on Shiloh Road approaching Hembree Lane that would provide access to the property on the south side of Shiloh Road at such time as that property is developed. The future westbound left-turn pocket was not included in the evaluation of Existing plus Project conditions, since this scenario is based on no changes to adjacent properties.

Table 3.6 presents a summary of the LOS and average delay (seconds/vehicle) at each study intersection under Existing plus Project Conditions:

- LOS would remain unchanged at each study intersection under Existing plus Project conditions.
- Average delay at each of the signalized intersections would increase by less than four seconds
- Each intersection would continue to operate at an acceptable LOS based on the adopted Town of Windsor LOS standard.

Table 3.6 Existing Plus Project Conditions Intersection LOS

#	Intersection	Control Type[1]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay[2]	LOS	Delay[2]	LOS
1	Hembree Lane & Shiloh Road	Signal	D	13.4	B	19.2	B
2	Business Park Court & Shiloh Road	SSSC	D	18.8	C	26.4	C
3	Old Redwood Highway & Shiloh Road	Signal	D	26.7	C	30.6	C
4	US 101 NB Off-ramp & Shiloh Road	Signal	D	45.7	D	21.8	C
5	US 1 01 SB Off-ramp & Shiloh Road	Signal	D	23.1	C	11.2	B

Notes:
1. SSSC = Side Street Stop Control
   Average vehicle delay in seconds.

3.6 Cumulative Conditions

Cumulative conditions refer to the analysis scenario which reflects future conditions represented by local and regional growth.

3.6.1 Cumulative No Project LOS

Cumulative No Project volumes represent conditions without the addition of project trips. Planned lane future lane configurations at each intersection under Cumulative No Project Conditions are based on planned improvements under the Windsor General Plan and are shown on Figure 3.5, including provision of a westbound left-turn pocket on Shiloh Road approaching Hembree Lane that would provide access to the planned southern leg of Hembree Lane. In addition, Shiloh Road is anticipated to be widened to two lanes in each direction. The Cumulative No Project volumes during the AM and PM peak hour were derived from Year 2040 traffic forecasts provided by the Sonoma County Transportation Agency (SCTA) gravity demand model[3].

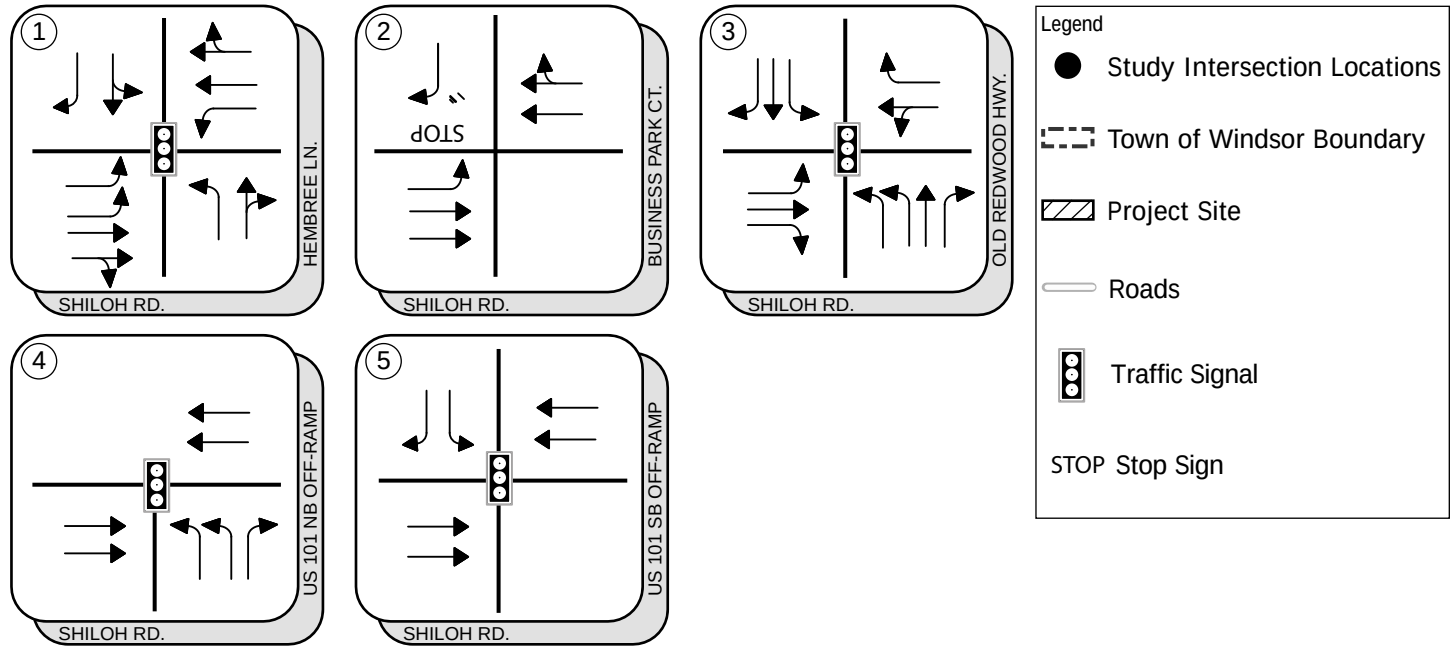
Table 3.7 presents a summary of the LOS and delay (in sec/veh) at each study intersection during the Cumulative No Project conditions. As shown, each intersection is forecasted to operate acceptably at LOS D or better during the AM and PM peak hours.

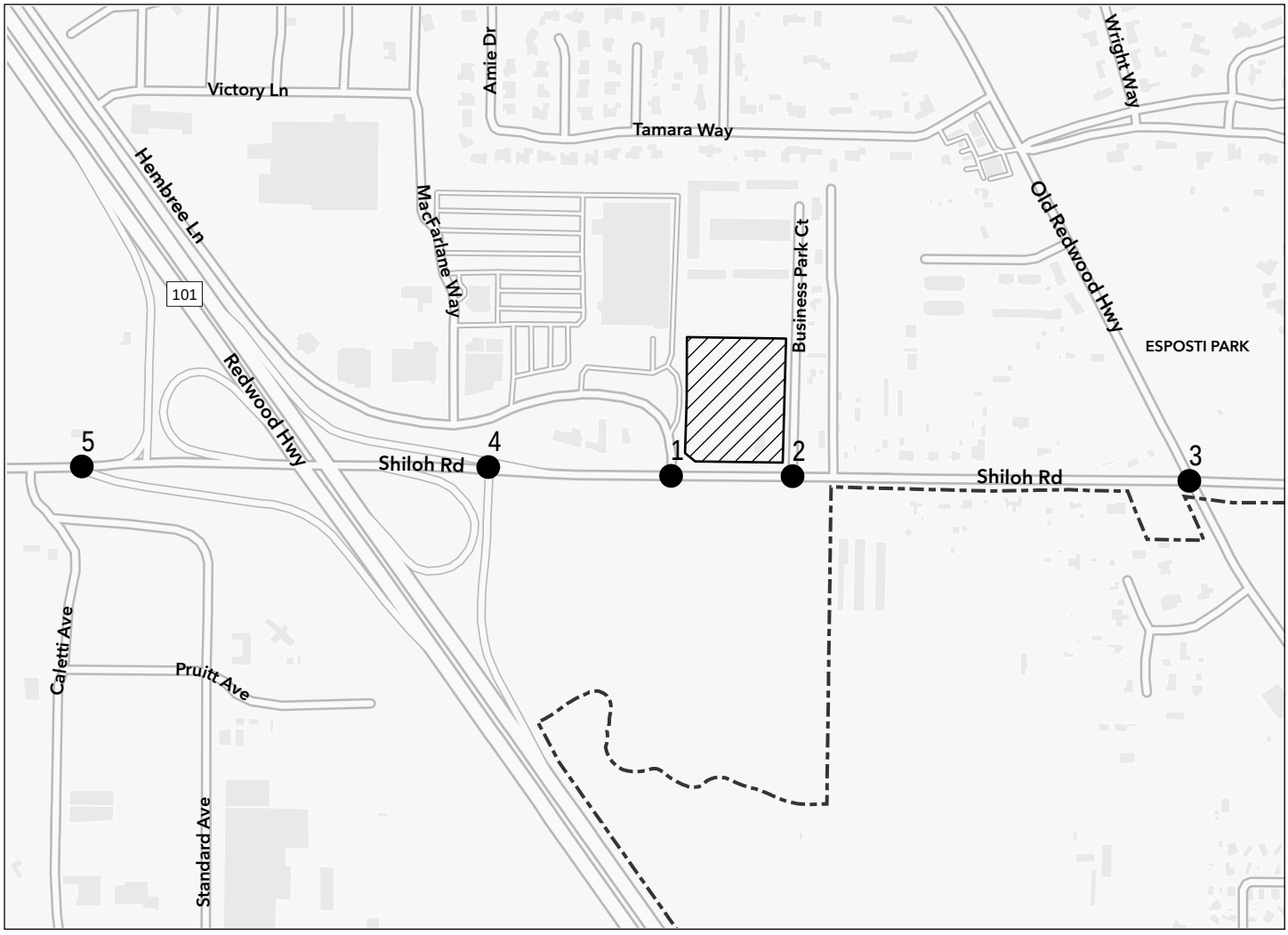
Table 3.7 Cumulative No Project Conditions Intersection LOS

#	Intersection	Control Type[1]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay[2]	LOS	Delay[2]	LOS
1	Hembree Lane & Shiloh Road	Signal	D	25.1	C	41.6	D
2	Business Park Court & Shiloh Road	SSSC	D	11.4	A	11.9	B
3	Old Redwood Highway & Shiloh Road	Signal	D	22.3	C	28.7	C
4	US 101 NB Off-ramp & Shiloh Road	Signal	D	13.8	B	36.5	D
5	US 1 01 SB Off-ramp & Shiloh Road	Signal	D	8.3	A	8.6	A

Notes:
1. SSSC = Side Street Stop Control
2. Average vehicle delay in seconds.

[3] W-Trans, *Shiloh Terrace Project Traffic Impact Study*, August 19, 2021





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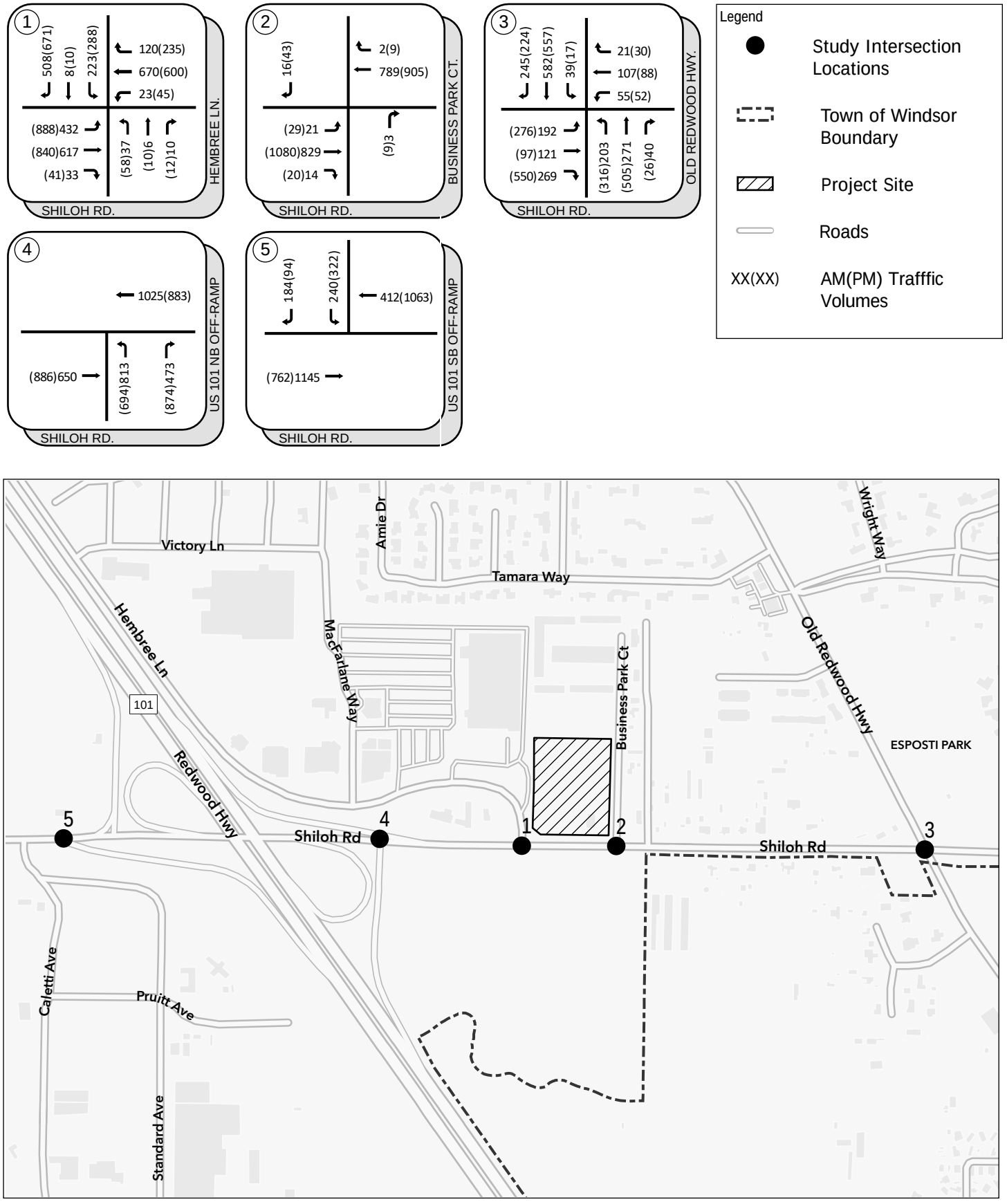
FUTURE LANE CONFIGURATIONS (CUMULATIVE NO PROJECT CONDITIONS)

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Revision No. -
Date NOVEMBER 2021

FIGURE 3.5

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SHILOH CROSSING
TRAFFIC IMPACT STUDY

CUMULATIVE NO PROJECT
PEAK HOUR
TRAFFIC VOLUMES

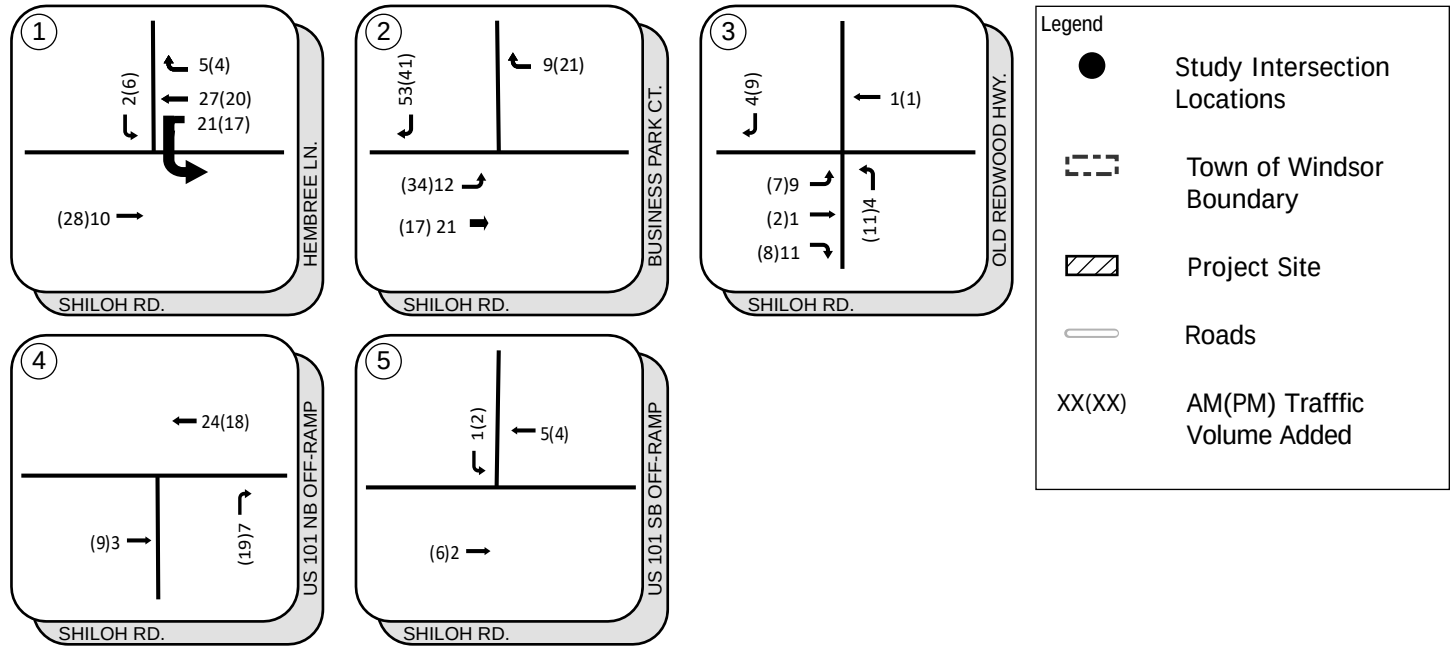
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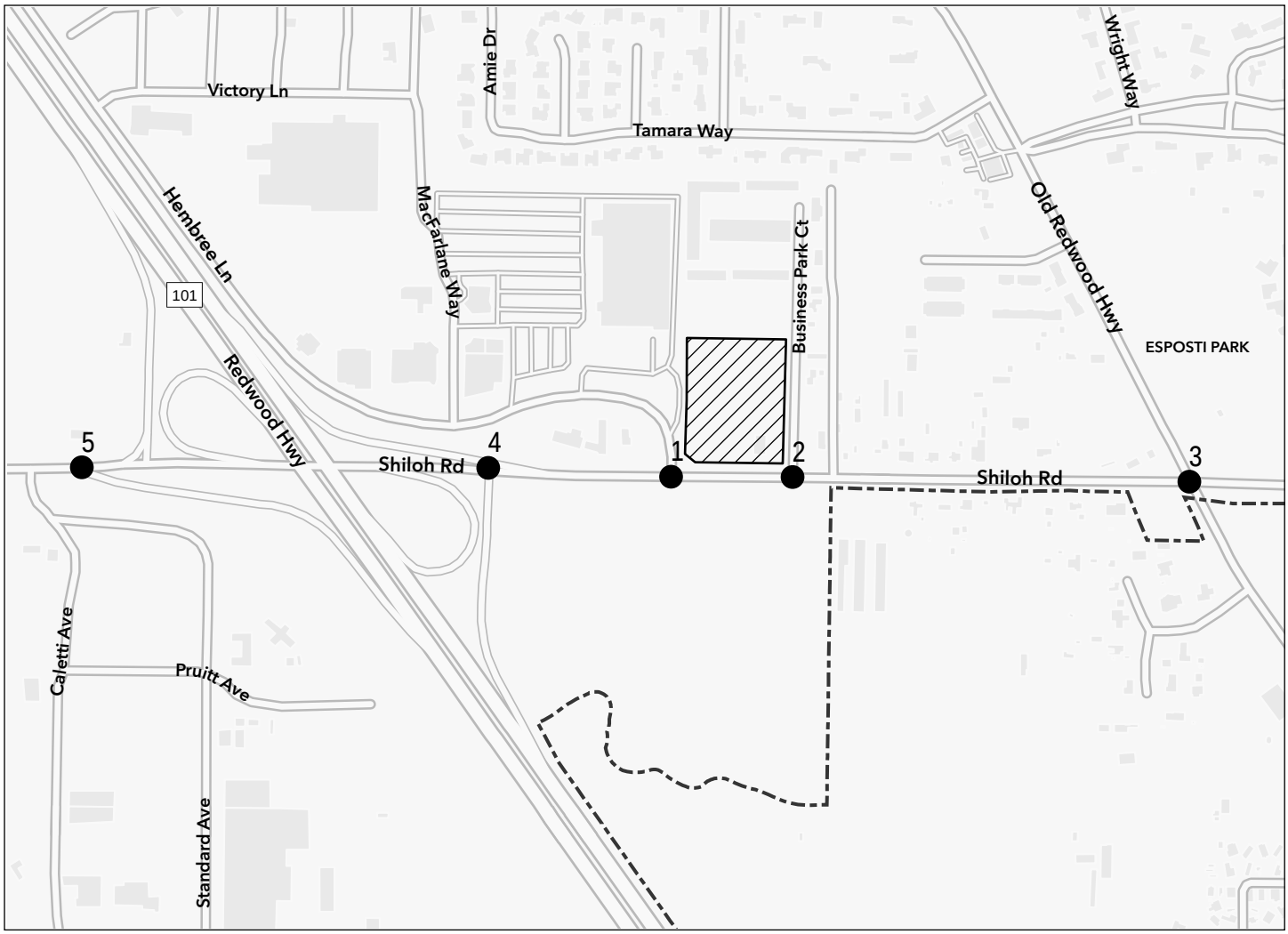
FIGURE 3.6

