CONNECT THE COASTSIDE

San Mateo County Midcoast Comprehensive Transportation Management Plan

Draft

This Public Working Draft of Connect the Coastside and will be subject to extensive public review. The Public Working Draft of Connect the Coastside is available at the Planning and Building Website: https://planning.smcgov.org/connect-coastside

COUNTY OF SAN MATEO

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1 CONNECT THE COASTSIDE EXECUTIVE SUMMARY

1.1 Project Summary

San Mateo County prepared ***Connect the Coastside,*** a Comprehensive Transportation Management Plan (CTMP) to improve safety and mobility for residents, businesses and visitors. The plan focuses on the areas surrounding Highway 1 and State Route 92, including the unincorporated communities of Montara, Moss Beach, El Granada, Princeton and Miramar, as well as the City of Half Moon Bay (See **Figure 1**). Connect the Coastside identifies and prioritizes a diverse range of road, highway and trail improvements, which address the present and future mobility needs of Coastside communities. The plan seeks to:

- Improve existing traffic conditions and public safety
- Expand transportation choices for residents and visitors
- Encourage environmentally friendly options that reduce car trips, such as walking, biking and public transit
- Respect the character of Midcoast communities and protect coastal resources
- Maintain and improve access to coastal resources for both residents and visitors

Figure 1. San Mateo Connect the Coastside Planning Area

The plan also helps Coastside communities be better prepared to meet future transportation needs. As new development occurs, additional transportation improvements will be constructed to address traffic impacts. This plan includes new land use policies that will also help reduce traffic, protect natural resources and preserve coastal community character by limiting development.

The California Coastal Act and the County's certified Local Coastal Program (LCP) directs the County to "protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources." Connect the Coastside will inform the County's implementation of the public works and land use components of its Local Coastal Program and outlines the partnerships that will be necessary to achieve these improvements. This plan will be the vehicle to apply for funding for priority projects.

Connect the Coastside was developed through an extended public process, building on the community-based Highway 1 Safety and Mobility Studies (Phases 1 and 2) conducted between 2009 and 2012. Working with a consultant team, County staff conducted several public workshops, consulted frequently with a Technical Advisory Committee and met regularly with staff and decision makers from the City of Half Moon Bay. The planning team also conducted a virtual survey and presented frequently to the Midcoast Community Council to develop Connect the Coastside. Thank you to all those who contributed to the plan's development and helped provide feedback.

San Mateo County looks forward to working with community members, local organizations and partner agencies to see that the goals of Connect the Coastside are met.

1.2 Project Area

The project area for Connect the Coastside includes unincorporated San Mateo County along Highway 1 and the coastline between Devil's Slide and the northern border of Half Moon Bay – the area covered by the Midcoast LCP. The study area, illustrated in **Figure 1**, includes the unincorporated part of the county along State Route 92 (SR-92) between Half Moon Bay and Interstate 280. The project also considered traffic delays and key intersections in the City of Half Moon Bay, along with future development within the City. Connect the Coastside will guide the County's transportation plans for the unincorporated part of the study area.

1.3 Planning Context & Relationship to Other Plans

Mobility and multiple transportation options are a priority for people who live and work on San Mateo County's Coastside. High levels of traffic from visitors and commuters has a negative impact on quality of life. Options for bicycling and walking are limited, as is transit service. This limits Midcoast residents' transportation choices and makes traffic worse by encouraging driving.

Transportation improvements on the Midcoast are informed by the County's General Plan and the County's certified Local Coastal Program. The proposals in Connect the Coastside were evaluated and found to be consistent with these broad policies. Connect the Coastside supports previously identified goals to encourage walking, bicycling, and transit use, while reducing auto trips. Connect the Coastside will also facilitate implementation of Plan Princeton, a land use and shoreline management plan for the Princeton-by-the-Sea community. Although Plan Princeton does not envision a substantial increase in development, it could trigger redevelopment – adding to the need for the improvements outlined in the Connect the Coastside plan.

Connect the Coastside is one of several County efforts to improve mobility on the Midcoast. From 2009-2012, San Mateo County conducted the Highway 1 Safety and Mobility Improvement Study, a two-phase public participatory planning effort. The study developed conceptual plans to improve safety and mobility on Highway 1 between Half Moon Bay and Devil's Slide. Phase 1, completed in February 2010, focused on Highway 1 from Half Moon Bay Airport south to Frenchman's Creek Road, including Pillar Point Harbor, Princeton, and the communities of El Granada and Miramar. Phase 2, conducted during Spring and

Summer 2011 in Moss Beach and Montara, evaluated an approximately 5.5-mile segment of Highway 1 from Half Moon Bay Airport through the Devil's Slide improvement project.

In 2011, the Board of Supervisors adopted substantial amendments to its Local Coastal Program regarding the Midcoast. As part of Coastal Commission certification of these amendments, policy 2.53 was incorporated into the LCP. This policy called for preparation of a comprehensive transportation management plan to address the cumulative impacts of Midcoast development, including the expansion of public transit, consideration of mandatory lot mergers and an in-lieu fee traffic mitigation program.