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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FIRST CARBON SOLUTIONS SHILOH CROSSING
TRAFFIC IMPACT STUDY

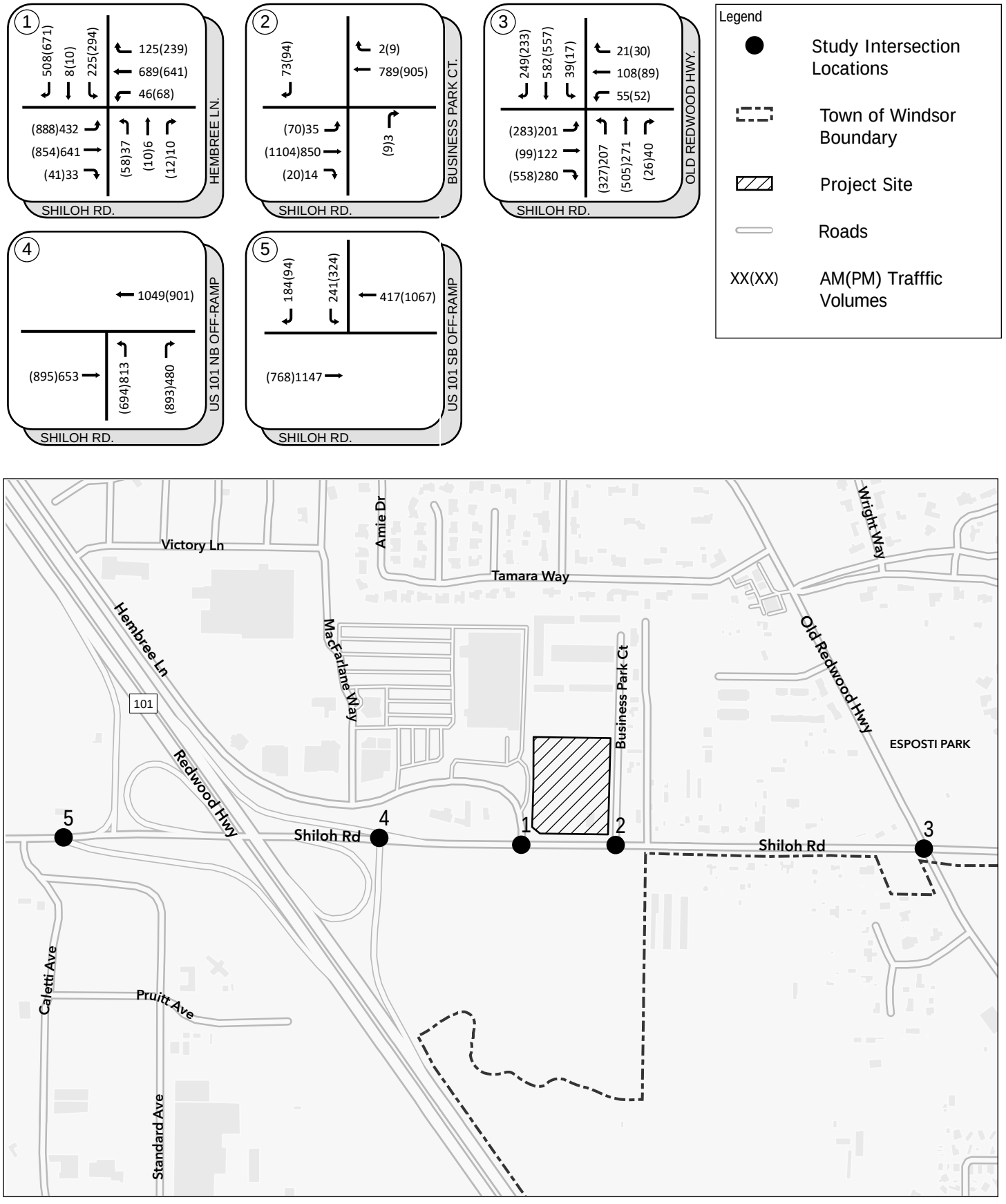
PROJECT TRIP ASSIGNMENT (CUMULATIVE CONDITIONS)

Project No. 1256511
Revision No. -
Date APRIL 2022

FIGURE 3.7

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Print date: 15 Nov 2021 - 09:11

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Created by: pthornton



Paper Size ANSI A

0 300 600

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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FIRST CARBON SOLUTIONS
SHILOH CROSSING
TRAFFIC IMPACT STUDY

CUMULATIVE **PLUS** PROJECT PEAK HOUR TRAFFIC VOLUMES

Project No. 1256511
Revision No. -
Date **APRIL** 2022

FIGURE 3.8

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Created by: pthornton

3.6.2 Cumulative Plus Project LOS

The analysis of Cumulative plus Project conditions is based on the net effect of Project trips at each study intersection. Project trip assignment under Cumulative No Project conditions is shown on Figure 3.7, reflecting the prohibition of southbound left-turn movements from Business Park Court to Shiloh Road under Cumulative conditions. Motorists leaving the Project site to travel east on Shiloh Road would instead make a right-turn from Business Park on to Shiloh Road, and then make a U-turn at Hembree Lane to travel east on Shiloh Road. Similarly, westbound pass-by trips would exit in the same manner.

In addition, the following proposed physical changes relevant to the intersections of Shiloh Road with Hembree Lane (study intersection #1) and Business Park Court (study intersection #2) were evaluated under this scenario:

- **Proposed changes to westbound through/right-turn lane on Shiloh Road approaching Hembree Lane:** as shown on the Project plans, with the proposed Project the second westbound lane is proposed to be converted from a shared through/right-turn lane to a right-turn only lane.
- **Proposed eastbound left-turn pocket on Shiloh Road approaching Business Park Court.** Based on the Project site plan, the proposed left-turn pocket would be approximately 120 feet in length.

Table 3.8 presents a summary of the LOS and delay (in sec/veh) at each study intersection under Cumulative Plus Project conditions:

- LOS at each intersection would remain unchanged with the Project.
- Each intersection would continue to an acceptable LOS during both the AM and PM peak hours.

Table 3.8 Cumulative Plus Project Conditions Intersection LOS

#	Intersection	Control Type[1]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay[2]	LOS	Delay[2]	LOS
1	Hembree Lane & Shiloh Road	Signal	D	33.8	C	49.5	D
2	Business Park Court & Shiloh Road	SSSC	D	12.2	B	12.9	B
3	Old Redwood Highway & Shiloh Road	Signal	D	22.7	C	29.6	C
4	US 101 NB Off-ramp & Shiloh Road	Signal	D	14.2	B	40.0	D
5	US 1 01 SB Off-ramp & Shiloh Road	Signal	D	8.4	A	8.6	A

Notes:
1. SSSC = Side Street Stop Control
2. Average vehicle delay in seconds.

3.7 Left-turn Queue Analysis

The project would fail to meet the Town standard concerning left-turn queues if:

a) The 95th percentile queue length can be contained within the available stacking length without the project, and the project causes the queue to exceed the stacking length; or

b) The queue length exceeds the available stacking length without the project and the project increases he 95th percentile queue by more than 10 feet, or approximately one-half a car-length.

Based on those guidelines identified in those previous studies: the project would conflict with Town standards if the project causes the 95th percentile queue to exceed the stacking length; or if the 95th percentile queue length exceeds the available stacking length without the project and the project increases the 95th percentile queue by more than 10 feet, or approximately half of a car-length.

Table 3.9 shows the left-turn queue analysis under Existing plus Project Conditions. As shown, the 95th percentile queue for the northbound left-turn pocket during the PM Peak Hour at the intersection of Old Redwood Highway and Shiloh Road exceeds the storage capacity, and the 95th percentile queue would increase by 20 feet with the addition of Project trips. The increase in the 95th percentile queue length could be alleviated by modifying the signal timing plan to increase the maximum green time allocated to the northbound left-turn by four seconds during the PM Peak Hour, which would reduce the 95th percentile queue length by 27 feet, while LOS during the PM Peak Hour would remain acceptable at LOS C with 30.1 seconds of average delay with that modification to signal timing.

Table 3.9 Left-turn Queue Analysis (Existing & Existing plus Project Conditions)

#	Intersection	Left-turn Pocket Approach	Available Storage (feet)	95th Percentile Left-turn Queue (feet)			
				AM Peak Hour		PM Peak Hour	
				Existing	Existing plus Project	Existing	Existing plus Project
2	Business Park Court & Shiloh Road	Eastbound	120 (proposed)	N/A	2	N/A	18
3	Old Redwood Highway & Shiloh Road	Eastbound	375	192	202	266	273
		Northbound	200	173	180	**350**	**370** [1]
		Southbound	130	61	61	38	38

Notes: **Bold** indicates left-turn queue exceeds storage length.

1. The increase in the 95th percentile queue length could be alleviated by increasing the maximum green time allocated to the northbound left-turn during the PM Peak Hour by 4 seconds would reduce the 95th percentile to 343 feet under Existing Plus Project conditions, while LOS would remain acceptable at LOS C with 30.1 seconds of average delay.

Table 3.10 shows the left-turn queue analysis under Cumulative plus Project Conditions based on the current eastbound lane dimensions on Shiloh Road approaching Old Redwood Highway, which includes a single through lane, a 135-foot right-turn pocket and a 375-foot left-turn pocket. As shown, the 95th percentile queue for the eastbound left-turn pocket at the intersection of Old Redwood Highway and Shiloh Road during the PM Peak Hour is anticipated to exceed the storage capacity without the project, and would increase by 15 feet with the addition of Project trips. Under Cumulative No Project conditions, the upstream lane configuration on Shiloh Road is planned to be widened from one to two through lanes eastbound, consistent with the Windsor General Plan. The added eastbound lane on Shiloh Road could be designed to directly feed the eastbound left-turn lane, which would provide adequate capacity to accommodate the anticipated queue lengths under both Cumulative No Project and Cumulative Plus Project conditions. Alternatively, as noted in the *Shiloh Terrace Project Traffic Impact Study* (W-Trans, August 19, 2021), the Old Redwood Highway/Shiloh Road may be reconstructed as a roundabout in the future, which would eliminate the left-turn pocket.

Table 3.10 Left-turn Queue Analysis (Cumulative Conditions)

#	Intersection	Left-turn Pocket Approach	Available Storage (feet)	95th Percentile Left-turn Queue (feet)			
				AM Peak Hour		PM Peak Hour	
				Cumulative No Project	Cumulative plus Project	Cumulative No Project	Cumulative plus Project
1	Hembree Lane & Shiloh Road	Westbound	160 (planned)	160	102	112	159
		Northbound	200 (planned)	66	66	91	47
2	Business Park Court & Shiloh Road	Eastbound	120 (proposed)	NA	2	NA	6
3	Old Redwood Highway & Shiloh Road	Eastbound	375	278	298	**481**	**496**
		Westbound	120 (planned)	75	73	74	75
		Northbound	200	128	131	186	192
		Southbound	130	73	73	41	41

Notes: **Bold** indicates left-turn queue fails to meet standard.

Appendices

Appendix A
Fire Turning Exhibits

BUSINESS PARK CIRCLE

38'

NORTH BUILDING

NORTH BUILDING

NORTH BUILDING

SOUTH BUILDING

SOUTH BUILDING

27'

27'

27'

27'

37.5'

20' MIN. TYP.

28' RADIUS, TYP

20' MIN. TYP.

HD DEVELOPMENT OF MARYLAND INC. DN 2003 193587

SHEET NUMBER, TYP

2

7

6

3

4

5

HEMBREE LANE

SHILOH ROAD

KEY MAP

FIRE TRUCK TURNING EXHIBITS

SHILOH CROSSING

WINDSOR, CALIFORNIA

April 7, 2022

PROJECT No. 2021017.00

SHEET 1 OF 7

NORTH

1" = 60'

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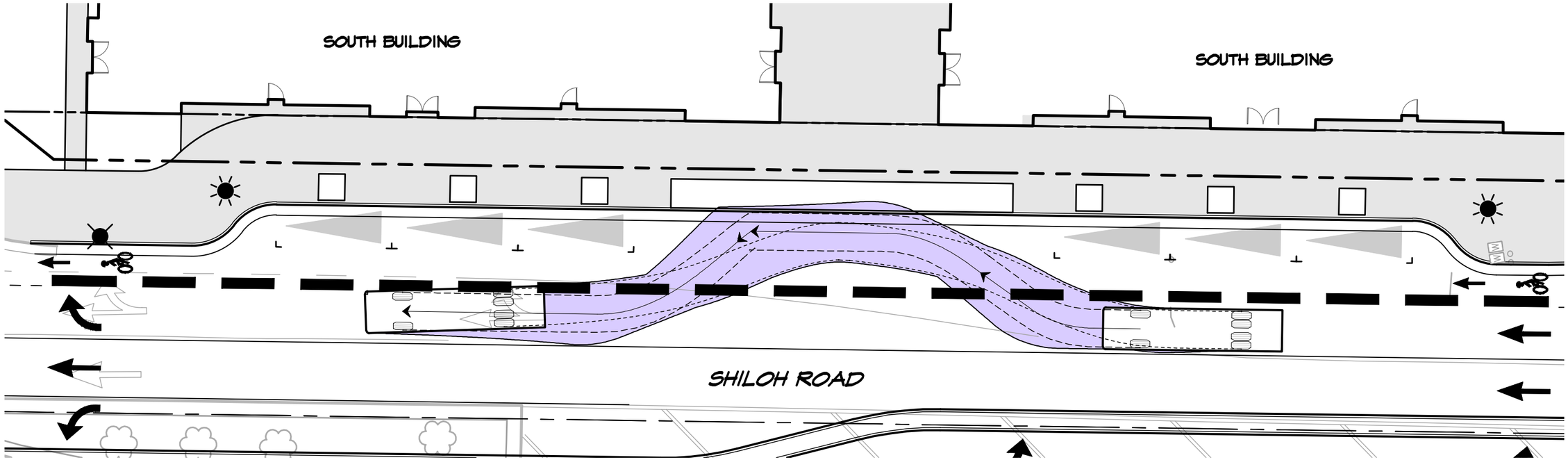
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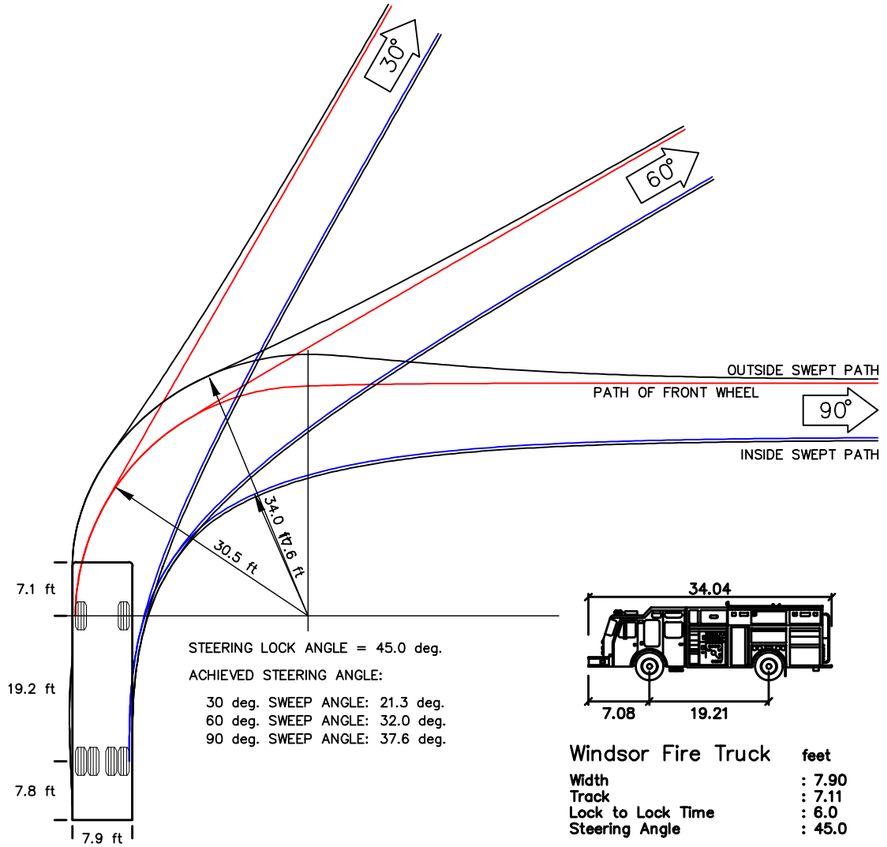
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STEERING LOCK ANGLE = 45.0 deg.

ACHIEVED STEERING ANGLE:

30 deg. SWEEP ANGLE: 21.3 deg.
60 deg. SWEEP ANGLE: 32.0 deg.
90 deg. SWEEP ANGLE: 37.6 deg.

Windsor Fire Truck	feet
Width	: 7.90
Track	: 7.11
Lock to Lock Time	: 6.0
Steering Angle	: 45.0



1" = 20'

FIRE TRUCK TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

April 7, 2022

PROJECT No. 2021017.00

SHEET 2 OF 7

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SOUTH BUILDING

SHILOH ROAD

EVA GATE

HEMBREE LANE

SURMOUNTABLE CURB, TYP

NORTH

1" = 20'

FIRE TRUCK TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

April 7, 2022

PROJECT No. 2021017.00

SHEET 3 OF 7

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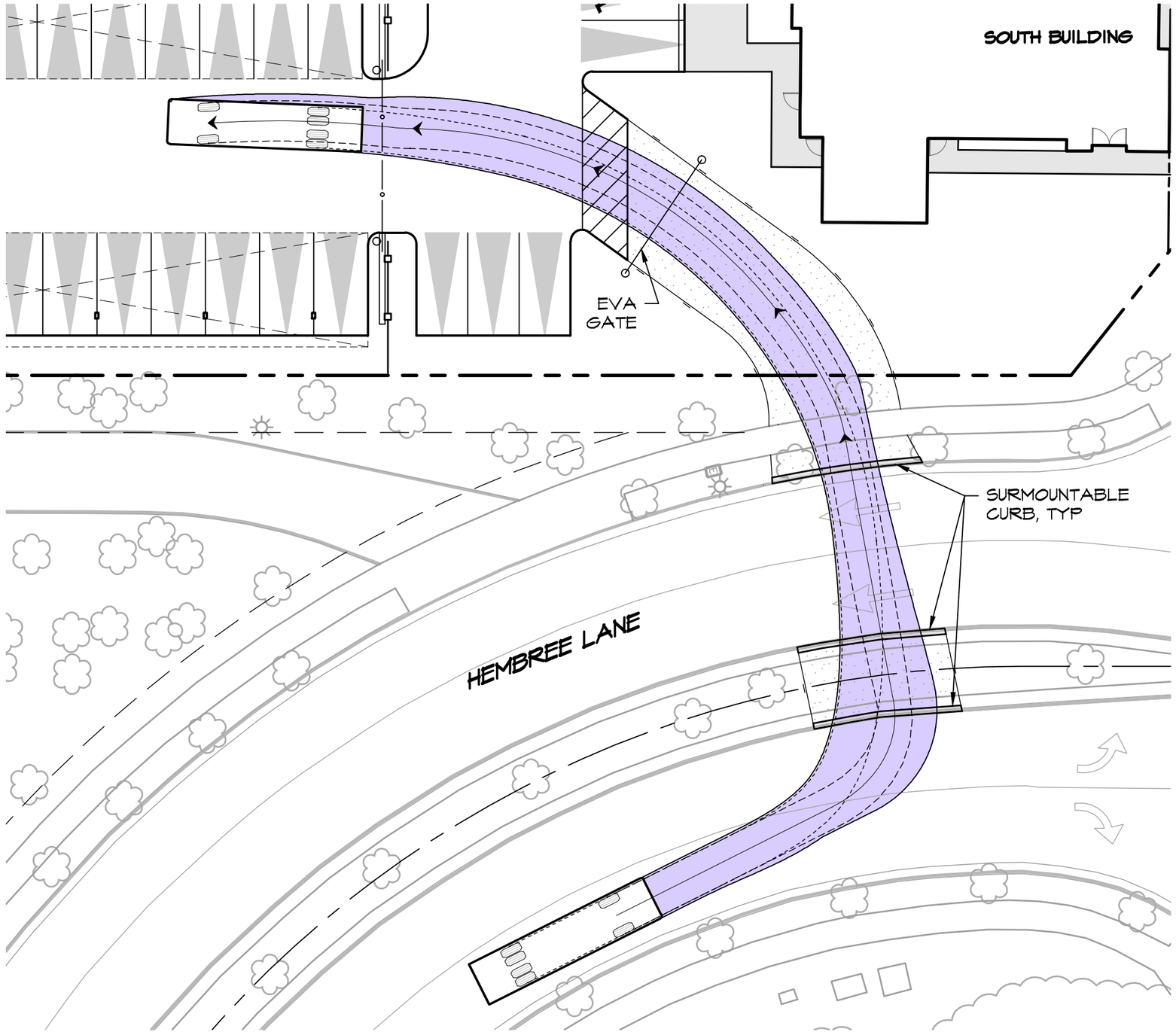
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NORTH

1" = 20'

FIRE TRUCK TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

April 7, 2022

PROJECT No. 2021017.00

SHEET 4 OF 7

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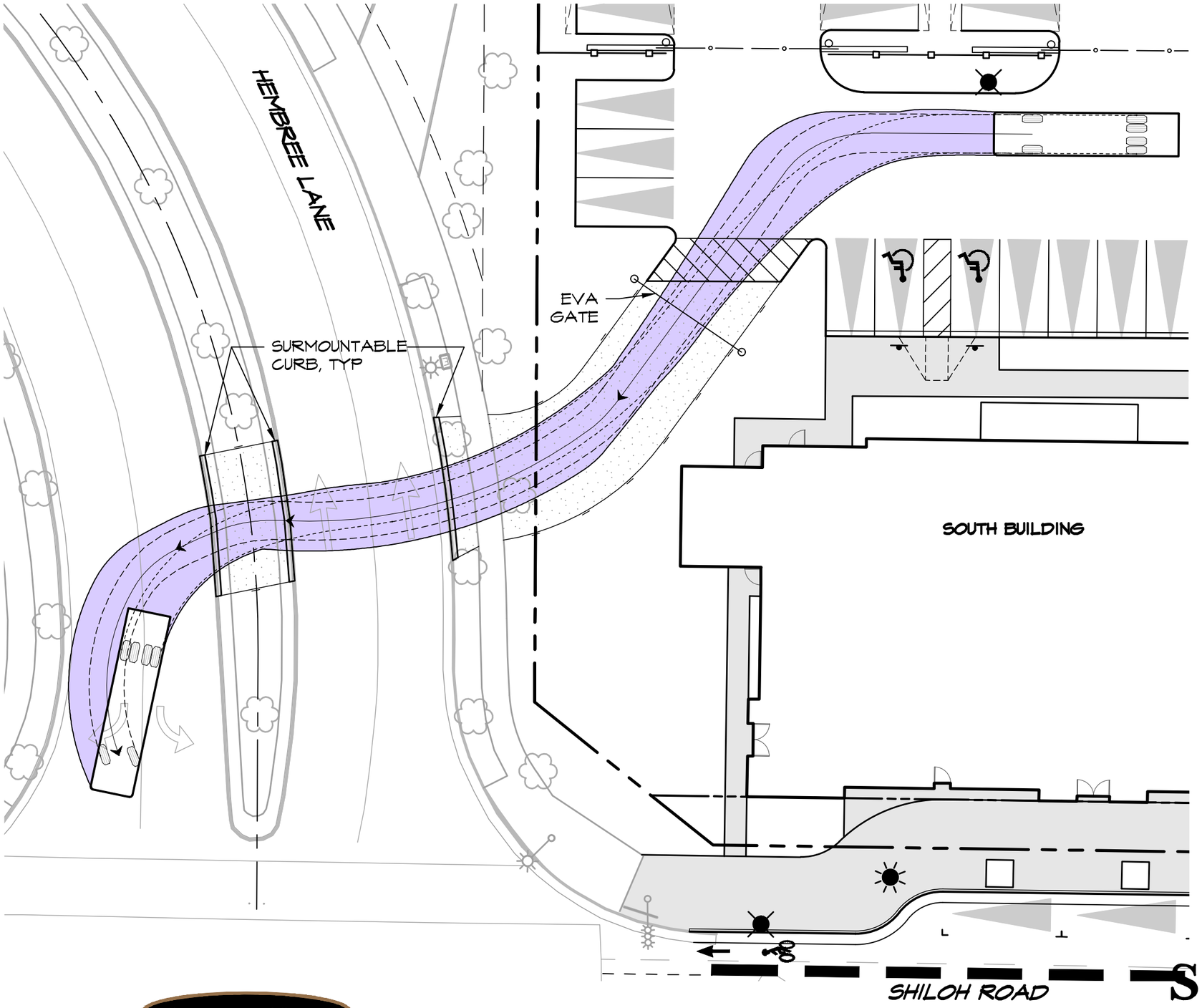
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NORTH

1" = 20'

FIRE TRUCK TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

April 7, 2022

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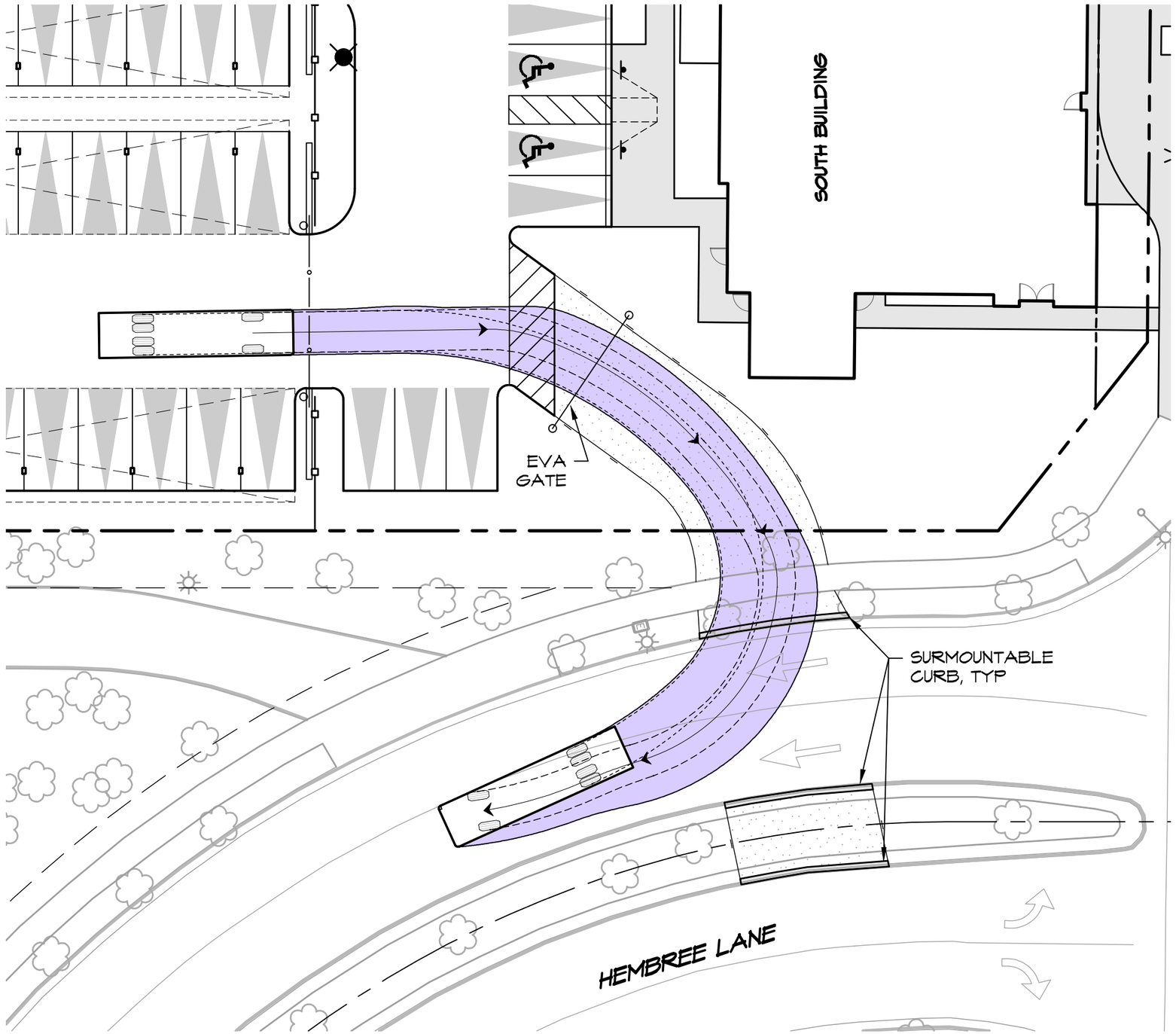
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NORTH

1" = 20'

FIRE TRUCK TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

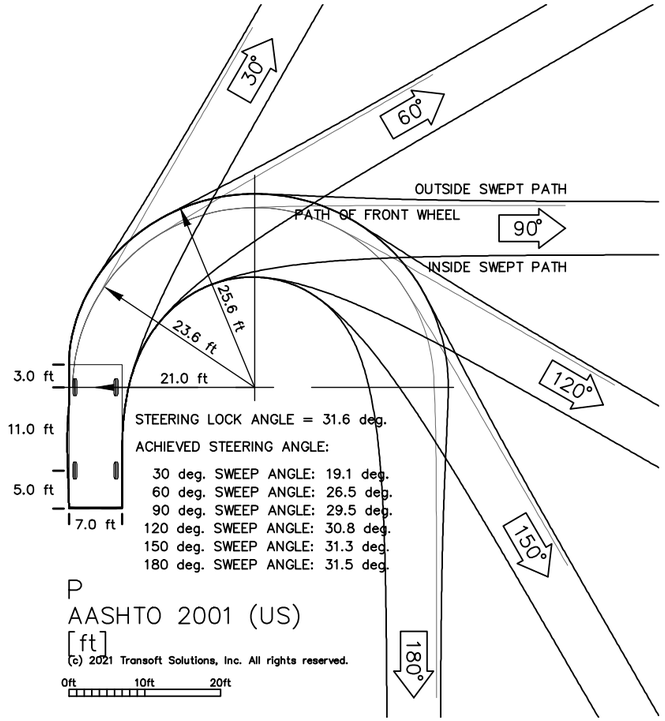
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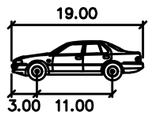
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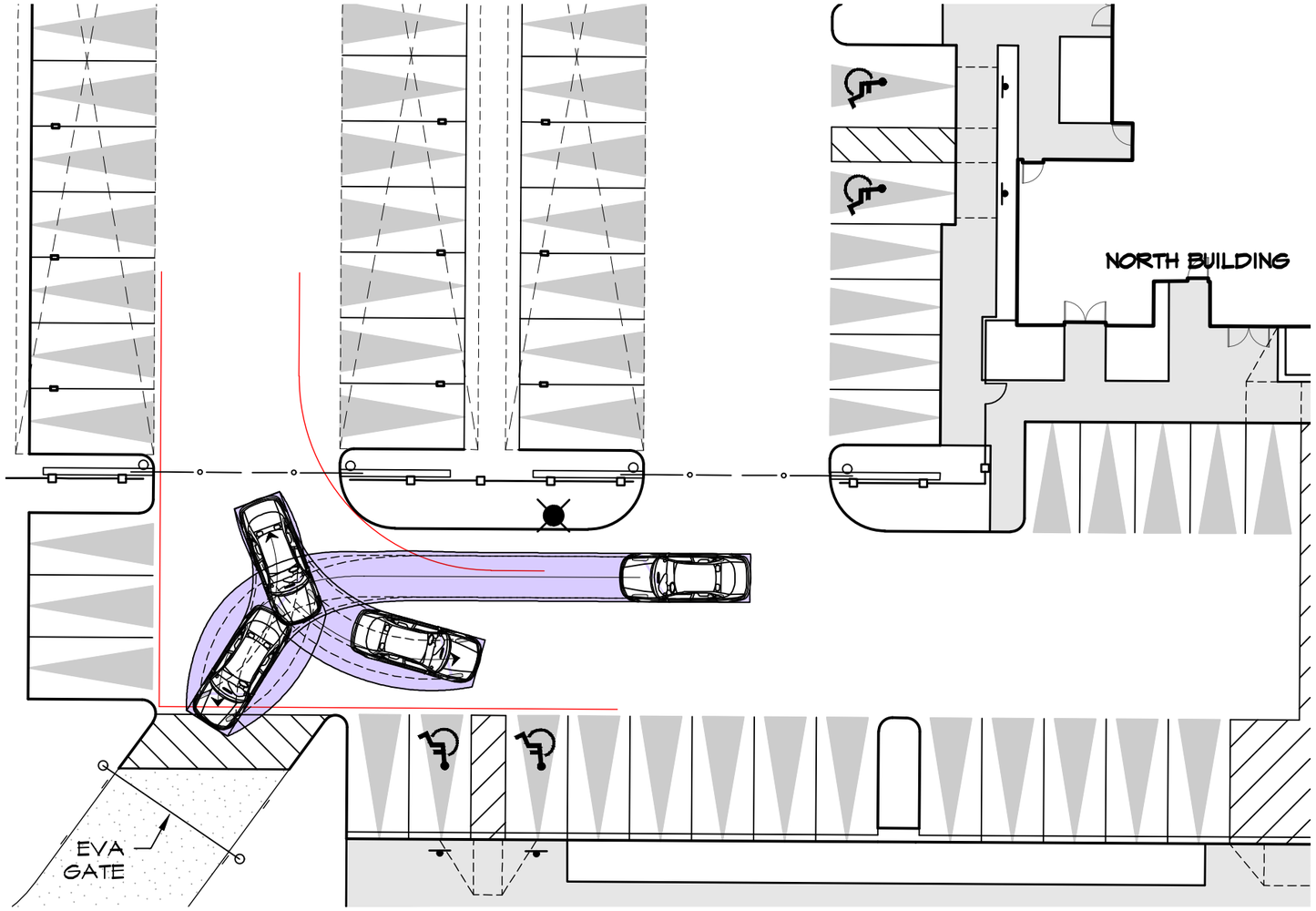




P

	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

MODEL



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NORTH

1" = 20'

PASSENGER CAR TURNING MODEL

SHILOH CROSSING

WINDSOR, CALIFORNIA

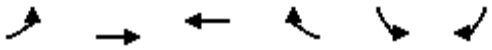
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SHEET 7 OF 7

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Appendix B
Intersection Level of Service Calculations & Left-turn Queue Reports