Implementation of many of the initiatives in Connect the Coastside relies on active partnerships between the County and Caltrans. Most of the roadway improvements and significant segments of the Multi-modal Trail called for in Connect the Coastside will be constructed within Caltrans' right of way. The County will need Caltrans' assistance for design, planning, funding and constructing these improvements.

Connect the Coastside will also rely on a partnership with SamTrans, the transit agency for San Mateo County. SamTrans provides bus service to the Coastside and broader county community. Any expansion of transit service will require investments by SamTrans in vehicles, maintenance and labor. In addition, SamTrans is currently conducting "Reimagine SamTrans," a planning effort that could yield recommendations for improvements to Coastside service.

Connect the Coastside was developed over a five-year period – from late 2014 through 2019 – and is based on accurate traffic data and reasonable projections. Although the study is based on traffic data gathered in 2014, the data provides an accurate snapshot of existing conditions and helps to inform other aspects of the plan, such as projected development and mobility deficiencies.

1.4 Project Vision

The original objectives of Connect the Coastside were based on the requirements described in LCP Policy 2.53. Based on input from community members and stakeholders gathered at public workshops and meetings, a shared project vision has evolved. The resulting Connect the Coastside vision statement and goals were created from a combination of the requirements for LCP Policy 2.53, feedback from Midcoast community members, and the findings of the Highway 1 Safety and Mobility Improvement Study.

1.4.1 Vision Statement

Create a safe and functional multi-modal transportation system that preserves the existing character of the Midcoast, serves both Coastside residents and visitors and accommodates existing and anticipated future traffic.

1.4.2 Goals & Objectives

The broad goals of Connect the Coast are listed below, each followed by specific objectives. The goals set the general direction of this plan and describe the community's preferred future. The objectives describe specific measurable steps that contribute to reaching the goal.

Goal 1 Improve existing traffic and roadway conditions on the Midcoast.

> **Objective 1.1** Identify existing trouble spots on the Midcoast roadway system and propose mitigation measures.

Goal 2 Lessen the cumulative traffic impacts from future development on the Midcoast.

Objective 2.1 Evaluate the likely development potential of the Midcoast to identify future impacts to the transportation system and propose measures to offset those impacts.

Objective 2.2 Evaluate the feasibility of developing an in-lieu fee traffic mitigation program so projects can pay to offset traffic impacts.

Objective 2.3 Evaluate the development of a mandatory lot merger program that would reduce development potential by merging adjacently-owned substandard lots.

Objective 2.4 Evaluate the implementation of a lot retirement program for subdivisions to reduce development potential.

Goal 3 Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic.

Objective 3.1 Propose pedestrian infrastructure projects that address safety and circulation concerns, while meeting relevant performance standards.

Objective 3.2 Propose bicycle infrastructure projects that address safety and circulation concerns, while meeting relevant performance standards.

Objective 3.3 Identify potential improvements to transit service and bus stops on the Midcoast.

Goal 4: Respect the character of Midcoast communities and protect coastal resources.

Objective 4.1 Integrate community input into plan proposals.

Objective 4.2 Ensure improvements do not detract from the visual character of Midcoast communities.

Goal 5: Maintain and improve access to coastal resources for both residents and visitors.

Objective 5.1 Identify popular Coastside destinations with access issues and propose solutions to improve access.

Objective 5.2 Evaluate project ideas for enhanced shoreline public access.

1.5 Guiding Principles

Several existing community plans and regulatory frameworks have guided the creation of Connect the Coastside, including the:

- California Coastal Act
- San Mateo County Local Coastal Program
- San Mateo County General Plan
- Montara - Moss Beach - El Granada Community Plan
- Highway 1 Safety and Mobility Study

The implementation of Connect the Coastside will continue to be guided by the principles and policies contained in these planning documents.

The *California Coastal Act* contains basic goals that call for protection of the coastal zone environment and maximum public access to the coast. The Coastal Act further recognizes that the public has a right to fully participate in decisions affecting coastal planning and development, and that the planning and

implementation of programs for coastal development should include the widest opportunity for public participation. Recognizing that public understanding and support is important for the success of any planning effort, a guiding principle of the Connect the Coast process was to follow a robust public outreach strategy and incorporate feedback from the public throughout the process.