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	410	345	396	114	152	482
Future Volume (veh/h)	410	345	396	114	152	482
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	446	375	430	124	165	524
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	623	908	620	177	555	780
Arrive On Green	0.18	0.49	0.23	0.23	0.31	0.31
Sat Flow, veh/h	3456	1870	2805	774	1781	1585
Grp Volume(v), veh/h	446	375	280	274	165	524
Grp Sat Flow(s),veh/h/ln	1728	1870	1777	1709	1781	1585
Q Serve(g_s), s	4.7	5.0	5.6	5.7	2.7	9.8
Cycle Q Clear(g_c), s	4.7	5.0	5.6	5.7	2.7	9.8
Prop In Lane	1.00			0.45	1.00	1.00
Lane Grp Cap(c), veh/h	623	908	406	391	555	780
V/C Ratio(X)	0.72	0.41	0.69	0.70	0.30	0.67
Avail Cap(c_a), veh/h	2924	3420	1608	1547	1498	1619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	6.5	13.8	13.8	10.2	7.5
Incr Delay (d2), s/veh	0.6	0.1	0.8	0.9	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.1	1.8	1.7	0.8	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	6.6	14.6	14.7	10.3	7.9
LnGrp LOS	B	A	B	B	B	A
Approach Vol, veh/h		821	554		689	
Approach Delay, s/veh		11.5	14.6		8.5	
Approach LOS		B	B		A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.6		15.4	10.0	13.6
Change Period (Y+Rc), s		* 4.7		* 3.2	3.0	* 4.7
Max Green Setting (Gmax), s		* 71		* 33	33.0	* 35
Max Q Clear Time (g_c+I1), s		7.0		11.8	6.7	7.7
Green Ext Time (p_c), s		0.7		0.4	0.3	1.0

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

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

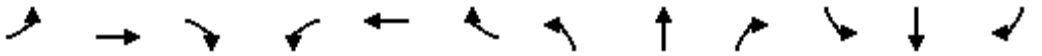
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	480	452	2	3	13
Future Vol, veh/h	21	480	452	2	3	13
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	533	502	2	3	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	506	0	-	0	1084	505
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1059	-	-	-	240	567
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	560	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1057	-	-	-	232	566
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	586	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1057	-	-	-	446
HCM Lane V/C Ratio	0.022	-	-	-	0.04
HCM Control Delay (s)	8.5	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	114	184	46	98	20	125	176	32	32	490	223
Future Volume (veh/h)	155	114	184	46	98	20	125	176	32	32	490	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
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	168	124	200	50	107	22	136	191	35	35	533	242
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	331	274	86	184	230	175	765	635	50	634	524
Arrive On Green	0.18	0.18	0.18	0.15	0.15	0.15	0.10	0.41	0.41	0.03	0.34	0.34
Sat Flow, veh/h	1781	1870	1550	586	1255	1574	1781	1870	1552	1781	1870	1545
Grp Volume(v), veh/h	168	124	200	157	0	22	136	191	35	35	533	242
Grp Sat Flow(s),veh/h/ln	1781	1870	1550	1841	0	1574	1781	1870	1552	1781	1870	1545
Q Serve(g_s), s	5.9	4.1	8.5	5.5	0.0	0.8	5.2	4.7	0.9	1.4	18.3	8.5
Cycle Q Clear(g_c), s	5.9	4.1	8.5	5.5	0.0	0.8	5.2	4.7	0.9	1.4	18.3	8.5
Prop In Lane	1.00		1.00	0.32		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	331	274	269	0	230	175	765	635	50	634	524
V/C Ratio(X)	0.53	0.37	0.73	0.58	0.00	0.10	0.78	0.25	0.06	0.69	0.84	0.46
Avail Cap(c_a), veh/h	971	1019	845	1003	0	858	411	857	711	411	857	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	25.2	27.0	27.6	0.0	25.6	30.5	13.5	12.4	33.4	21.2	18.0
Incr Delay (d2), s/veh	1.4	0.7	3.7	2.0	0.0	0.2	7.1	0.2	0.0	15.8	5.6	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	2.5	1.7	3.2	2.4	0.0	0.3	2.4	1.7	0.3	0.8	8.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.4	25.9	30.7	29.6	0.0	25.8	37.7	13.6	12.4	49.2	26.8	18.6
LnGrp LOS	C	C	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		492			179			362			810	
Approach Delay, s/veh		28.3			29.2			22.6			25.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.5	10.8	27.7		14.4	6.0	32.6				
Change Period (Y+Rc), s		* 4.2	4.0	* 4.2		4.2	4.0	* 4.2				
Max Green Setting (Gmax), s		* 38	16.0	* 32		37.8	16.0	* 32				
Max Q Clear Time (g_c+I1), s		10.5	7.2	20.3		7.5	3.4	6.7				
Green Ext Time (p_c), s		1.8	0.2	3.2		0.9	0.0	1.1				

Intersection Summary												
HCM 6th Ctrl Delay			26.0									
HCM 6th LOS			C									

Notes

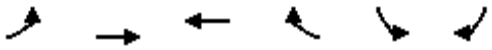
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	399	0	0	747	685	339
Future Volume (veh/h)	399	0	0	747	685	339
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	443	0	0	830	761	377
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1523	0	0	802	763	1196
Arrive On Green	0.43	0.00	0.00	0.43	0.43	0.43
Sat Flow, veh/h	3741	0	0	1870	1781	2790
Grp Volume(v), veh/h	443	0	0	830	761	377
Grp Sat Flow(s),veh/h/ln	1777	0	0	1870	1781	1395
Q Serve(g_s), s	5.7	0.0	0.0	30.0	29.8	6.3
Cycle Q Clear(g_c), s	5.7	0.0	0.0	30.0	29.8	6.3
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1523	0	0	802	763	1196
V/C Ratio(X)	0.29	0.00	0.00	1.04	1.00	0.32
Avail Cap(c_a), veh/h	1523	0	0	802	763	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	0.0	20.0	20.0	13.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	41.3	31.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	20.1	17.0	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.2	0.0	0.0	61.3	51.7	13.4
LnGrp LOS	B	A	A	F	D	B
Approach Vol, veh/h	443			830	1138	
Approach Delay, s/veh	13.2			61.3	39.0	
Approach LOS	B			E	D	

Timer - Assigned Phs		2		4			8
Phs Duration (G+Y+Rc), s		35.0		35.0			35.0
Change Period (Y+Rc), s		5.0		5.0			5.0
Max Green Setting (Gmax), s		30.0		30.0			30.0
Max Q Clear Time (g_c+I1), s		31.8		7.7			32.0
Green Ext Time (p_c), s		0.0		2.7			0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Volume (veh/h)	0	437	981	0	91	228
Future Volume (veh/h)	0	437	981	0	91	228
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	480	1078	0	100	251
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1109	1109	0	373	331
Arrive On Green	0.00	0.59	0.59	0.00	0.21	0.21
Sat Flow, veh/h	0	1870	1870	0	1781	1585
Grp Volume(v), veh/h	0	480	1078	0	100	251
Grp Sat Flow(s),veh/h/ln	0	1870	1870	0	1781	1585
Q Serve(g_s), s	0.0	7.1	28.0	0.0	2.4	7.5
Cycle Q Clear(g_c), s	0.0	7.1	28.0	0.0	2.4	7.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1109	1109	0	373	331
V/C Ratio(X)	0.00	0.43	0.97	0.00	0.27	0.76
Avail Cap(c_a), veh/h	0	1109	1109	0	1057	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.6	9.9	0.0	16.8	18.8
Incr Delay (d2), s/veh	0.0	0.3	20.4	0.0	0.4	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	12.4	0.0	0.9	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.9	30.3	0.0	17.1	22.3
LnGrp LOS	A	A	C	A	B	C
Approach Vol, veh/h		480	1078		351	
Approach Delay, s/veh		5.9	30.3		20.9	
Approach LOS		A	C		C	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			35.0		15.6	35.0
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			9.1		9.5	30.0
Green Ext Time (p_c), s			2.8		1.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay		22.4
HCM 6th LOS		C

1: Shiloh Rd & Hembree Ln

5/5/2022



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	446	375	554	165	524
v/c Ratio	0.56	0.34	0.55	0.49	0.68
Control Delay	20.8	5.3	14.9	25.4	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	5.3	14.9	25.4	11.8
Queue Length 50th (ft)	45	35	53	34	40
Queue Length 95th (ft)	150	92	126	133	231
Internal Link Dist (ft)		297	320	1022	
Turn Bay Length (ft)	300				
Base Capacity (vph)	2544	1761	2663	1306	1362
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.21	0.21	0.13	0.38

Intersection Summary

3: Old Redwood Hwy & Shiloh Rd

5/5/2022



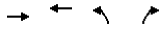
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	168	124	200	157	22	136	191	35	35	533	242
v/c Ratio	0.60	0.42	0.48	0.52	0.07	0.59	0.23	0.05	0.25	0.85	0.43
Control Delay	47.5	41.6	9.9	42.3	0.4	52.1	22.2	0.6	50.2	46.0	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	41.6	9.9	42.3	0.4	52.1	22.2	0.6	50.2	46.0	22.2
Queue Length 50th (ft)	89	64	0	84	0	72	68	0	19	272	69
Queue Length 95th (ft)	192	145	64	162	0	173	186	3	61	#713	203
Internal Link Dist (ft)		1259		694			846			700	
Turn Bay Length (ft)	375		135		50	200		95	130		85
Base Capacity (vph)	706	744	736	732	659	299	813	716	299	625	564
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.17	0.27	0.21	0.03	0.45	0.23	0.05	0.12	0.85	0.43

Intersection Summary

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

4: US 101 NB Off-ramp & Shiloh Rd

5/5/2022



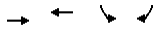
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	443	830	761	377
v/c Ratio	0.30	1.08	1.04	0.28
Control Delay	13.8	77.9	66.5	2.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.8	77.9	66.5	2.1
Queue Length 50th (ft)	63	~407	~362	0
Queue Length 95th (ft)	94	#612	#560	23
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)				265
Base Capacity (vph)	1466	771	733	1370
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	1.08	1.04	0.28

Intersection Summary

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

5: Shiloh Rd & US 101 SB Off-ramp

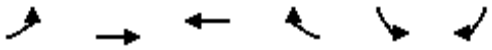
5/5/2022



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	480	1078	100	251
v/c Ratio	0.47	1.05	0.24	0.64
Control Delay	9.5	58.9	17.2	22.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.5	58.9	17.2	22.9
Queue Length 50th (ft)	76	~381	25	59
Queue Length 95th (ft)	176	#680	55	118
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	1027	1027	976	889
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	1.05	0.10	0.28

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	843	454	319	174	235	637
Future Volume (veh/h)	843	454	319	174	235	637
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	906	488	343	187	253	685
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1014	1017	448	239	585	986
Arrive On Green	0.29	0.54	0.20	0.20	0.33	0.33
Sat Flow, veh/h	3456	1870	2311	1182	1781	1585
Grp Volume(v), veh/h	906	488	273	257	253	685
Grp Sat Flow(s),veh/h/ln	1728	1870	1777	1623	1781	1585
Q Serve(g_s), s	15.5	10.0	9.0	9.3	6.9	17.8
Cycle Q Clear(g_c), s	15.5	10.0	9.0	9.3	6.9	17.8
Prop In Lane	1.00			0.73	1.00	1.00
Lane Grp Cap(c), veh/h	1014	1017	359	328	585	986
V/C Ratio(X)	0.89	0.48	0.76	0.78	0.43	0.69
Avail Cap(c_a), veh/h	1843	2156	1014	926	944	1306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	8.7	23.3	23.4	16.3	7.8
Incr Delay (d2), s/veh	1.2	0.1	1.3	1.6	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	3.0	3.5	3.3	2.5	16.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.1	8.8	24.6	25.0	16.4	8.3
LnGrp LOS	C	A	C	C	B	A
Approach Vol, veh/h		1394	530		938	
Approach Delay, s/veh		17.5	24.8		10.5	
Approach LOS		B	C		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.3		23.5	21.2	17.2
Change Period (Y+Rc), s		* 4.7		* 3.2	3.0	* 4.7
Max Green Setting (Gmax), s		* 71		* 33	33.0	* 35
Max Q Clear Time (g_c+I1), s		12.0		19.8	17.5	11.3
Green Ext Time (p_c), s		0.9		0.5	0.6	1.0

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

Notes

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

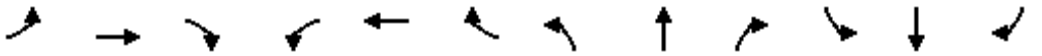
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	660	452	9	11	32
Future Vol, veh/h	29	660	452	9	11	32
Conflicting Peds, #/hr	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	733	502	10	12	36

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	514	0	-	0	1306	509
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	797	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1052	-	-	-	176	564
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	444	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1050	-	-	-	166	563
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1050	-	-	-	349
HCM Lane V/C Ratio	0.031	-	-	-	0.137
HCM Control Delay (s)	8.5	0	-	-	16.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	83	356	48	82	28	205	401	21	16	372	149
Future Volume (veh/h)	231	83	356	48	82	28	205	401	21	16	372	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.98
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	238	86	367	49	85	29	211	413	22	16	384	154
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	496	521	432	82	143	194	253	703	583	27	465	385
Arrive On Green	0.28	0.28	0.28	0.12	0.12	0.12	0.14	0.38	0.38	0.01	0.25	0.25
Sat Flow, veh/h	1781	1870	1551	672	1165	1585	1781	1870	1552	1781	1870	1549
Grp Volume(v), veh/h	238	86	367	134	0	29	211	413	22	16	384	154
Grp Sat Flow(s),veh/h/ln	1781	1870	1551	1837	0	1585	1781	1870	1552	1781	1870	1549
Q Serve(g_s), s	8.9	2.8	17.8	5.5	0.0	1.3	9.2	14.1	0.7	0.7	15.4	6.6
Cycle Q Clear(g_c), s	8.9	2.8	17.8	5.5	0.0	1.3	9.2	14.1	0.7	0.7	15.4	6.6
Prop In Lane	1.00		1.00	0.37		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	496	521	432	225	0	194	253	703	583	27	465	385
V/C Ratio(X)	0.48	0.17	0.85	0.60	0.00	0.15	0.83	0.59	0.04	0.60	0.83	0.40
Avail Cap(c_a), veh/h	847	889	737	873	0	753	358	748	621	358	748	619
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	21.7	27.1	33.0	0.0	31.2	33.2	19.9	15.7	38.9	28.3	24.9
Incr Delay (d2), s/veh	0.7	0.1	4.8	2.5	0.0	0.4	11.0	1.1	0.0	19.7	4.1	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	3.6	1.2	6.6	2.5	0.0	0.5	4.5	5.7	0.2	0.4	6.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	21.9	31.9	35.6	0.0	31.6	44.2	21.0	15.7	58.6	32.4	25.6
LnGrp LOS	C	C	C	D	A	C	D	C	B	E	C	C
Approach Vol, veh/h		691			163			646			554	
Approach Delay, s/veh		28.1			34.9			28.4			31.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.3	15.3	24.0		13.9	5.2	34.1				
Change Period (Y+Rc), s		* 4.2	4.0	* 4.2		4.2	4.0	* 4.2				
Max Green Setting (Gmax), s		* 38	16.0	* 32		37.8	16.0	* 32				
Max Q Clear Time (g_c+I1), s		19.8	11.2	17.4		7.5	2.7	16.1				
Green Ext Time (p_c), s		2.3	0.2	2.3		0.8	0.0	2.1				

Intersection Summary												
HCM 6th Ctrl Delay			29.6									
HCM 6th LOS			C									

Notes

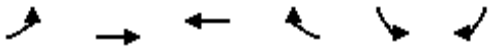
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	610	0	0	709	617	665
Future Volume (veh/h)	610	0	0	709	617	665
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	629	0	0	731	636	686
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1529	0	0	805	732	1146
Arrive On Green	0.43	0.00	0.00	0.43	0.41	0.41
Sat Flow, veh/h	3741	0	0	1870	1781	2790
Grp Volume(v), veh/h	629	0	0	731	636	686
Grp Sat Flow(s),veh/h/ln	1777	0	0	1870	1781	1395
Q Serve(g_s), s	7.7	0.0	0.0	23.0	20.6	12.1
Cycle Q Clear(g_c), s	7.7	0.0	0.0	23.0	20.6	12.1
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1529	0	0	805	732	1146
V/C Ratio(X)	0.41	0.00	0.00	0.91	0.87	0.60
Avail Cap(c_a), veh/h	1695	0	0	892	849	1330
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.4	0.0	0.0	16.8	17.0	14.5
Incr Delay (d2), s/veh	0.2	0.0	0.0	12.3	8.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.0	10.7	8.6	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.6	0.0	0.0	29.0	25.6	15.0
LnGrp LOS	B	A	A	C	C	B
Approach Vol, veh/h	629			731	1322	
Approach Delay, s/veh	12.6			29.0	20.1	
Approach LOS	B			C	C	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		30.8		32.1		32.1
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		22.6		9.7		25.0
Green Ext Time (p_c), s		3.3		3.9		2.1

Intersection Summary		
HCM 6th Ctrl Delay		20.8
HCM 6th LOS		C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↖	↗
Traffic Volume (veh/h)	0	589	886	0	221	100
Future Volume (veh/h)	0	589	886	0	221	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	607	913	0	228	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1069	1069	0	337	300
Arrive On Green	0.00	0.57	0.57	0.00	0.19	0.19
Sat Flow, veh/h	0	1870	1870	0	1781	1585
Grp Volume(v), veh/h	0	607	913	0	228	103
Grp Sat Flow(s),veh/h/ln	0	1870	1870	0	1781	1585
Q Serve(g_s), s	0.0	8.6	17.1	0.0	5.0	2.4
Cycle Q Clear(g_c), s	0.0	8.6	17.1	0.0	5.0	2.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1069	1069	0	337	300
V/C Ratio(X)	0.00	0.57	0.85	0.00	0.68	0.34
Avail Cap(c_a), veh/h	0	1342	1342	0	1278	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.7	7.5	0.0	15.7	14.7
Incr Delay (d2), s/veh	0.0	0.5	4.6	0.0	2.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	4.3	0.0	1.8	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.2	12.1	0.0	18.1	15.4
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h		607	913		331	
Approach Delay, s/veh		6.2	12.1		17.3	
Approach LOS		A	B		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			28.9		12.9	28.9
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			10.6		7.0	19.1
Green Ext Time (p_c), s			3.7		0.9	4.8