The *Local Coastal Program (LCP)* contains Policy 2.53, which was the original stimulus for Connect the Coastside. Policy 2.53 requires the development of a comprehensive transportation management plan to address the cumulative traffic impacts of development on the Midcoast:

> *2.53 Transportation Management Plan*
>
> *Develop a comprehensive transportation management plan to address the cumulative traffic impacts of residential development, including single-family, two-family, multi-family, and second dwelling units, on roads and highways in the entire Midcoast, including the City of Half Moon Bay. The plan shall be based on the results of an analysis that identifies the total cumulative traffic impact of projected new development at LCP buildout and shall propose specific LCP policies designed to offset the demand for all new vehicle trips generated by new residential development on Highway 1, Highway 92, and relevant local streets, during commuter peak periods and peak recreation periods; and policies for new residential development to mitigate for residential development's significant adverse cumulative impacts on public access to the beaches of the Midcoast region of San Mateo County.*
>
> *The plan shall thoroughly evaluate the feasibility of developing an in-lieu fee traffic mitigation program, the expansion of public transit, including buses and shuttles, and development of a mandatory lot merger program.*

The LCP also includes multiple other related policies, such as those requiring the phased development of public works facilities and requiring every new public works facility or expansion of capacity to go through the coastal development review process. The LCP also limits the expansion of roadway capacity to what is needed to accommodate commuter peak period traffic when buildout of the Land Use Plan occurs. The projects recommended in Connect the Coastside must conform to the Local Coastal Program, so an understanding of the policies of the LCP is important for the creation and implementation of this plan.

The *County of San Mateo General Plan* contains multiple policies related to transportation, including goals for the safe, efficient, and convenient movement of people and for complete streets that create a multimodal transportation system. The General Plan also has a specific policy to "seek methods to mitigate the impact of peak recreational traffic to and along the Coastside" (12.18 Recreational Traffic to the Coastside). The Montara - Moss Beach - El Granada Community Plan is an area plan that is considered part of the General Plan. It includes goals and objectives that direct the development of a road system that is compatible with the small-town character of the Midcoast community.

The *2009 and 2012 Highway 1 Safety and Mobility Studies* used an intensive community-based planning process to engage residents and stakeholders in developing transportation improvement strategies for the Midcoast. Therefore, it was important to consider the goals and findings of the Safety and Mobility Study in the Connect the Coastside plan. The goals of the study included increased safety, more transportation options, efficient traffic circulation, and consideration of both the natural and built contexts.

1.6 Community Input and Engagement

Stakeholder outreach was a critical part of the planning process, to ensure oversight for the assumptions, results of analysis, and final recommendations of the project. Each project deliverable was produced with considerable input from a Technical Advisory Committee, the Midcoast Community Council, an online public survey and public workshops.

Connect the Coastside also builds on the community outreach that informed the Highway 1 Safety and Mobility Study. This community-based process developed many of the ideas for transportation improvements included in Connect the Coastside. Community members provided input on Connect the Coastside by attending public workshops and presentations to the Midcoast Community Council, the Planning Commission and Board of Supervisors. In addition, an online survey was conducted to provide community members multiple ways to comment.

To engage specific stakeholders, the County formed a Technical Advisory Committee. Members of the committee met six times during the course of the project to provide input. The Technical Advisory Committee included representatives from transportation, infrastructure and public safety agencies, schools, businesses and community organizations. Members reviewed and helped refine plan proposals prior to public meetings and workshops.

Community input was instrumental in shaping the proposals in the plan. In addition to the community ideas from the Highway 1 Safety and Mobility Study, community ideas incorporated in Connect the Coastside include new transportation performance standards that avoid widening of Highway 1, a preference for roundabouts for any new intersection control, maintaining flexibility in the location of pedestrian crossings, limiting paving of the Coastal Trail, park and ride lots for transit riders, and additional transit service on weekdays and weekends.

1.7 Summary of Key Improvements

Connect the Coastside aims to improve transportation safety and mobility for Coastside residents by:

- Increasing transportation choices
- Making travel safer for pedestrians and cyclists
- Improving traffic flow at bottlenecks
- Increasing use of public transit

The transportation investments outlined in Connect the Coastside address the present and future mobility needs of Coastside communities. Near-term projects will increase transportation choices for residents and visitors. Bike lanes, trail improvements and crossings will make it easier and safer for people to walk or take their bike. Investments in bus stops and expanded weekend bus service will help reduce traffic and encourage people to take public transit. Traffic calming, turn lanes, and intersection improvements will make roadways safer and less congested.

The plan also ensures that Coastside communities are better prepared to meet future transportation needs. As new development occurs, additional transportation improvements will be constructed to address traffic impacts. New land use policies will also help reduce traffic and preserve coastal community character by limiting development. Lot mergers and lot retirements will concentrate development, helping to protect natural resources and preserve open space. A new traffic fee mitigation program would collect money from new Coastside development to help pay for future transportation improvements.

1.7.1 Infrastructure Improvements

Several infrastructure improvements for each mode were selected from a list of potential improvements compiled from the Technical Advisory Committee and community-suggested improvements, proposed projects identified in recent, relevant reports, as well as improvements suggested by the consultant team to address identified deficiencies. The final list of improvements in **Table 1** below were selected based on their feasibility, cost, ability to address deficiencies, and consistency with the LCP, including environmental considerations.

The following improvements will have the greatest impact on current traffic and safety conditions:

- Moss Beach corridor roundabouts
- Pedestrian crossings throughout the study area
- The Multi-modal Trail
- Increased transit service
- Transit-related park-and-ride lots

Connect the Coastside will enhance the quality of life for Coastside residents by making it safer for pedestrians to cross Highway 1, slowing traffic in Moss Beach through the installation of roundabouts, and installing acceleration lanes at key parking sites and intersections.

The plan will improve access to beaches and coastal recreational opportunities through proposed parking and coastal trail improvements, left turn pockets on SR-92, and the Multi-modal trail. Expanded transit service and roadway improvements would also help improve traffic flow on weekends for residents and visitors alike. The improvements in each community are specified in **Table 1**.

Table 1. Infrastructure Improvements Identified in Connect the Coastside

Mode	Project Name	Location	Project Source[1]
Roadways	Gray Whale Cove Turn and Acceleration Lanes	Midcoast	Highway 1 Safety and Mobility Improvement Study and Highway 1 Congestion & Safety Improvement Project
	SR-1 Side-Street Stop Signs	El Granada	Connect the Coastside
	SR-1 Shoulder Treatment (Village Zones)	El Granada	Highway 1 Safety and Mobility Improvement Study
	SR-1 Shoulder Treatment (Fringe Zones)	El Granada	Highway 1 Safety and Mobility Improvement Study
	California Avenue Intersection Control (Signal or Roundabout)	Moss Beach	Connect the Coastside
	Cypress Avenue Intersection Control (Signal or Roundabout)	Moss Beach	Big Wave and Connect the Coastside deficiency
	16th Street Roundabout	Moss Beach	Cypress Point Development
	Carlos Street Terminus Realignment	Moss Beach	
	SR-92/SR-35 Roundabout	SMC	Connect the Coastside
	Carlos Street Traffic Calming	Moss Beach	Highway 1 Safety and Mobility Improvement Study
	Main Street Traffic Calming	Montara	
	SR-92 Passing/Climbing Lanes	Unincorporated	Connect the Coastside
	SR-92 Truck Signs	SMC	Connect the Coastside
	SR-92 Left Turn Lanes	SMC	

[1] Project Source identifies the public study or planning report from which each proposed project concept was developed.

Table 2. (cont.) Infrastructure Improvements Identified in Connect the Coastside

Mode	Project Name	Location	Project Source
Pedestrian	Striped Pedestrian Crossing with Beacons	Various	Highway 1 Safety and Mobility Improvement Study
	SR-1 Multi-modal Trail	El Granada and Moss Beach	Highway 1 Safety and Mobility Improvement Study
	SR-1 Multi-modal Trail	Moss Beach, El Granada, Half Moon Bay	
	SR-1 Multi-modal Trail	El Granada, Half Moon Bay, Montara, Moss Beach	
	Coronado Street and Obispo Road Sidewalk	El Granada	Connect the Coastside
	Coastal Trail	All	Highway 1 Safety and Mobility Improvement Study
	Bay Area Ridge Trail Crossing of SR- 92- Project Study	SR-92 at Upper SR-35 Intersection	Caltrans, County, San Francisco Public Utilities Commission
Bike	Capistrano Road Bicycle Facilities	Princeton	Highway 1 Safety and Mobility Improvement Study
	SR-92 Bike Lanes	SMC	
	SR-1 Bike Lanes	ALL	
	Airport Street Class I/II/III Bike Routes	Moss Beach	Connect the Coastside
	Bike/Ped improvements in downtown Moss Beach	Moss Beach	Connect the Coastside
Transit	Bus Stop Amenities	Various	Connect the Coastside
	Increased Weekend and Commute SamTrans Service	Various	
	Transit Stop Improvements	Moss Beach	Connect the Coastside

Table 3. (cont.) Infrastructure Improvements Identified in Connect the Coastside

Mode	Project Name	Location	Project Source
Parking	Montara State Beach Parking Lot Improvements	SMC	Coastside Access Study
	Upper Gray Whale Cove Parking Lot Improvements	SMC	
	Wayfinding	ALL	
	Carlos Street On-Street Parking	Moss Beach	Highway 1 Safety and Mobility Improvement Study
	El Granada Diagonal Parking	El Granada	Highway 1 Safety and Mobility Improvement Study Phase 1
	Park and Ride at Etheldore St (South Terminus)	Moss Beach	Highway 1 Safety and Mobility Improvement Study/ SamTrans Coastside Plan

1.8 Land Use Policies

Land use patterns have a significant impact on travel patterns. In general, the Midcoast has a predominantly low density, suburban residential settlement pattern with small commercial areas adjacent to Highway 1 in each of the Midcoast communities. This settlement pattern and a range of other factors (the configuration of local streets, the limited access provided by Highway 1 and State Route 92, the dearth of multi-modal transportation choices) encourage automobile trips. The transportation improvements envisioned in Connect the Coastside will expand mobility choices, while land use strategies to limit development can serve to reduce future traffic demand.

The lot merger program, lot retirement program and traffic fee mitigation program are strategies that can reduce future development potential, or in the case of in-lieu fees, provide a funding source for in Connect the Coastside's transportation improvements. The Midcoast community has expressed considerable support for policies that would limit future development to preserve the rural character of the Midcoast and moderate future traffic demand.