Intersection Summary		
HCM 6th Ctrl Delay		11.1
HCM 6th LOS		B

1: Shiloh Rd & Hembree Ln

5/5/2022



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	906	488	530	253	685
v/c Ratio	0.76	0.42	0.63	0.66	0.68
Control Delay	26.2	7.3	23.0	35.8	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	7.3	23.0	35.8	9.6
Queue Length 50th (ft)	147	75	79	88	63
Queue Length 95th (ft)	#402	188	168	236	308
Internal Link Dist (ft)		297	320	1022	
Turn Bay Length (ft)	300				
Base Capacity (vph)	1791	1679	1900	917	1217
Starvation Cap Reductn	0	122	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.31	0.28	0.28	0.56

Intersection Summary

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

3: Old Redwood Hwy & Shiloh Rd

5/5/2022



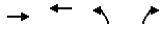
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	238	86	367	134	29	211	413	22	16	384	154
v/c Ratio	0.67	0.23	0.61	0.48	0.09	0.73	0.50	0.03	0.14	0.74	0.32
Control Delay	47.1	36.0	8.6	44.7	0.6	58.2	26.7	0.1	53.6	43.9	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	36.0	8.6	44.7	0.6	58.2	26.7	0.1	53.6	43.9	19.3
Queue Length 50th (ft)	134	44	0	77	0	123	145	0	9	200	35
Queue Length 95th (ft)	266	104	83	152	0	#350	448	0	38	#496	121
Internal Link Dist (ft)		1259		694			846			700	
Turn Bay Length (ft)	375		135		50	200		95	130		85
Base Capacity (vph)	683	719	819	706	655	289	825	725	289	605	551
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.12	0.45	0.19	0.04	0.73	0.50	0.03	0.06	0.63	0.28

Intersection Summary

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

4: US 101 NB Off-ramp & Shiloh Rd

5/5/2022



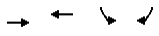
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	629	731	636	686
v/c Ratio	0.43	0.94	0.89	0.53
Control Delay	14.8	42.5	35.3	10.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	42.5	35.3	10.0
Queue Length 50th (ft)	95	291	239	64
Queue Length 95th (ft)	136	#513	#435	114
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)				265
Base Capacity (vph)	1545	813	772	1369
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.90	0.82	0.50

Intersection Summary

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

5: Shiloh Rd & US 101 SB Off-ramp

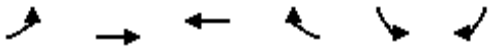
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Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	607	731	228	103
v/c Ratio	0.62	0.74	0.55	0.23
Control Delay	11.5	15.3	22.4	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.5	15.3	22.4	5.5
Queue Length 50th (ft)	102	137	62	0
Queue Length 95th (ft)	229	#335	117	28
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	1129	1129	1072	998
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.65	0.21	0.10

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	410	355	423	119	152	482
Future Volume (veh/h)	410	355	423	119	152	482
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	446	386	460	129	165	524
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	590	986	549	455	548	758
Arrive On Green	0.17	0.53	0.29	0.29	0.31	0.31
Sat Flow, veh/h	3456	1870	1870	1549	1781	1585
Grp Volume(v), veh/h	446	386	460	129	165	524
Grp Sat Flow(s),veh/h/ln	1728	1870	1870	1549	1781	1585
Q Serve(g_s), s	5.9	5.9	11.0	3.1	3.4	12.3
Cycle Q Clear(g_c), s	5.9	5.9	11.0	3.1	3.4	12.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	590	986	549	455	548	758
V/C Ratio(X)	0.76	0.39	0.84	0.28	0.30	0.69
Avail Cap(c_a), veh/h	2388	2792	1382	1145	1223	1359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	6.7	15.8	13.0	12.6	9.7
Incr Delay (d2), s/veh	0.7	0.1	1.3	0.1	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.4	3.9	0.9	1.1	10.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.6	6.8	17.1	13.1	12.7	10.1
LnGrp LOS	B	A	B	B	B	B
Approach Vol, veh/h		832	589		689	
Approach Delay, s/veh		13.7	16.3		10.8	
Approach LOS		B	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		29.9		17.9	11.2	18.7
Change Period (Y+Rc), s		* 4.7		* 3.2	3.0	* 4.7
Max Green Setting (Gmax), s		* 71		* 33	33.0	* 35
Max Q Clear Time (g_c+I1), s		7.9		14.3	7.9	13.0
Green Ext Time (p_c), s		0.7		0.4	0.3	0.9

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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

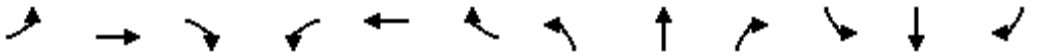
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	478	487	13	26	47
Future Vol, veh/h	35	478	487	13	26	47
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	531	541	14	29	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	557	0	-	0	1159	550
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	609	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1014	-	-	-	216	535
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1012	-	-	-	207	534
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1012	-	-	-	342
HCM Lane V/C Ratio	0.038	-	-	-	0.237
HCM Control Delay (s)	8.7	-	-	-	18.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	115	195	46	99	20	129	176	32	32	490	227
Future Volume (veh/h)	164	115	195	46	99	20	129	176	32	32	490	227
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	1.00		0.97
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	178	125	212	50	108	22	140	191	35	35	533	247
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	344	285	84	181	226	180	767	636	50	631	521
Arrive On Green	0.18	0.18	0.18	0.14	0.14	0.14	0.10	0.41	0.41	0.03	0.34	0.34
Sat Flow, veh/h	1781	1870	1550	583	1259	1574	1781	1870	1552	1781	1870	1545
Grp Volume(v), veh/h	178	125	212	158	0	22	140	191	35	35	533	247
Grp Sat Flow(s),veh/h/ln	1781	1870	1550	1841	0	1574	1781	1870	1552	1781	1870	1545
Q Serve(g_s), s	6.4	4.1	9.2	5.7	0.0	0.9	5.4	4.8	1.0	1.4	18.7	8.9
Cycle Q Clear(g_c), s	6.4	4.1	9.2	5.7	0.0	0.9	5.4	4.8	1.0	1.4	18.7	8.9
Prop In Lane	1.00		1.00	0.32		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	328	344	285	265	0	226	180	767	636	50	631	521
V/C Ratio(X)	0.54	0.36	0.74	0.60	0.00	0.10	0.78	0.25	0.05	0.70	0.84	0.47
Avail Cap(c_a), veh/h	949	997	826	981	0	839	402	839	696	402	839	693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	25.3	27.4	28.4	0.0	26.4	31.1	13.7	12.6	34.2	21.8	18.5
Incr Delay (d2), s/veh	1.4	0.6	3.8	2.2	0.0	0.2	7.1	0.2	0.0	16.1	6.1	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	2.6	1.8	3.4	2.5	0.0	0.3	2.5	1.8	0.3	0.8	8.3	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.6	25.9	31.2	30.6	0.0	26.6	38.2	13.9	12.7	50.3	27.9	19.2
LnGrp LOS	C	C	C	C	A	C	D	B	B	D	C	B
Approach Vol, veh/h		515			180			366			815	
Approach Delay, s/veh		28.7			30.1			23.1			26.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	11.2	28.1		14.4	6.0	33.3				
Change Period (Y+Rc), s		* 4.2	4.0	* 4.2		4.2	4.0	* 4.2				
Max Green Setting (Gmax), s		* 38	16.0	* 32		37.8	16.0	* 32				
Max Q Clear Time (g_c+I1), s		11.2	7.4	20.7		7.7	3.4	6.8				
Green Ext Time (p_c), s		1.9	0.2	3.2		0.9	0.0	1.1				

Intersection Summary												
HCM 6th Ctrl Delay			26.7									
HCM 6th LOS			C									

Notes

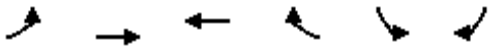
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	402	0	0	771	685	346
Future Volume (veh/h)	402	0	0	771	685	346
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	447	0	0	857	761	384
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1523	0	0	802	763	1196
Arrive On Green	0.43	0.00	0.00	0.43	0.43	0.43
Sat Flow, veh/h	3741	0	0	1870	1781	2790
Grp Volume(v), veh/h	447	0	0	857	761	384
Grp Sat Flow(s),veh/h/ln	1777	0	0	1870	1781	1395
Q Serve(g_s), s	5.8	0.0	0.0	30.0	29.8	6.4
Cycle Q Clear(g_c), s	5.8	0.0	0.0	30.0	29.8	6.4
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1523	0	0	802	763	1196
V/C Ratio(X)	0.29	0.00	0.00	1.07	1.00	0.32
Avail Cap(c_a), veh/h	1523	0	0	802	763	1196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	0.0	20.0	20.0	13.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	51.9	31.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	22.5	17.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.2	0.0	0.0	71.9	51.7	13.4
LnGrp LOS	B	A	A	F	D	B
Approach Vol, veh/h	447			857	1145	
Approach Delay, s/veh	13.2			71.9	38.9	
Approach LOS	B			E	D	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	35.0	35.0	35.0
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	30.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	31.8	7.8	32.0
Green Ext Time (p_c), s	0.0	2.7	0.0

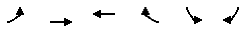
Intersection Summary	
HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (veh/h)	0	439	986	0	92	228
Future Volume (veh/h)	0	439	986	0	92	228
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	482	1084	0	101	251
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1109	1109	0	373	332
Arrive On Green	0.00	0.59	0.59	0.00	0.21	0.21
Sat Flow, veh/h	0	1870	1870	0	1781	1585
Grp Volume(v), veh/h	0	482	1084	0	101	251
Grp Sat Flow(s),veh/h/ln	0	1870	1870	0	1781	1585
Q Serve(g_s), s	0.0	7.1	28.4	0.0	2.4	7.5
Cycle Q Clear(g_c), s	0.0	7.1	28.4	0.0	2.4	7.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1109	1109	0	373	332
V/C Ratio(X)	0.00	0.43	0.98	0.00	0.27	0.76
Avail Cap(c_a), veh/h	0	1109	1109	0	1057	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.6	10.0	0.0	16.8	18.8
Incr Delay (d2), s/veh	0.0	0.3	21.6	0.0	0.4	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	12.8	0.0	0.9	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.9	31.5	0.0	17.2	22.3
LnGrp LOS	A	A	C	A	B	C
Approach Vol, veh/h		482	1084		352	
Approach Delay, s/veh		5.9	31.5		20.8	
Approach LOS		A	C		C	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			35.0		15.6	35.0
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			9.1		9.5	30.4
Green Ext Time (p_c), s			2.8		1.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay	23.1	
HCM 6th LOS	C	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	446	386	460	129	165	524
v/c Ratio	0.59	0.33	0.70	0.20	0.52	0.72
Control Delay	24.2	5.0	21.6	3.8	29.6	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	5.0	21.6	3.8	29.6	15.2
Queue Length 50th (ft)	62	41	117	0	46	69
Queue Length 95th (ft)	150	96	259	29	133	243
Internal Link Dist (ft)		297	320		1022	
Turn Bay Length (ft)	300					
Base Capacity (vph)	2185	1761	1260	1095	1119	1273
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.22	0.37	0.12	0.15	0.41

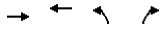
Intersection Summary



Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	178	125	212	158	22	140	191	35	35	533	247
v/c Ratio	0.62	0.41	0.50	0.52	0.07	0.60	0.24	0.05	0.26	0.86	0.44
Control Delay	48.1	41.3	9.7	43.0	0.5	52.7	22.5	0.6	50.8	47.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	41.3	9.7	43.0	0.5	52.7	22.5	0.6	50.8	47.4	23.0
Queue Length 50th (ft)	96	65	0	85	0	75	69	0	19	277	73
Queue Length 95th (ft)	202	146	66	164	0	#180	188	3	61	#723	210
Internal Link Dist (ft)		1259		694			846			700	
Turn Bay Length (ft)	375		135		50	200		95	130		85
Base Capacity (vph)	699	736	738	724	654	296	812	714	296	619	559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.17	0.29	0.22	0.03	0.47	0.24	0.05	0.12	0.86	0.44

Intersection Summary

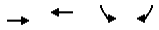
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	447	857	761	384
v/c Ratio	0.30	1.11	1.04	0.28
Control Delay	13.9	90.4	66.5	2.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	90.4	66.5	2.1
Queue Length 50th (ft)	64	~432	~362	0
Queue Length 95th (ft)	95	#639	#560	24
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)				265
Base Capacity (vph)	1466	771	733	1374
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	1.11	1.04	0.28

Intersection Summary

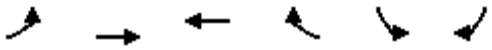
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	482	1084	101	251
v/c Ratio	0.47	1.06	0.25	0.64
Control Delay	9.6	61.1	17.2	22.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	61.1	17.2	22.9
Queue Length 50th (ft)	76	~385	25	59
Queue Length 95th (ft)	178	#687	56	119
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	1027	1027	975	888
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	1.06	0.10	0.28

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	843	482	339	178	241	637
Future Volume (veh/h)	843	482	339	178	241	637
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	906	518	365	191	259	685
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1001	1048	427	353	583	978
Arrive On Green	0.29	0.56	0.23	0.23	0.33	0.33
Sat Flow, veh/h	3456	1870	1870	1547	1781	1585
Grp Volume(v), veh/h	906	518	365	191	259	685
Grp Sat Flow(s),veh/h/ln	1728	1870	1870	1547	1781	1585
Q Serve(g_s), s	17.8	11.9	13.2	7.6	8.1	20.5
Cycle Q Clear(g_c), s	17.8	11.9	13.2	7.6	8.1	20.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1001	1048	427	353	583	978
V/C Ratio(X)	0.91	0.49	0.85	0.54	0.44	0.70
Avail Cap(c_a), veh/h	1620	1894	938	776	830	1198
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	9.4	26.0	23.9	18.6	9.1
Incr Delay (d2), s/veh	3.0	0.1	1.9	0.5	0.2	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	3.8	5.6	2.6	3.1	18.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.1	9.5	28.0	24.4	18.8	10.0
LnGrp LOS	C	A	C	C	B	B
Approach Vol, veh/h		1424	556		944	
Approach Delay, s/veh		20.7	26.7		12.4	
Approach LOS		C	C		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.2		26.2	23.4	20.8
Change Period (Y+Rc), s		* 4.7		* 3.2	3.0	* 4.7
Max Green Setting (Gmax), s		* 71		* 33	33.0	* 35
Max Q Clear Time (g_c+I1), s		13.9		22.5	19.8	15.2
Green Ext Time (p_c), s		1.0		0.5	0.6	0.7

Intersection Summary	
HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

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

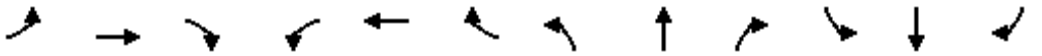
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	70	653	448	34	34	60
Future Vol, veh/h	70	653	448	34	34	60
Conflicting Peds, #/hr	2	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	726	498	38	38	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	538	0	-	0	1401	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	882	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1030	-	-	-	154	557
Stage 1	-	-	-	-	597	-
Stage 2	-	-	-	-	405	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1028	-	-	-	142	556
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	404	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1028	-	-	-	271
HCM Lane V/C Ratio	0.076	-	-	-	0.385
HCM Control Delay (s)	8.8	-	-	-	26.4
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7



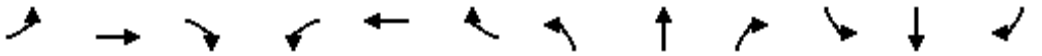
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	83	364	48	83	28	212	401	21	16	372	158
Future Volume (veh/h)	238	83	364	48	83	28	212	401	21	16	372	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.98
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	245	86	375	49	86	29	219	413	22	16	384	163
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	503	528	438	80	140	190	260	708	588	27	463	383
Arrive On Green	0.28	0.28	0.28	0.12	0.12	0.12	0.15	0.38	0.38	0.01	0.25	0.25
Sat Flow, veh/h	1781	1870	1551	667	1170	1585	1781	1870	1552	1781	1870	1549
Grp Volume(v), veh/h	245	86	375	135	0	29	219	413	22	16	384	163
Grp Sat Flow(s),veh/h/ln	1781	1870	1551	1837	0	1585	1781	1870	1552	1781	1870	1549
Q Serve(g_s), s	9.3	2.8	18.6	5.7	0.0	1.3	9.7	14.3	0.7	0.7	15.8	7.2
Cycle Q Clear(g_c), s	9.3	2.8	18.6	5.7	0.0	1.3	9.7	14.3	0.7	0.7	15.8	7.2
Prop In Lane	1.00		1.00	0.36		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	503	528	438	220	0	190	260	708	588	27	463	383
V/C Ratio(X)	0.49	0.16	0.86	0.61	0.00	0.15	0.84	0.58	0.04	0.60	0.83	0.43
Avail Cap(c_a), veh/h	827	869	721	853	0	736	350	731	606	350	731	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	22.0	27.6	34.0	0.0	32.1	33.8	20.2	15.9	39.8	29.0	25.7
Incr Delay (d2), s/veh	0.7	0.1	5.6	2.8	0.0	0.4	12.9	1.1	0.0	19.9	4.6	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	3.8	1.2	7.0	2.6	0.0	0.5	4.9	5.9	0.2	0.5	7.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	22.1	33.2	36.8	0.0	32.5	46.7	21.3	16.0	59.8	33.5	26.5
LnGrp LOS	C	C	C	D	A	C	D	C	B	E	C	C
Approach Vol, veh/h		706			164			654			563	
Approach Delay, s/veh		29.0			36.0			29.6			32.2	
Approach LOS		C			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.2	15.9	24.4		14.0	5.2	35.0				
Change Period (Y+Rc), s		* 4.2	4.0	* 4.2		4.2	4.0	* 4.2				
Max Green Setting (Gmax), s		* 38	16.0	* 32		37.8	16.0	* 32				
Max Q Clear Time (g_c+I1), s		20.6	11.7	17.8		7.7	2.7	16.3				
Green Ext Time (p_c), s		2.4	0.2	2.3		0.8	0.0	2.1				

Intersection Summary												
HCM 6th Ctrl Delay			30.6									
HCM 6th LOS			C									