The lot merger program could reduce the development potential of existing single-family neighborhoods and result in some larger lots with more on-site, private open space. The lot retirement program will limit the development potential of rural lands on the Midcoast, preserving additional open space and natural resources. These programs support Coastal Act policies, such as concentrating development, protecting natural resources and protecting public access to coastal resources by limiting development and thereby reducing traffic.

A traffic fee mitigation program would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the amount of new development expected. In addition to helping fund improvements proposed by this plan, a traffic fee mitigation program would also serve as a potential check on development.

1.9 Conclusion

Connect the Coastside is a community-based plan containing transportation infrastructure proposals and land use policy options intended to improve mobility and safety for Coastside residents and visitors. This plan will require ongoing community engagement to refine the infrastructure proposals into detailed designs, to ensure the guiding principles for implementation are adhered to and to advocate for funding necessary to construct these improvements.

2 EXISTING CONDITIONS AND TRANSPORTATION PERFORMANCE STANDARDS

Mobility in the Study Area is provided by the roadway, bikeway, transit and trail networks. The principal roadway corridors in the Study Area include Cabrillo Highway (Highway 1), in the north-south direction and San Mateo Road (SR-92) in the east-west direction. Highway 1 and SR-92 are owned and managed by Caltrans and provide regional connections to San Francisco (north), San Mateo (east) and Santa Cruz (south). The remainder of the roadway network is comprised of two-lane County roads that range from arterials, such as Airport Street in Princeton-Moss Beach, to narrow rural lanes, such as Beach Way in Moss Beach.

The roadway network serves to connect land uses and facilitates movement of persons and goods to and from, within, and through the region, with Highway 1 and SR-92 accommodating traffic and goods movement at higher speeds and all other roadways serving neighborhoods with narrower widths and lower speeds. The roadway network provides regional and local access to coastal resources, including beaches, marine reserves, harbors, surf breaks and other destinations. The current roadway network has no formal bicycle facilities, and cyclists share the roadways with motorists. The non-motorized trail network is discontinuous and primarily serves recreational users. Transit service in the area is provided by SamTrans, with links from Half Moon Bay to north County BART stations.

Each section in this chapter begins with the performance standards used to characterize the performance for every mode and facility under both existing and projected future conditions. Next, existing conditions and deficiencies are described to set the stage for consideration of conditions under projected future development (Chapter 3), and the improvements needed to ensure that each mode of travel can meet the performance standards (Chapter 4).

Roadway standards are better developed than those for other modes. The innovative design and operating standards for bicycle and pedestrian facilities in Connect the Coastside support the creation of a safe and comprehensive network that is fully integrated with the existing roadways. The standards are based, in part, upon traffic volume thresholds and potential pedestrian and bicycle demand from nearby land use. These standards assist in the identification of desired or necessary improvements for low, medium and high priority pedestrian or bicycle mobility. Transit performance standards are based on bus capacity utilization to prioritize bus routes and bus stops and standards for bus stop amenities and improvements. Some metrics used to determine whether to provide additional service and provision of bus stop amenities may change if SamTrans adopts a new Service Policy Framework in the spring of 2020.

2.1 Automobile Operations

2.1.1 Existing Operational Standards

The existing Level of Service (LOS) standards are based upon countywide and regional standards defined in the following three documents:

- *San Mateo County Congestion Management Program* (SMC CMP)[2]

[2] San Mateo County Congestion Management Program, 2011, San Mateo City/County Council of Governments (C/CAG)

- *San Mateo County Traffic Impact Study Requirements*[3]
- *Local Coastal Program* (LCP)[4]

2.1.1.1 Intersection Level of Service

Vehicle circulation concerns relate primarily to times of peak roadway use: the commute period and weekend recreational use, outside of the significant traffic demand generated during key events. Estimates of level of service (LOS) for key intersections along Highway 1 and SR-92 are provided in **Table 7** for the Weekday AM peak period (7AM-9AM) and PM peak period (4PM-6PM) and the Weekend Midday recreational peak period (10AM-2PM) conditions based on counts taken in 2012 and 2014.

LOS analysis was conducted using the criteria described in the City/County Association of Governments (C/CAG) 2011 San Mateo County Congestion Management Program (SMC CMP) and the County's Local Coastal Program. LOS as defined in the Highway Capacity Manual (HCM) is a quality measure describing operating conditions within a traffic stream. It is generally described in such service measures terms as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. The LOS evaluation indicates the degree of congestion that occurs during peak travel periods and is the principal measure of roadway and intersection performance. LOS can range from "A" representing free-flow conditions, to "F" representing extremely long delays. LOS D is typically considered acceptable for a peak hour in urban areas. LOS E is approaching capacity and LOS F represents conditions at or above capacity. LOS definitions, considering vehicle delay for signalized and unsignalized intersections, are shown in **Table 4.**

Table 4 - Level of Service Thresholds and Definitions

Level of Service	Average Control Delay (sec/veh)		Description
	Signalized Intersections	Unsignalized Intersections[1]	
A	≤ 10	≤ 10	Free flow/Insignificant Delay
B	> 10 and ≤ 20	> 10 and ≤ 15	Stable Operation/Minimal Delay
C	> 20 and ≤ 35	> 15 and ≤ 25	Stable Operation/Acceptable Delay
D	> 35 and ≤ 55	> 25 and ≤ 35	Approaching Unstable/Tolerable Delay
E	> 55 and ≤ 80	> 35 and ≤ 50	Unstable Operation/Significant Delay
F	> 80	> 50	Forced Flow/Excessive Delay

Source: 2000 *Highway Capacity Manual, Transportation Research Board, 2000*.

Notes: [1]Worst Approach Delay (in seconds per vehicle) for Unsignalized Intersections

[3] San Mateo County Traffic Impact Study Requirements, 2013, County of San Mateo, Department of Public Works, Roadway Services

[4] County of San Mateo Local Coastal Program Policies, 2013, County of San Mateo, Planning and Building Department

2.1.1.2 Roadway Level of Service

Roadway segment analysis was conducted using the thresholds described in the City/County Association of Governments (C/CAG) Congestion Management Program. According to the SMC CMP, roadway capacity for multilane highways is assumed to be 2,200 vehicles per lane, per hour while capacity is 1,400 vehicles per lane per hour for two lane highways. Roadway segment LOS is defined based upon the peak traffic volume (v) relative to the capacity of the roadway or intersection (c). This is expressed as a v/c ratio and the amount of capacity filled by traffic volumes determines the level of service. If the demand (volume) exceeds the capacity (a v/c ratio greater than 1.0), traffic flow is unstable and excessive delay and queuing is expected. The County's LCP Transportation policy 2.43 provides that when considering roadway expansion, level of service "D" is acceptable for peak periods, and Level of Service "E" is acceptable during recreational peak periods.

2.1.1.2.1 Two Lane Highway

Additionally, the SMC CMP defines a two-lane highway as a two-lane roadway with one lane for use by traffic in each direction. Passing of slower vehicles requires use of the opposing lane. As volumes or geometric constraints increase, the ability to pass decreases and platoons of vehicles are formed, increasing the delay experienced by motorists. The LOS for two-lane highways is based on mobility.

For two-lane highways, the volume and capacity used to calculate the v/c ratio combines both directions. The capacity for two-lane roads used is 2,800 vehicles per hour (1,400 vehicles per lane per hour in each direction) The specific LOS criteria used in the SMC CMP are based on thresholds from the Highway Capacity Manual (HCM) and are shown in **Table 5.**

Table 5 - Level of Service Criteria for Two-Lane Highways

LOS	% Time Delay	Max v/c ratio[1]	Average Travel Speed[2]
A	30	0.00 – 0.04	54
B	45	0.04 – 0.16	51
C	60	0.16 – 0.32	48
D	75	0.32 – 0.57	46
E	>75	0.57 – 1.00	41
F	100	> 1.00	< 41

Sources: San Mateo County Congestion Management Program, 2011
Notes:
1. Ratio of flow rate to an ideal capacity of 2,800 passenger cars per hour in both directions.

2. Average travel speed of all vehicles for highways with design speed 60 mph; for highways with lower design speeds, reduce speed by 4 mph for each 10-mph reduction in design speed below 60 mph; assumes that speed is not restricted to lower values by regulation.

2.1.1.2.2 Multilane Highway

There are some segments along SR-92 in the study area which have more than one lane in each direction. For those segments, the level of service criteria is for each direction separately. The specific LOS criteria used in the SMC CMP are based on thresholds from the HCM as shown in **Table 6**. The capacity used for multilane highway segments is 1,100 vehicles per hour per lane and is evaluated per lane and per direction, so a four-lane highway has a 4,400 vehicle per hour total capacity.

Table 6 - Level of Service Criteria for Multi-Lane Highways

LOS	% Time Delay	Max v/c ratio[1]	Average Travel Speed[2]
A	30	0.00 – 0.30	50
B	45	0.30 – 0.50	50
C	60	0.50 – 0.70	50
D	75	0.70 – 0.84	49
E	>75	0.84 – 1.00	47
F	100	> 1.00	< 47

Sources: San Mateo County Congestion Management Program, 2011

2.1.2 Proposed Operational Standards

In some cases, the existing standards generate solutions the community does not support, so these standards are outdated and lack the necessary nuance for the constrained transportation network, and potential improvements for the Midcoast. This document proposes updated metrics that are designed to better describe the ability of the transportation system in the Midcoast to accommodate growth across all transportation modes. Using the proposed metrics, this document then provides operating and design standards that combine existing LOS standards with standards that measure mobility and accessibility as well as how non-vehicular modes interact with traffic.

The majority of intersections evaluated within the study area are unsignalized minor approach roads intersecting with Highways 1 and 92 and are controlled by stop signs for minor approaches, or are uncontrolled. Therefore, any identification of deficiency or required mitigation should balance the need of the minor street traffic with the flow of traffic along Highway 1 and SR-92. To address this, the proposed intersection standard for the Midcoast requires unsignalized intersections to meet a Caltrans signal warrant to ensure that there is sufficient volume of traffic using the minor approach to warrant additional intersection control and the associated disruption to traffic flow along Highway 1.