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)	238	83	364	48	83	28	212	401	21	16	372	158
Future Volume (veh/h)	238	83	364	48	83	28	212	401	21	16	372	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.98
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	245	86	375	49	86	29	219	413	22	16	384	163
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	503	528	438	80	140	189	263	711	590	27	463	383
Arrive On Green	0.28	0.28	0.28	0.12	0.12	0.12	0.15	0.38	0.38	0.01	0.25	0.25
Sat Flow, veh/h	1781	1870	1551	667	1170	1585	1781	1870	1552	1781	1870	1549
Grp Volume(v), veh/h	245	86	375	135	0	29	219	413	22	16	384	163
Grp Sat Flow(s),veh/h/ln	1781	1870	1551	1837	0	1585	1781	1870	1552	1781	1870	1549
Q Serve(g_s), s	9.3	2.8	18.7	5.7	0.0	1.3	9.8	14.3	0.7	0.7	15.9	7.2
Cycle Q Clear(g_c), s	9.3	2.8	18.7	5.7	0.0	1.3	9.8	14.3	0.7	0.7	15.9	7.2
Prop In Lane	1.00		1.00	0.36		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	503	528	438	220	0	189	263	711	590	27	463	383
V/C Ratio(X)	0.49	0.16	0.86	0.62	0.00	0.15	0.83	0.58	0.04	0.60	0.83	0.43
Avail Cap(c_a), veh/h	825	866	718	850	0	734	436	728	604	349	728	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)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	22.0	27.7	34.2	0.0	32.2	33.8	20.1	15.9	40.0	29.1	25.8
Incr Delay (d2), s/veh	0.7	0.1	5.6	2.8	0.0	0.4	6.9	1.1	0.0	20.0	4.6	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	3.8	1.2	7.1	2.6	0.0	0.5	4.5	5.9	0.2	0.5	7.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.1	22.2	33.4	37.0	0.0	32.6	40.7	21.3	15.9	59.9	33.7	26.6
LnGrp LOS	C	C	C	D	A	C	D	C	B	E	C	C
Approach Vol, veh/h		706			164			654			563	
Approach Delay, s/veh		29.1			36.2			27.6			32.4	
Approach LOS		C			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		27.3	16.0	24.4		14.0	5.2	35.2				
Change Period (Y+Rc), s		* 4.2	4.0	* 4.2		4.2	4.0	* 4.2				
Max Green Setting (Gmax), s		* 38	20.0	* 32		37.8	16.0	* 32				
Max Q Clear Time (g_c+I1), s		20.7	11.8	17.9		7.7	2.7	16.3				
Green Ext Time (p_c), s		2.4	0.4	2.3		0.8	0.0	2.1				

Intersection Summary		
HCM 6th Ctrl Delay		30.1
HCM 6th LOS		C

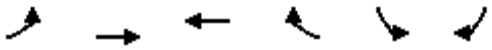
Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	619	0	0	727	617	684
Future Volume (veh/h)	619	0	0	727	617	684
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	638	0	0	749	636	705
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1546	0	0	814	728	1141
Arrive On Green	0.44	0.00	0.00	0.44	0.41	0.41
Sat Flow, veh/h	3741	0	0	1870	1781	2790
Grp Volume(v), veh/h	638	0	0	749	636	705
Grp Sat Flow(s),veh/h/ln	1777	0	0	1870	1781	1395
Q Serve(g_s), s	7.9	0.0	0.0	24.2	21.0	12.8
Cycle Q Clear(g_c), s	7.9	0.0	0.0	24.2	21.0	12.8
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1546	0	0	814	728	1141
V/C Ratio(X)	0.41	0.00	0.00	0.92	0.87	0.62
Avail Cap(c_a), veh/h	1663	0	0	875	834	1305
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	0.0	0.0	17.1	17.4	15.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	14.2	9.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	0.0	11.6	8.9	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.6	0.0	0.0	31.2	26.6	15.7
LnGrp LOS	B	A	A	C	C	B
Approach Vol, veh/h	638			749	1341	
Approach Delay, s/veh	12.6			31.2	20.9	
Approach LOS	B			C	C	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		31.2		32.9		32.9
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		23.0		9.9		26.2
Green Ext Time (p_c), s		3.2		4.0		1.7

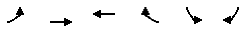
Intersection Summary		
HCM 6th Ctrl Delay		21.8
HCM 6th LOS		C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Traffic Volume (veh/h)	0	595	890	0	223	100
Future Volume (veh/h)	0	595	890	0	223	100
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	613	918	0	230	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1071	1071	0	339	301
Arrive On Green	0.00	0.57	0.57	0.00	0.19	0.19
Sat Flow, veh/h	0	1870	1870	0	1781	1585
Grp Volume(v), veh/h	0	613	918	0	230	103
Grp Sat Flow(s),veh/h/ln	0	1870	1870	0	1781	1585
Q Serve(g_s), s	0.0	8.8	17.4	0.0	5.1	2.4
Cycle Q Clear(g_c), s	0.0	8.8	17.4	0.0	5.1	2.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1071	1071	0	339	301
V/C Ratio(X)	0.00	0.57	0.86	0.00	0.68	0.34
Avail Cap(c_a), veh/h	0	1332	1332	0	1269	1129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.7	7.6	0.0	15.9	14.8
Incr Delay (d2), s/veh	0.0	0.5	4.8	0.0	2.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	4.4	0.0	1.8	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.2	12.4	0.0	18.3	15.4
LnGrp LOS	A	A	B	A	B	B
Approach Vol, veh/h		613	918		333	
Approach Delay, s/veh		6.2	12.4		17.4	
Approach LOS		A	B		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			29.1		13.0	29.1
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			10.8		7.1	19.4
Green Ext Time (p_c), s			3.7		1.0	4.8

Intersection Summary		
HCM 6th Ctrl Delay		11.2
HCM 6th LOS		B



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	906	518	365	191	259	685
v/c Ratio	0.78	0.43	0.74	0.34	0.70	0.71
Control Delay	29.6	7.5	35.9	5.9	40.4	11.6
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	29.6	7.5	35.9	5.9	40.4	11.6
Queue Length 50th (ft)	180	90	151	0	109	103
Queue Length 95th (ft)	#406	207	304	48	242	323
Internal Link Dist (ft)		297	320		1022	
Turn Bay Length (ft)	300					
Base Capacity (vph)	1590	1609	923	867	814	1138
Starvation Cap Reductn	0	220	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.37	0.40	0.22	0.32	0.60

Intersection Summary

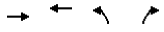
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	245	86	375	135	29	219	413	22	16	384	163
v/c Ratio	0.68	0.23	0.61	0.48	0.10	0.76	0.50	0.03	0.14	0.75	0.34
Control Delay	47.2	35.7	8.5	45.2	0.6	61.0	27.1	0.1	53.9	44.4	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	35.7	8.5	45.2	0.6	61.0	27.1	0.1	53.9	44.4	20.2
Queue Length 50th (ft)	139	44	0	78	0	129	147	0	9	202	40
Queue Length 95th (ft)	273	104	83	155	0	#370	452	0	38	#500	132
Internal Link Dist (ft)		1259		694			846			700	
Turn Bay Length (ft)	375		135		50	200		95	130		85
Base Capacity (vph)	679	714	820	702	651	287	820	721	287	601	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.12	0.46	0.19	0.04	0.76	0.50	0.03	0.06	0.64	0.30

Intersection Summary

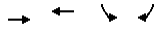
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	638	749	636	705
v/c Ratio	0.43	0.96	0.89	0.55
Control Delay	14.8	44.8	36.0	10.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	44.8	36.0	10.6
Queue Length 50th (ft)	97	303	239	70
Queue Length 95th (ft)	138	#531	#435	122
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)				265
Base Capacity (vph)	1519	799	760	1347
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.94	0.84	0.52

Intersection Summary

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



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	613	918	230	103
v/c Ratio	0.59	0.88	0.58	0.26
Control Delay	10.9	24.5	24.0	9.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.9	24.5	24.0	9.7
Queue Length 50th (ft)	104	209	63	10
Queue Length 95th (ft)	232	#524	118	39
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	1038	1038	986	908
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.88	0.23	0.11

Intersection Summary

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

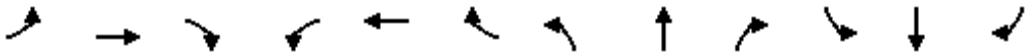


Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	245	86	375	135	29	219	413	22	16	384	163
v/c Ratio	0.69	0.23	0.62	0.50	0.10	0.70	0.49	0.03	0.14	0.74	0.34
Control Delay	50.2	37.9	8.7	48.4	0.7	55.6	26.5	0.1	56.6	46.1	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	37.9	8.7	48.4	0.7	55.6	26.5	0.1	56.6	46.1	21.8
Queue Length 50th (ft)	150	48	0	84	0	133	151	0	10	219	44
Queue Length 95th (ft)	282	108	85	161	0	#343	455	0	39	#527	139
Internal Link Dist (ft)		1259		694			846			700	
Turn Bay Length (ft)	375		135		50	200		95	130		85
Base Capacity (vph)	644	678	798	666	621	341	851	746	272	570	522
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.13	0.47	0.20	0.05	0.64	0.49	0.03	0.06	0.67	0.31

Intersection Summary

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





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	617	33	23	670	120	37	6	10	223	8	508
Future Volume (veh/h)	432	617	33	23	670	120	37	6	10	223	8	508
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		0.99	1.00		1.00	1.00		0.99
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	455	649	35	24	705	126	39	6	11	235	8	535
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	546	775	657	28	818	146	81	27	50	535	18	735
Arrive On Green	0.16	0.41	0.41	0.02	0.27	0.27	0.05	0.05	0.05	0.31	0.31	0.31
Sat Flow, veh/h	3456	1870	1585	1781	3005	537	1781	591	1084	1725	59	1564
Grp Volume(v), veh/h	455	649	35	24	417	414	39	0	17	243	0	535
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1777	1765	1781	0	1675	1784	0	1564
Q Serve(g_s), s	9.7	23.6	1.0	1.0	16.9	16.9	1.6	0.0	0.7	8.2	0.0	20.9
Cycle Q Clear(g_c), s	9.7	23.6	1.0	1.0	16.9	16.9	1.6	0.0	0.7	8.2	0.0	20.9
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.65	0.97		1.00
Lane Grp Cap(c), veh/h	546	775	657	28	484	480	81	0	77	553	0	735
V/C Ratio(X)	0.83	0.84	0.05	0.85	0.86	0.86	0.48	0.00	0.22	0.44	0.00	0.73
Avail Cap(c_a), veh/h	1597	1638	1388	129	864	858	565	0	531	660	0	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	19.9	13.3	37.2	26.2	26.2	35.3	0.0	34.8	20.9	0.0	16.3
Incr Delay (d2), s/veh	1.3	0.9	0.0	46.7	1.8	1.8	4.3	0.0	1.4	0.2	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	9.1	0.3	0.8	6.8	6.7	0.8	0.0	0.3	3.2	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	20.8	13.3	83.8	28.0	28.0	39.6	0.0	36.3	21.1	0.0	18.5
LnGrp LOS	C	C	B	F	C	C	D	A	D	C	A	B
Approach Vol, veh/h		1139			855			56			778	
Approach Delay, s/veh		25.1			29.6			38.6			19.3	
Approach LOS		C			C			D			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.7	36.1		27.5	15.5	25.3		7.5				
Change Period (Y+Rc), s	3.5	* 4.7		4.0	3.5	* 4.7		4.0				
Max Green Setting (Gmax), s	5.5	* 66		28.0	35.0	* 37		24.0				
Max Q Clear Time (g_c+I1), s	3.0	25.6		22.9	11.7	18.9		3.6				
Green Ext Time (p_c), s	0.0	1.3		0.5	0.3	1.5		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		25.1	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

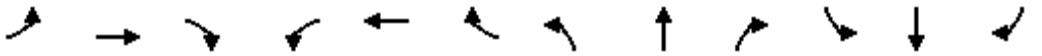
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	829	14	0	789	2	0	0	3	0	0	16
Future Vol, veh/h	21	829	14	0	789	2	0	0	3	0	0	16
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	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	22	873	15	0	831	2	0	0	3	0	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	835	0	0	-	-	0	-	-	444	-	-	419
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	794	-	-	0	-	-	0	0	561	0	0	583
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	793	-	-	-	-	-	-	-	561	-	-	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	11.5	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	561	793	-	-	-	-	582
HCM Lane V/C Ratio	0.006	0.028	-	-	-	-	0.029
HCM Control Delay (s)	11.5	9.7	-	-	-	-	11.4
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	121	269	55	107	21	203	271	40	39	582	245
Future Volume (veh/h)	192	121	269	55	107	21	203	271	40	39	582	245
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
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	202	127	283	58	113	22	214	285	42	41	613	258
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	251	287	390	215	218	42	332	855	709	56	734	614
Arrive On Green	0.14	0.15	0.15	0.12	0.14	0.14	0.10	0.46	0.46	0.03	0.39	0.39
Sat Flow, veh/h	1781	1870	1550	1781	1521	296	3456	1870	1552	1781	1870	1564
Grp Volume(v), veh/h	202	127	283	58	0	135	214	285	42	41	613	258
Grp Sat Flow(s),veh/h/ln	1781	1870	1550	1781	0	1817	1728	1870	1552	1781	1870	1564
Q Serve(g_s), s	7.7	4.3	7.1	2.1	0.0	4.8	4.2	6.8	0.6	1.6	20.7	8.4
Cycle Q Clear(g_c), s	7.7	4.3	7.1	2.1	0.0	4.8	4.2	6.8	0.6	1.6	20.7	8.4
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	287	390	215	0	260	332	855	709	56	734	614
V/C Ratio(X)	0.80	0.44	0.73	0.27	0.00	0.52	0.64	0.33	0.06	0.73	0.84	0.42
Avail Cap(c_a), veh/h	522	1038	1012	395	0	879	1335	1627	1350	229	1145	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	26.9	10.1	27.9	0.0	27.7	30.4	12.2	3.3	33.6	19.2	15.5
Incr Delay (d2), s/veh	5.9	1.1	2.6	0.7	0.0	1.6	2.1	0.2	0.0	16.7	3.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	1.9	2.8	0.9	0.0	2.1	1.7	2.5	0.3	0.9	8.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	27.9	12.7	28.6	0.0	29.3	32.5	12.4	3.3	50.3	22.4	15.9
LnGrp LOS	C	C	B	C	A	C	C	B	A	D	C	B
Approach Vol, veh/h		612			193			541			912	
Approach Delay, s/veh		23.2			29.1			19.7			21.8	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	14.9	10.7	31.6	13.4	14.2	6.2	36.1
Change Period (Y+Rc), s	* 4.2	* 4.2	4.0	* 4.2	3.5	* 4.2	4.0	* 4.2
Max Green Setting (Gmax), s	* 16	* 39	27.0	* 43	20.5	* 34	9.0	* 61
Max Q Clear Time (g_c+I1), s	4.1	9.1	6.2	22.7	9.7	6.8	3.6	8.8
Green Ext Time (p_c), s	0.1	1.7	0.6	4.7	0.4	0.7	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	22.3
HCM 6th LOS	C

Notes

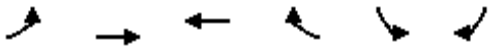
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	650	0	0	1025	813	473
Future Volume (veh/h)	650	0	0	1025	813	473
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	684	0	0	1079	856	498
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1464	0	0	1464	1380	633
Arrive On Green	0.41	0.00	0.00	0.41	0.40	0.40
Sat Flow, veh/h	3741	0	0	3741	3456	1585
Grp Volume(v), veh/h	684	0	0	1079	856	498
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1585
Q Serve(g_s), s	7.4	0.0	0.0	13.6	10.5	14.6
Cycle Q Clear(g_c), s	7.4	0.0	0.0	13.6	10.5	14.6
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1464	0	0	1464	1380	633
V/C Ratio(X)	0.47	0.00	0.00	0.74	0.62	0.79
Avail Cap(c_a), veh/h	2010	0	0	2010	1955	897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.4	0.0	0.0	13.2	12.7	13.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	0.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	4.3	3.2	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.6	0.0	0.0	14.1	13.2	17.0
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	684			1079	1354	
Approach Delay, s/veh	11.6			14.1	14.6	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		26.2		26.9		26.9
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		16.6		9.4		15.6
Green Ext Time (p_c), s		4.6		4.4		6.3

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



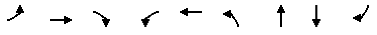
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	1145	412	0	240	184
Future Volume (veh/h)	0	1145	412	0	240	184
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1205	434	0	253	194
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1837	1837	0	388	346
Arrive On Green	0.00	0.52	0.52	0.00	0.22	0.22
Sat Flow, veh/h	0	3741	3741	0	1781	1585
Grp Volume(v), veh/h	0	1205	434	0	253	194
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	9.4	2.5	0.0	4.9	4.1
Cycle Q Clear(g_c), s	0.0	9.4	2.5	0.0	4.9	4.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1837	1837	0	388	346
V/C Ratio(X)	0.00	0.66	0.24	0.00	0.65	0.56
Avail Cap(c_a), veh/h	0	2825	2825	0	1416	1260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	5.0	0.0	13.4	13.1
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.0	1.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.4	0.0	1.6	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	5.1	0.0	15.3	14.6
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		1205	434		447	
Approach Delay, s/veh		7.1	5.1		15.0	
Approach LOS		A	A		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			24.5		13.2	24.5
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			11.4		6.9	4.5
Green Ext Time (p_c), s			8.2		1.3	2.7

Intersection Summary		
HCM 6th Ctrl Delay	8.3	
HCM 6th LOS	A	

1: Shiloh Rd & Hembree Ln

5/11/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	455	649	35	24	831	39	17	243	535
v/c Ratio	0.69	0.67	0.04	0.20	0.75	0.21	0.09	0.71	0.66
Control Delay	43.2	23.3	0.9	57.3	34.4	46.6	29.4	51.5	9.2
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	23.4	0.9	57.3	34.4	46.6	29.4	51.5	9.2
Queue Length 50th (ft)	121	223	0	13	207	20	3	126	49
Queue Length 95th (ft)	259	641	5	55	443	66	27	307	150
Internal Link Dist (ft)		297			320		686	1022	
Turn Bay Length (ft)	300		100	160		200			
Base Capacity (vph)	1461	1354	1168	118	1581	516	498	605	1201
Starvation Cap Reductn	0	146	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.54	0.03	0.20	0.53	0.08	0.03	0.40	0.45

Intersection Summary

3: Old Redwood Hwy & Shiloh Rd

5/11/2022



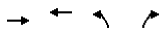
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	202	127	283	58	135	214	285	42	41	613	258
v/c Ratio	0.72	0.43	0.50	0.19	0.50	0.55	0.32	0.05	0.33	0.82	0.37
Control Delay	58.4	49.4	9.0	37.9	45.6	51.3	20.5	0.1	58.1	40.5	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	49.4	9.0	37.9	45.6	51.3	20.5	0.1	58.1	40.5	13.9
Queue Length 50th (ft)	124	79	28	32	80	69	116	0	26	344	51
Queue Length 95th (ft)	#278	165	67	75	146	128	252	0	73	#787	160
Internal Link Dist (ft)		1259			694		846			700	
Turn Bay Length (ft)	375			100		200		95	130		85
Base Capacity (vph)	339	676	760	335	579	867	1059	923	148	746	702
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.19	0.37	0.17	0.23	0.25	0.27	0.05	0.28	0.82	0.37