The existing roadway network does not provide any alternative routes to Highway 1 or SR-92 with comparable capacity. To avoid mitigations that require additional lanes to increase capacity, the proposed roadway standard for the Midcoast in Connect the Coastside is based on travel time and expressed as an index of delay, allowing for a range of mitigations which can be focused on specific trouble spots and allowing modification of the threshold for multimodal corridors.

2.1.2.1 Intersection – LOS with change in standard

Signalized intersections have a standard of LOS C with no individual movement operating at worse than LOS D as defined by the *San Mateo County Traffic Impact Study Requirements* and the County's LCP. Unsignalized intersections not meeting the LOS standard are also required to meet a Caltrans peak hour signal warrant[5] to be considered deficient.

2.1.2.2 Roadway Segment – Delay Index

Connect the Coastside evaluates traffic delay on the Highway 1 and SR-92 corridors using a Delay Index, a standard defined as the ratio of peak period travel time on a corridor to the free-flow travel time. The maximum acceptable Delay Index was set at 2.0 and calculated for the Highway 1 corridor and SR-92 corridor in the Study Area during the Weekday AM and PM commute peak hours and during the Weekend midday recreational peak hour. Under the delay index, a corridor that took 10 minutes to drive with no congestion would be deficient if it took over 20 minutes to drive during peak commute times. Connect the Coastside proposes that the Delay Index be increased to 3.0 for segments that have adjacent Class I bicycle facilities or Class II bicycle facilities along at least 80% of the length. This higher standard increases delay for motorists, but encourages improvements that provide mobility across multiple modes rather than road widening and is in accordance with statewide and County General Plan Complete Streets policies that encourage provision of capacity for all modes of travel.

2.1.3 Existing Conditions

2.1.3.1 Intersection Level of Service

Existing Condition LOS was calculated for 48 key intersections located within the Study Area. Most of the Study intersections are located along Highway 1 and SR-92. Delay and LOS are provided for Weekday AM and PM peak hour and Weekend peak recreational hour in **Table 7**. The operating standard for each intersection is also provided.

2.1.3.2 Corridor Delay

A Delay Index was calculated for the Highway 1 corridor extending the entire length of the Study Area and for SR-92 from west of Landfill Road to east of SR-92/SR-35 (Lower) intersection. The majority of Highway 1 intersections are uncontrolled, resulting in low off-peak free-flow travel times. Although certain segments have slower traffic during peak hours, the entire corridor is evaluated as one segment for the purpose of calculating Delay Index and determining impact of growth. This approach reflects that most of the delay occurs at intersections, which have a separate (LOS) evaluation metric and standard. Measures to reduce delay for these two highway segments are therefore best implemented and effective at the corridor level. Delay Index and Travel Times are provided for Weekday AM and PM peak hour and Weekend peak recreational hour for these two segments in **Table 8**. For comparison, the segment LOS

[5] California MUTCD 2012, Chapter 4

under the v/c criteria are also provided. Analysis of intersection and corridor delay is discussed below in Section 2.1.4.

Table 7 - Existing Conditions Peak Hour Intersection Level of Service

Street Names	Control Type	Operating Standard[1]	AM Peak Hour			PM Peak Hour			Weekend Peak Hour		
			Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant
HWY 1 / 2nd St	TWSC	C(D) & Warrant	16.1 (WB)	C	N	15.7 (WB)	C	N	22.4 (WB)	C	N
HWY 1 / 7th St	TWSC	C(D) & Warrant	12.6 (EB)	B	N	13.0 (EB)	B	N	14.8 (EB)	B	N
HWY 1 / 8th St	TWSC	C(D) & Warrant	18.7 (WB)	C	N	32.5 (WB)	D	N	45.3 (WB)	E	N
SR -1 / 16th St	**TWSC**	**C(D) & Warrant**	**31.6 (EB)**	**D**	**N**	**39.5 (EB)**	**E**	**N**	**42.6 (WB)**	**E**	**N**
SR -1 / Carlos St	TWSC	C(D) & Warrant	12.3 (WB)	B	N	12.1 (WB)	B	N	12.7 (WB)	B	N
HWY 1 / Vallemar St	TWSC	C(D) & Warrant	17.6 (EB)	C	N	24.5 (WB)	C	N	21.8 (WB)	C	N
HWY 1 / California Ave	**TWSC**	**C(D) & Warrant**	**25.6 (WB)**	**D**	**N**	**44.4 (WB)**	**E**	**N**	**>50 (WB)**	**F**	**N**
HWY 1 / Virginia Ave	**TWSC**	**C(D) & Warrant**	**22.6 (WB)**	**C**	**N**	**38.5 (WB)**	**E**	**N**	**>50 (WB)**	**F**	**N**
HWY 1 / Vermont Ave (WB)	**TWSC**	**C(D) & Warrant**	**27.5 (WB)**	**D**	**N**	**45.0 (WB)**	**E**	**N**	**>50 (EB)**	**F**	**N**
HWY 1 / Cypress Ave (EB)	**TWSC**	**C(D) & Warrant**	**44.2 (EB)**	**E**	**N**	**>50 (WB)**	**F**	**N**	**>50 (EB)**	**F**	**N**