Intersection Summary

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

4: US 101 NB Off-ramp & Shiloh Rd

5/11/2022

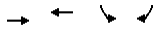


Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	684	1079	856	498
v/c Ratio	0.47	0.74	0.66	0.73
Control Delay	13.8	18.3	17.4	18.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.8	18.3	17.4	18.5
Queue Length 50th (ft)	84	156	123	105
Queue Length 95th (ft)	150	267	195	226
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)			265	
Base Capacity (vph)	1876	1876	1820	899
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	0.58	0.47	0.55

Intersection Summary

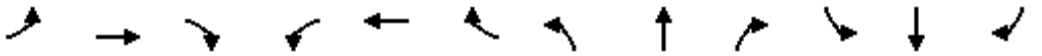
5: Shiloh Rd & US 101 SB Off-ramp

5/11/2022



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1205	434	253	194
v/c Ratio	0.69	0.25	0.55	0.35
Control Delay	11.5	7.2	20.8	5.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.5	7.2	20.8	5.0
Queue Length 50th (ft)	114	30	59	0
Queue Length 95th (ft)	215	63	128	37
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	2256	2256	1128	1075
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.53	0.19	0.22	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	888	818	41	45	600	235	58	10	12	288	10	671
Future Volume (veh/h)	888	818	41	45	600	235	58	10	12	288	10	671
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		0.99	1.00		1.00	1.00		0.99
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	906	835	42	46	612	240	59	10	12	294	10	685
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	963	965	818	59	671	263	86	37	45	440	15	841
Arrive On Green	0.28	0.52	0.52	0.03	0.27	0.27	0.05	0.05	0.05	0.26	0.26	0.26
Sat Flow, veh/h	3456	1870	1585	1781	2483	973	1781	774	929	1725	59	1563
Grp Volume(v), veh/h	906	835	42	46	438	414	59	0	22	304	0	685
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1777	1679	1781	0	1703	1784	0	1563
Q Serve(g_s), s	28.1	42.8	1.4	2.8	26.2	26.2	3.6	0.0	1.4	16.8	0.0	28.0
Cycle Q Clear(g_c), s	28.1	42.8	1.4	2.8	26.2	26.2	3.6	0.0	1.4	16.8	0.0	28.0
Prop In Lane	1.00		1.00	1.00		0.58	1.00		0.55	0.97		1.00
Lane Grp Cap(c), veh/h	963	965	818	59	480	454	86	0	82	455	0	841
V/C Ratio(X)	0.94	0.87	0.05	0.78	0.91	0.91	0.69	0.00	0.27	0.67	0.00	0.81
Avail Cap(c_a), veh/h	1102	1130	958	89	596	563	390	0	372	455	0	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.7	23.2	13.2	52.7	38.8	38.8	51.4	0.0	50.4	36.7	0.0	21.2
Incr Delay (d2), s/veh	13.3	5.7	0.0	21.4	14.4	15.3	9.4	0.0	1.7	3.0	0.0	5.8
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	13.2	18.8	0.5	1.6	12.9	12.3	1.8	0.0	0.6	7.6	0.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	28.9	13.2	74.1	53.2	54.1	60.8	0.0	52.1	39.7	0.0	27.0
LnGrp LOS	D	C	B	E	D	D	E	A	D	D	A	C
Approach Vol, veh/h		1783			898			81			989	
Approach Delay, s/veh		40.2			54.7			58.5			30.9	
Approach LOS		D			D			E			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	61.3		32.0	34.1	34.4		9.3				
Change Period (Y+Rc), s	3.5	* 4.7		4.0	3.5	* 4.7		4.0				
Max Green Setting (Gmax), s	5.5	* 66		28.0	35.0	* 37		24.0				
Max Q Clear Time (g_c+I1), s	4.8	44.8		30.0	30.1	28.2		5.6				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.5	1.4		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		41.6
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

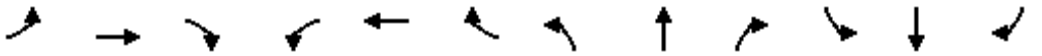
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	1080	20	0	837	9	0	0	9	0	0	43
Future Vol, veh/h	29	1080	20	0	837	9	0	0	9	0	0	43
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	1102	20	0	854	9	0	0	9	0	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	865	0	0	-	-	0	-	-	561	-	-	434
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	774	-	-	0	-	-	0	0	471	0	0	570
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	773	-	-	-	-	-	-	-	471	-	-	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	12.8	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	471	773	-	-	-	-	569
HCM Lane V/C Ratio	0.019	0.038	-	-	-	-	0.077
HCM Control Delay (s)	12.8	9.8	-	-	-	-	11.9
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	276	97	550	52	88	30	316	505	26	17	557	224
Future Volume (veh/h)	276	97	550	52	88	30	316	505	26	17	557	224
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
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	282	99	561	53	90	31	322	515	27	17	568	229
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	323	522	630	94	211	73	430	861	715	28	657	550
Arrive On Green	0.18	0.28	0.28	0.05	0.16	0.16	0.12	0.46	0.46	0.02	0.35	0.35
Sat Flow, veh/h	1781	1870	1551	1781	1330	458	3456	1870	1552	1781	1870	1564
Grp Volume(v), veh/h	282	99	561	53	0	121	322	515	27	17	568	229
Grp Sat Flow(s),veh/h/ln	1781	1870	1551	1781	0	1788	1728	1870	1552	1781	1870	1564
Q Serve(g_s), s	13.3	3.5	19.6	2.5	0.0	5.3	7.8	17.7	0.6	0.8	24.4	9.6
Cycle Q Clear(g_c), s	13.3	3.5	19.6	2.5	0.0	5.3	7.8	17.7	0.6	0.8	24.4	9.6
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	323	522	630	94	0	284	430	861	715	28	657	550
V/C Ratio(X)	0.87	0.19	0.89	0.56	0.00	0.43	0.75	0.60	0.04	0.62	0.86	0.42
Avail Cap(c_a), veh/h	423	840	894	319	0	699	1080	1316	1092	186	926	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.4	23.7	11.5	40.0	0.0	32.8	36.5	17.4	6.7	42.3	26.1	21.3
Incr Delay (d2), s/veh	14.6	0.2	8.3	5.2	0.0	1.0	2.6	0.7	0.0	20.2	6.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	1.5	6.9	1.2	0.0	2.3	3.3	7.0	0.3	0.5	11.1	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	23.9	19.8	45.1	0.0	33.8	39.2	18.0	6.7	62.5	32.3	21.8
LnGrp LOS	D	C	B	D	A	C	D	B	A	E	C	C
Approach Vol, veh/h		942			174			864			814	
Approach Delay, s/veh		29.0			37.3			25.5			30.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	28.3	14.8	34.6	19.2	17.9	5.3	44.0
Change Period (Y+Rc), s	* 4.2	* 4.2	4.0	* 4.2	3.5	* 4.2	4.0	* 4.2
Max Green Setting (Gmax), s	* 16	* 39	27.0	* 43	20.5	* 34	9.0	* 61
Max Q Clear Time (g_c+I1), s	4.5	21.6	9.8	26.4	15.3	7.3	2.8	19.7
Green Ext Time (p_c), s	0.1	2.5	1.0	3.9	0.4	0.6	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

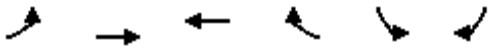
Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	886	0	0	883	694	874
Future Volume (veh/h)	886	0	0	883	694	874
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	904	0	0	901	708	892
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1215	0	0	1215	1705	782
Arrive On Green	0.34	0.00	0.00	0.34	0.49	0.49
Sat Flow, veh/h	3741	0	0	3741	3456	1585
Grp Volume(v), veh/h	904	0	0	901	708	892
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1585
Q Serve(g_s), s	13.6	0.0	0.0	13.6	7.9	30.0
Cycle Q Clear(g_c), s	13.6	0.0	0.0	13.6	7.9	30.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1215	0	0	1215	1705	782
V/C Ratio(X)	0.74	0.00	0.00	0.74	0.42	1.14
Avail Cap(c_a), veh/h	1754	0	0	1754	1705	782
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	17.6	9.8	15.4
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.0	0.2	78.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	0.0	4.9	2.4	25.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	0.0	0.0	18.6	10.0	93.6
LnGrp LOS	B	A	A	B	A	F
Approach Vol, veh/h	904			901	1600	
Approach Delay, s/veh	18.7			18.6	56.6	
Approach LOS	B			B	E	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	35.0	25.8	25.8
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	30.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	32.0	15.6	15.6
Green Ext Time (p_c), s	0.0	5.1	5.1

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	762	1063	0	322	94
Future Volume (veh/h)	0	762	1063	0	322	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	778	1085	0	329	96
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1700	1700	0	454	404
Arrive On Green	0.00	0.48	0.48	0.00	0.26	0.26
Sat Flow, veh/h	0	3741	3741	0	1781	1585
Grp Volume(v), veh/h	0	778	1085	0	329	96
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	5.5	8.6	0.0	6.3	1.8
Cycle Q Clear(g_c), s	0.0	5.5	8.6	0.0	6.3	1.8
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1700	1700	0	454	404
V/C Ratio(X)	0.00	0.46	0.64	0.00	0.72	0.24
Avail Cap(c_a), veh/h	0	2841	2841	0	1424	1267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.5	7.3	0.0	12.8	11.1
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.0	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.7	0.0	2.1	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.7	7.8	0.0	15.0	11.4
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		778	1085		425	
Approach Delay, s/veh		6.7	7.8		14.2	
Approach LOS		A	A		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			23.0		14.6	23.0
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			7.5		8.3	10.6
Green Ext Time (p_c), s			5.2		1.2	7.4

Intersection Summary		
HCM 6th Ctrl Delay		8.6
HCM 6th LOS		A



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	906	835	42	46	852	59	22	304	685
v/c Ratio	0.91	0.83	0.05	0.57	0.90	0.36	0.13	0.86	0.74
Control Delay	56.8	34.9	1.8	88.4	53.3	59.7	33.6	70.0	14.1
Queue Delay	0.0	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	48.8	1.8	88.4	53.3	59.7	33.6	70.0	14.1
Queue Length 50th (ft)	377	578	0	38	332	47	8	235	163
Queue Length 95th (ft)	#609	#1023	10	#112	#525	91	34	#439	266
Internal Link Dist (ft)		297			320		686	1022	
Turn Bay Length (ft)	300		100	160		200			
Base Capacity (vph)	994	1021	896	80	1055	351	349	411	944
Starvation Cap Reductn	0	183	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	1.00	0.05	0.57	0.81	0.17	0.06	0.74	0.73

Intersection Summary

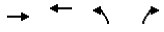
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	282	99	561	53	121	322	515	27	17	568	229
v/c Ratio	0.95	0.53	0.95	0.14	0.51	0.49	0.51	0.03	0.18	0.87	0.36
Control Delay	90.6	62.8	45.2	41.2	50.6	46.1	21.5	0.1	61.5	51.8	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.6	62.8	45.2	41.2	50.6	46.1	21.5	0.1	61.5	51.8	14.9
Queue Length 50th (ft)	210	72	154	34	79	109	194	0	12	387	48
Queue Length 95th (ft)	#481	145	#354	74	140	186	497	0	41	#784	144
Internal Link Dist (ft)		1259			694		846			700	
Turn Bay Length (ft)	375			120		200		95	130		85
Base Capacity (vph)	297	592	631	387	505	760	1004	880	130	653	632
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.17	0.89	0.14	0.24	0.42	0.51	0.03	0.13	0.87	0.36

Intersection Summary

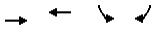
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	904	901	708	892
v/c Ratio	0.73	0.72	0.45	1.17
Control Delay	21.0	20.9	13.0	109.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.0	20.9	13.0	109.6
Queue Length 50th (ft)	152	152	89	~415
Queue Length 95th (ft)	211	210	155	#703
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)			265	
Base Capacity (vph)	1632	1632	1583	764
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.55	0.45	1.17

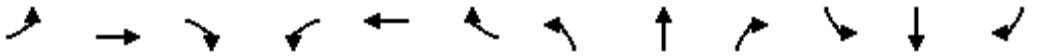
Intersection Summary

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



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	778	1085	329	96
v/c Ratio	0.49	0.68	0.61	0.19
Control Delay	10.5	13.1	20.2	10.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.5	13.1	20.2	10.1
Queue Length 50th (ft)	71	112	75	11
Queue Length 95th (ft)	141	217	167	42
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	2252	2252	1126	1020
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.48	0.29	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	432	641	33	46	689	125	37	6	10	225	8	508
Future Volume (veh/h)	432	641	33	46	689	125	37	6	10	225	8	508
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		0.99	1.00		1.00	1.00		0.99
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	455	675	35	48	725	132	39	6	11	237	8	535
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	526	988	837	61	768	642	73	24	44	386	13	591
Arrive On Green	0.15	0.53	0.53	0.03	0.41	0.41	0.04	0.04	0.04	0.22	0.22	0.22
Sat Flow, veh/h	3456	1870	1585	1781	1870	1564	1781	591	1084	1726	58	1563
Grp Volume(v), veh/h	455	675	35	48	725	132	39	0	17	245	0	535
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1564	1781	0	1675	1784	0	1563
Q Serve(g_s), s	12.1	25.0	1.0	2.5	35.0	5.1	2.0	0.0	0.9	11.6	0.0	21.0
Cycle Q Clear(g_c), s	12.1	25.0	1.0	2.5	35.0	5.1	2.0	0.0	0.9	11.6	0.0	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.65	0.97		1.00
Lane Grp Cap(c), veh/h	526	988	837	61	768	642	73	0	69	399	0	591
V/C Ratio(X)	0.87	0.68	0.04	0.78	0.94	0.21	0.54	0.00	0.25	0.61	0.00	0.91
Avail Cap(c_a), veh/h	740	1437	1218	127	1170	978	456	0	428	399	0	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.8	16.3	10.7	45.0	26.6	17.8	44.1	0.0	43.6	32.8	0.0	27.8
Incr Delay (d2), s/veh	5.8	0.3	0.0	19.2	8.8	0.1	6.0	0.0	1.9	2.0	0.0	17.2
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	5.3	9.5	0.3	1.4	16.1	1.7	1.0	0.0	0.4	5.1	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	16.6	10.7	64.2	35.4	17.9	50.1	0.0	45.5	34.8	0.0	44.9
LnGrp LOS	D	B	B	E	D	B	D	A	D	C	A	D
Approach Vol, veh/h		1165			905			56			780	
Approach Delay, s/veh		27.4			34.4			48.7			41.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	54.3		25.0	17.8	43.2		7.8				
Change Period (Y+Rc), s	3.5	* 4.7		4.0	3.5	* 4.7		4.0				
Max Green Setting (Gmax), s	6.7	* 72		21.0	20.1	* 59		24.0				
Max Q Clear Time (g_c+I1), s	4.5	27.0		23.0	14.1	37.0		4.0				
Green Ext Time (p_c), s	0.0	1.4		0.0	0.2	1.5		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		33.8	
HCM 6th LOS		C	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

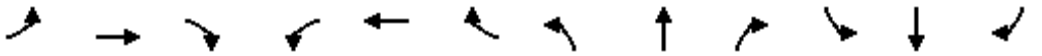
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	850	14	0	787	13	0	0	3	0	0	73
Future Vol, veh/h	35	850	14	0	787	13	0	0	3	0	0	73
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	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	37	895	15	0	828	14	0	0	3	0	0	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	844	0	0	-	-	0	-	-	455	-	-	423
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	788	-	-	0	-	-	0	0	552	0	0	579
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	787	-	-	-	-	-	-	-	552	-	-	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	11.6	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	552	787	-	-	-	-	578
HCM Lane V/C Ratio	0.006	0.047	-	-	-	-	0.133
HCM Control Delay (s)	11.6	9.8	-	-	-	-	12.2
HCM Lane LOS	B	A	-	-	-	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	-	-	0.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	122	280	55	108	21	207	271	40	39	582	249
Future Volume (veh/h)	201	122	280	55	108	21	207	271	40	39	582	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
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	212	128	295	58	114	22	218	285	42	41	613	262
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	262	296	399	213	215	41	335	855	709	56	732	612
Arrive On Green	0.15	0.16	0.16	0.12	0.14	0.14	0.10	0.46	0.46	0.03	0.39	0.39
Sat Flow, veh/h	1781	1870	1550	1781	1523	294	3456	1870	1552	1781	1870	1564
Grp Volume(v), veh/h	212	128	295	58	0	136	218	285	42	41	613	262
Grp Sat Flow(s),veh/h/ln	1781	1870	1550	1781	0	1817	1728	1870	1552	1781	1870	1564
Q Serve(g_s), s	8.2	4.4	7.5	2.1	0.0	4.9	4.3	6.9	0.6	1.6	21.1	8.7
Cycle Q Clear(g_c), s	8.2	4.4	7.5	2.1	0.0	4.9	4.3	6.9	0.6	1.6	21.1	8.7
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	262	296	399	213	0	256	335	855	709	56	732	612
V/C Ratio(X)	0.81	0.43	0.74	0.27	0.00	0.53	0.65	0.33	0.06	0.74	0.84	0.43
Avail Cap(c_a), veh/h	515	1023	1001	389	0	866	1315	1603	1330	226	1128	943
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	27.0	10.3	28.4	0.0	28.3	30.9	12.3	3.4	34.1	19.6	15.8
Incr Delay (d2), s/veh	5.9	1.0	2.7	0.7	0.0	1.7	2.1	0.2	0.0	17.1	3.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	1.9	3.0	0.9	0.0	2.1	1.8	2.5	0.3	0.9	8.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	28.0	13.0	29.1	0.0	30.0	33.0	12.6	3.4	51.2	23.0	16.3
LnGrp LOS	D	C	B	C	A	C	C	B	A	D	C	B
Approach Vol, veh/h		635			194			545			916	
Approach Delay, s/veh		23.4			29.7			20.0			22.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	15.4	10.9	32.0	13.9	14.2	6.2	36.6
Change Period (Y+Rc), s	* 4.2	* 4.2	4.0	* 4.2	3.5	* 4.2	4.0	* 4.2
Max Green Setting (Gmax), s	* 16	* 39	27.0	* 43	20.5	* 34	9.0	* 61
Max Q Clear Time (g_c+I1), s	4.1	9.5	6.3	23.1	10.2	6.9	3.6	8.9
Green Ext Time (p_c), s	0.1	1.7	0.7	4.7	0.4	0.7	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

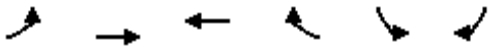
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	653	0	0	1049	813	480
Future Volume (veh/h)	653	0	0	1049	813	480
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	687	0	0	1104	856	505
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1476	0	0	1476	1384	635
Arrive On Green	0.42	0.00	0.00	0.42	0.40	0.40
Sat Flow, veh/h	3741	0	0	3741	3456	1585
Grp Volume(v), veh/h	687	0	0	1104	856	505
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1585
Q Serve(g_s), s	7.6	0.0	0.0	14.3	10.7	15.2
Cycle Q Clear(g_c), s	7.6	0.0	0.0	14.3	10.7	15.2
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1476	0	0	1476	1384	635
V/C Ratio(X)	0.47	0.00	0.00	0.75	0.62	0.80
Avail Cap(c_a), veh/h	1965	0	0	1965	1911	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	0.0	0.0	13.5	13.0	14.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.1	0.5	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0	4.6	3.3	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.7	0.0	0.0	14.6	13.4	17.9
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	687			1104	1361	
Approach Delay, s/veh	11.7			14.6	15.1	
Approach LOS	B			B	B	

Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		26.7		27.5		27.5
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0		30.0		30.0
Max Q Clear Time (g_c+I1), s		17.2		9.6		16.3
Green Ext Time (p_c), s		4.5		4.4		6.2

Intersection Summary		
HCM 6th Ctrl Delay	14.2	
HCM 6th LOS	B	



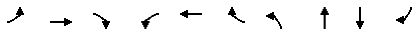
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	1147	417	0	241	184
Future Volume (veh/h)	0	1147	417	0	241	184
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1207	439	0	254	194
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1838	1838	0	389	346
Arrive On Green	0.00	0.52	0.52	0.00	0.22	0.22
Sat Flow, veh/h	0	3741	3741	0	1781	1585
Grp Volume(v), veh/h	0	1207	439	0	254	194
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	9.4	2.6	0.0	4.9	4.1
Cycle Q Clear(g_c), s	0.0	9.4	2.6	0.0	4.9	4.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1838	1838	0	389	346
V/C Ratio(X)	0.00	0.66	0.24	0.00	0.65	0.56
Avail Cap(c_a), veh/h	0	2819	2819	0	1413	1257
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	5.0	0.0	13.5	13.2
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.0	1.9	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.4	0.0	1.6	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	5.1	0.0	15.3	14.6
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		1207	439		448	
Approach Delay, s/veh		7.1	5.1		15.0	
Approach LOS		A	A		B	

Timer - Assigned Phs			4		6	8
Phs Duration (G+Y+Rc), s			24.6		13.3	24.6
Change Period (Y+Rc), s			5.0		5.0	5.0
Max Green Setting (Gmax), s			30.0		30.0	30.0
Max Q Clear Time (g_c+I1), s			11.4		6.9	4.6
Green Ext Time (p_c), s			8.2		1.3	2.8

Intersection Summary		
HCM 6th Ctrl Delay		8.4
HCM 6th LOS		A

1: Shiloh Rd & Hembree Ln

05/13/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	455	675	35	48	725	132	39	17	245	535
v/c Ratio	0.82	0.64	0.04	0.49	0.90	0.18	0.26	0.11	0.82	0.73
Control Delay	62.4	22.6	0.7	76.5	46.1	8.4	56.9	32.1	71.8	17.0
Queue Delay	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	23.8	0.7	76.5	46.1	8.4	56.9	32.1	71.8	17.0
Queue Length 50th (ft)	182	346	0	38	502	16	30	5	190	120
Queue Length 95th (ft)	#323	623	4	#102	#902	63	66	27	#395	229
Internal Link Dist (ft)		297			320			686	1022	
Turn Bay Length (ft)	300		100	160			200			
Base Capacity (vph)	594	1157	1007	102	942	835	366	356	321	756
Starvation Cap Reductn	0	261	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.75	0.03	0.47	0.77	0.16	0.11	0.05	0.76	0.71

Intersection Summary

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

3: Old Redwood Hwy & Shiloh Rd

05/13/2022



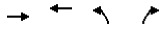
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	212	128	295	58	136	218	285	42	41	613	262
v/c Ratio	0.73	0.43	0.52	0.19	0.51	0.56	0.32	0.05	0.34	0.83	0.38
Control Delay	58.5	49.5	9.7	37.9	46.2	51.6	20.8	0.1	58.5	41.6	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	49.5	9.7	37.9	46.2	51.6	20.8	0.1	58.5	41.6	14.3
Queue Length 50th (ft)	131	81	32	32	82	71	119	0	26	354	54
Queue Length 95th (ft)	#298	166	73	75	147	131	252	0	73	#789	164
Internal Link Dist (ft)		1259			694		846			700	
Turn Bay Length (ft)	375			120		200		95	130		85
Base Capacity (vph)	335	669	758	340	573	857	1048	914	147	738	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.19	0.39	0.17	0.24	0.25	0.27	0.05	0.28	0.83	0.38

Intersection Summary

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

4: US 101 NB Off-ramp & Shiloh Rd

05/13/2022

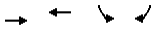


Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	687	1104	856	505
v/c Ratio	0.47	0.76	0.66	0.74
Control Delay	13.9	18.8	17.5	19.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	18.8	17.5	19.0
Queue Length 50th (ft)	87	166	126	111
Queue Length 95th (ft)	151	275	195	232
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)			265	
Base Capacity (vph)	1856	1856	1800	891
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.37	0.59	0.48	0.57

Intersection Summary

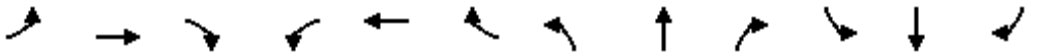
5: Shiloh Rd & US 101 SB Off-ramp

05/13/2022



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1207	439	254	194
v/c Ratio	0.69	0.25	0.55	0.35
Control Delay	11.6	7.2	20.8	5.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.6	7.2	20.8	5.0
Queue Length 50th (ft)	115	31	60	0
Queue Length 95th (ft)	217	64	129	37
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	2252	2252	1126	1074
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.19	0.23	0.18

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	888	846	41	68	620	239	58	10	12	294	10	671
Future Volume (veh/h)	888	846	41	68	620	239	58	10	12	294	10	671
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		0.99	1.00		1.00	1.00		0.99
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	906	863	42	69	633	244	59	10	12	300	10	685
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	945	1084	919	88	666	556	85	37	44	315	10	718
Arrive On Green	0.27	0.58	0.58	0.05	0.36	0.36	0.05	0.05	0.05	0.18	0.18	0.18
Sat Flow, veh/h	3456	1870	1585	1781	1870	1564	1781	774	929	1726	58	1562
Grp Volume(v), veh/h	906	863	42	69	633	244	59	0	22	310	0	685
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1564	1781	0	1703	1784	0	1562
Q Serve(g_s), s	29.7	41.5	1.3	4.4	38.0	13.7	3.8	0.0	1.4	19.8	0.0	21.0
Cycle Q Clear(g_c), s	29.7	41.5	1.3	4.4	38.0	13.7	3.8	0.0	1.4	19.8	0.0	21.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.55	0.97		1.00
Lane Grp Cap(c), veh/h	945	1084	919	88	666	556	85	0	81	325	0	718
V/C Ratio(X)	0.96	0.80	0.05	0.78	0.95	0.44	0.69	0.00	0.27	0.95	0.00	0.95
Avail Cap(c_a), veh/h	945	1174	995	101	768	642	371	0	355	325	0	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	18.9	10.4	54.1	36.1	28.3	54.0	0.0	52.9	46.6	0.0	30.3
Incr Delay (d2), s/veh	19.8	3.2	0.0	28.7	19.0	0.2	9.7	0.0	1.8	37.2	0.0	22.6
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	14.8	17.2	0.4	2.6	20.0	5.0	1.9	0.0	0.6	12.0	0.0	21.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	22.1	10.5	82.9	55.2	28.5	63.7	0.0	54.7	83.8	0.0	52.9
LnGrp LOS	E	C	B	F	E	C	E	A	D	F	A	D
Approach Vol, veh/h		1811			946			81			995	
Approach Delay, s/veh		41.3			50.3			61.3			62.5	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	71.5		25.0	35.0	45.7		9.5				
Change Period (Y+Rc), s	3.5	* 4.7		4.0	3.5	* 4.7		4.0				
Max Green Setting (Gmax), s	6.5	* 72		21.0	31.5	* 47		24.0				
Max Q Clear Time (g_c+I1), s	6.4	43.5		23.0	31.7	40.0		5.8				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	1.0		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		49.5	
HCM 6th LOS		D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

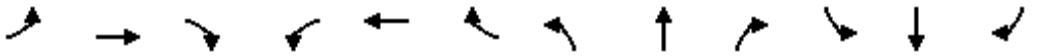
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	70	1096	20	0	833	34	0	0	9	0	0	94
Future Vol, veh/h	70	1096	20	0	833	34	0	0	9	0	0	94
Conflicting Peds, #/hr	2	0	0	0	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	1118	20	0	850	35	0	0	9	0	0	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	887	0	0	-	-	0	-	-	569	-	-	445
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	759	-	-	0	-	-	0	0	465	0	0	561
Stage 1	-	-	-	0	-	-	0	0	-	0	0	-
Stage 2	-	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	758	-	-	-	-	-	-	-	465	-	-	560
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	12.9	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	465	758	-	-	-	-	560
HCM Lane V/C Ratio	0.02	0.094	-	-	-	-	0.171
HCM Control Delay (s)	12.9	10.2	-	-	-	-	12.8
HCM Lane LOS	B	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	-	-	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	99	558	52	89	30	327	505	26	17	557	233
Future Volume (veh/h)	283	99	558	52	89	30	327	505	26	17	557	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
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	289	101	569	53	91	31	334	515	27	17	568	238
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	527	639	93	210	72	441	865	718	28	655	548
Arrive On Green	0.18	0.28	0.28	0.05	0.16	0.16	0.13	0.46	0.46	0.02	0.35	0.35
Sat Flow, veh/h	1781	1870	1551	1781	1334	454	3456	1870	1552	1781	1870	1564
Grp Volume(v), veh/h	289	101	569	53	0	122	334	515	27	17	568	238
Grp Sat Flow(s),veh/h/ln	1781	1870	1551	1781	0	1789	1728	1870	1552	1781	1870	1564
Q Serve(g_s), s	13.9	3.6	20.4	2.6	0.0	5.4	8.2	18.0	0.6	0.8	25.0	10.3
Cycle Q Clear(g_c), s	13.9	3.6	20.4	2.6	0.0	5.4	8.2	18.0	0.6	0.8	25.0	10.3
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	527	639	93	0	282	441	865	718	28	655	548
V/C Ratio(X)	0.88	0.19	0.89	0.57	0.00	0.43	0.76	0.60	0.04	0.62	0.87	0.43
Avail Cap(c_a), veh/h	413	822	884	313	0	684	1056	1287	1068	182	906	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	24.1	11.7	40.9	0.0	33.6	37.2	17.6	6.8	43.2	26.8	22.0
Incr Delay (d2), s/veh	16.2	0.2	8.6	5.3	0.0	1.0	2.7	0.7	0.0	20.4	6.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	1.5	7.3	1.2	0.0	2.3	3.5	7.1	0.3	0.5	11.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	24.2	20.3	46.2	0.0	34.7	39.9	18.3	6.9	63.7	33.5	22.5
LnGrp LOS	D	C	C	D	A	C	D	B	A	E	C	C
Approach Vol, veh/h		959			175			876			823	
Approach Delay, s/veh		30.1			38.2			26.2			30.9	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	29.1	15.3	35.1	19.8	18.1	5.4	45.0
Change Period (Y+Rc), s	* 4.2	* 4.2	4.0	* 4.2	3.5	* 4.2	4.0	* 4.2
Max Green Setting (Gmax), s	* 16	* 39	27.0	* 43	20.5	* 34	9.0	* 61
Max Q Clear Time (g_c+I1), s	4.6	22.4	10.2	27.0	15.9	7.4	2.8	20.0
Green Ext Time (p_c), s	0.1	2.5	1.0	3.9	0.4	0.6	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Notes

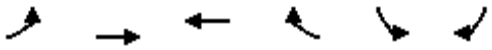
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	895	0	0	901	694	893
Future Volume (veh/h)	895	0	0	901	694	893
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	0	0	1870	1870	1870
Adj Flow Rate, veh/h	913	0	0	919	708	911
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	0	0	2	2	2
Cap, veh/h	1228	0	0	1228	1696	778
Arrive On Green	0.35	0.00	0.00	0.35	0.49	0.49
Sat Flow, veh/h	3741	0	0	3741	3456	1585
Grp Volume(v), veh/h	913	0	0	919	708	911
Grp Sat Flow(s),veh/h/ln	1777	0	0	1777	1728	1585
Q Serve(g_s), s	13.8	0.0	0.0	14.0	8.0	30.0
Cycle Q Clear(g_c), s	13.8	0.0	0.0	14.0	8.0	30.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1228	0	0	1228	1696	778
V/C Ratio(X)	0.74	0.00	0.00	0.75	0.42	1.17
Avail Cap(c_a), veh/h	1744	0	0	1744	1696	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	0.0	17.7	10.0	15.6
Incr Delay (d2), s/veh	1.1	0.0	0.0	1.1	0.2	90.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	0.0	5.0	2.4	27.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	0.0	0.0	18.8	10.1	106.0
LnGrp LOS	B	A	A	B	B	F
Approach Vol, veh/h	913			919	1619	
Approach Delay, s/veh	18.7			18.8	64.1	
Approach LOS	B			B	E	

Timer - Assigned Phs		2		4			8
Phs Duration (G+Y+Rc), s		35.0		26.1			26.1
Change Period (Y+Rc), s		5.0		5.0			5.0
Max Green Setting (Gmax), s		30.0		30.0			30.0
Max Q Clear Time (g_c+I1), s		32.0		15.8			16.0
Green Ext Time (p_c), s		0.0		5.2			5.2

Intersection Summary		
HCM 6th Ctrl Delay	40.0	
HCM 6th LOS	D	



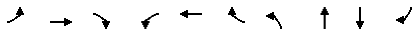
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Volume (veh/h)	0	768	1067	0	324	94
Future Volume (veh/h)	0	768	1067	0	324	94
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	784	1089	0	331	96
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1702	1702	0	456	406
Arrive On Green	0.00	0.48	0.48	0.00	0.26	0.26
Sat Flow, veh/h	0	3741	3741	0	1781	1585
Grp Volume(v), veh/h	0	784	1089	0	331	96
Grp Sat Flow(s),veh/h/ln	0	1777	1777	0	1781	1585
Q Serve(g_s), s	0.0	5.6	8.7	0.0	6.4	1.8
Cycle Q Clear(g_c), s	0.0	5.6	8.7	0.0	6.4	1.8
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1702	1702	0	456	406
V/C Ratio(X)	0.00	0.46	0.64	0.00	0.73	0.24
Avail Cap(c_a), veh/h	0	2828	2828	0	1418	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.6	7.4	0.0	12.8	11.1
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.0	2.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.8	0.0	2.1	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.8	7.8	0.0	15.0	11.4
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h		784	1089		427	
Approach Delay, s/veh		6.8	7.8		14.2	
Approach LOS		A	A		B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	23.1	14.6	23.1
Change Period (Y+Rc), s	5.0	5.0	5.0
Max Green Setting (Gmax), s	30.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	7.6	8.4	10.7
Green Ext Time (p_c), s	5.3	1.2	7.4

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

1: Shiloh Rd & Hembree Ln

05/13/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	906	863	42	69	633	244	59	22	310	685
v/c Ratio	1.09	0.83	0.05	0.78	0.93	0.36	0.38	0.14	1.08	0.84
Control Delay	101.6	31.8	1.5	109.3	60.3	12.0	60.7	33.5	124.6	24.8
Queue Delay	0.0	29.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	61.4	1.5	109.3	60.3	12.0	60.7	33.5	124.6	24.8
Queue Length 50th (ft)	~427	546	0	57	491	42	47	8	~282	220
Queue Length 95th (ft)	#650	#1005	9	#159	#859	125	91	34	#533	#463
Internal Link Dist (ft)		297			320			686	1022	
Turn Bay Length (ft)	300		100	160			200			
Base Capacity (vph)	834	1040	911	88	680	672	327	326	288	815
Starvation Cap Reductn	0	218	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	1.05	0.05	0.78	0.93	0.36	0.18	0.07	1.08	0.84

Intersection Summary

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

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

3: Old Redwood Hwy & Shiloh Rd

05/13/2022



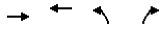
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	289	101	569	53	122	334	515	27	17	568	238
v/c Ratio	0.96	0.36	0.86	0.18	0.51	0.54	0.52	0.03	0.17	0.86	0.37
Control Delay	91.7	55.1	30.9	42.0	50.4	47.4	21.7	0.1	61.5	50.1	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.7	55.1	30.9	42.0	50.4	47.4	21.7	0.1	61.5	50.1	15.6
Queue Length 50th (ft)	218	74	159	34	80	113	194	0	12	392	54
Queue Length 95th (ft)	#496	148	#366	75	141	192	497	0	41	#784	154
Internal Link Dist (ft)		1259			694		846			700	
Turn Bay Length (ft)	375		135	120		200		95	130		85
Base Capacity (vph)	302	601	723	329	512	772	1001	877	132	663	639
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.17	0.79	0.16	0.24	0.43	0.51	0.03	0.13	0.86	0.37

Intersection Summary

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

4: US 101 NB Off-ramp & Shiloh Rd

05/13/2022



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	913	919	708	911
v/c Ratio	0.72	0.73	0.45	1.20
Control Delay	20.8	21.0	13.3	123.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.8	21.0	13.3	123.7
Queue Length 50th (ft)	154	156	90	~437
Queue Length 95th (ft)	213	215	155	#723
Internal Link Dist (ft)	1174	123	729	
Turn Bay Length (ft)			265	
Base Capacity (vph)	1620	1620	1572	758
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.57	0.45	1.20

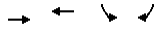
Intersection Summary

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

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

5: Shiloh Rd & US 101 SB Off-ramp

05/13/2022



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	784	1089	331	96
v/c Ratio	0.49	0.69	0.61	0.19
Control Delay	10.6	13.2	20.2	10.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	13.2	20.2	10.2
Queue Length 50th (ft)	72	114	76	12
Queue Length 95th (ft)	142	219	168	43
Internal Link Dist (ft)	768	1174	718	
Turn Bay Length (ft)				270
Base Capacity (vph)	2244	2244	1122	1016
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.30	0.09

Intersection Summary



about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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