Street Names	Control Type	Operating Standard[1]	AM Peak Hour			PM Peak Hour			Weekend Peak Hour		
			Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant
HWY 1 / St Etheldore St (South)	TWSC	C(D) & Warrant	23.2 (WB)	C	N	34.1 (WB)	D	N	37.1 (WB)	E	N
HWY 1 / Capistrano Rd (North)	TWSC	C(D) & Warrant	17.4 (EB)	C	N	22.1 (EB)	C	N	30.6 (EB)	D	N
HWY 1 / Coral Reef Ave	TWSC	C(D) & Warrant	16.3 (WB)	C	N	24.5 (WB)	C	N	28.7 (WB)	D	N
HWY 1 / Capistrano Rd (South)	Signalized	C(D)	19.1	B	N/A	17.5	B	N/A	20.7	C	N/A
HWY 1 / Coronado St	Signalized	C(D)	21.7	C	N/A	14.4	B	N/A	11.4	B	N/A
Obispo Rd / Coronado St	TWSC	C(D) & Warrant	12.9 (EB)	B	N	10.2 (WB)	B	N	12.3 (WB)	B	N
HWY 1 / Magellan Ave	**TWSC**	**C(D) & Warrant**	**>50 (EB)**	**F**	**N**	**>50 (EB)**	**F**	**N**	**>50 (EB)**	**F**	**N**
HWY 1 / Medio Ave	**TWSC**	**C(D) & Warrant**	**>50 (WB)**	**F**	**N**	**>50 (WB)**	**F**	**N**	**>50 (WB)**	**F**	**N**
HWY 1 / Miramar Dr	**TWSC**	**C(D) & Warrant**	**21.3 (EB)**	**C**	**N**	**>50 (EB)**	**F**	**N**	**46.9 (EB)**	**E**	**N**
SR-92 / Landfill Rd	**TWSC**	**C(D) & Warrant**	**>50 (SB)**	**F**	**N**	**>50 (SB)**	**F**	**N**	**33.5 (SB)**	**D**	**N**

Street Names	Control Type	Operating Standard[1]	AM Peak Hour			PM Peak Hour			Weekend Peak Hour		
			Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant	Delay[2]	LOS	Meets Warrant
SR-92 / Skyline Blvd (Upper)	**TWSC**	**C(D) & Warrant**	**35.5 (NB)**	**E**	**N**	**>50 (NB)**	**F**	**N**	**>50 (NB)**	**F**	**N**
SR-92 / SR-35 (Lower)	Signalized	C(D)	11.7	B	N/A	22.0	C	N/A	41.9	D	N/A

[1] Standards provided within parenthesis are for individual movements.

[2] Signalized intersections and all-way stop controlled (AWSC) intersections are reported by the average delay and LOS for the intersection; two-way stop controlled (TWSC) intersections are reported with the worst approach's delay and LOS. Bolded intersections fall below the defined LOS standard.

Table 8. Existing Conditions Peak Hour Roadway Segment Delay Index

Corridor and Direction		Operating Standard	Freeflow Travel Time (mm:ss)	AM Peak Hour		PM Peak Hour		Midday Peak Hour	
				Travel Time (mm:ss)	Delay Index	Travel Time (mm:ss)	Delay Index	Travel Time (mm:ss)	Delay Index
NB Highway 1 from Mirada Road to 1st Street		2.0	06:30	07:29	1.15	7:51	1.21	7:56	1.22
Mirada Rd to Capistrano Rd (N)		*N/A*	*02:37*	*03:14*	*1.24*	*3:36*	*1.38*	*3:39*	*1.4*
Capistrano Rd (N) to 16th St		*N/A*	*02:59*	*03:15*	*1.09*	*3:18*	*1.11*	*3:18*	*1.11*
16th St to 1st St		*N/A*	*00:54*	*01:00*	*1.11*	*0:57*	*1.04*	*1:00*	*1.1*
SB Highway 1 from 1st Street to Mirada Road		2.0	06:30	07:22	1.14	7:37	1.18	7:50	1.21
1st St to 16th St		*N/A*	*01:00*	*01:00*	*1.00*	*1:06*	*1.11*	*1:07*	*1.12*
16th St to Capistrano Rd (N)		*N/A*	*03:00*	*03:12*	*1.07*	*3:15*	*1.09*	*3:22*	*1.13*
Capistrano Rd (N) to Mirada Rd		*N/A*	*02:30*	*03:10*	*1.27*	*3:16*	*1.31*	*3:21*	*1.35*
SR-92 from Half Moon Bay city limits to I-280 on-ramp	NB	2.0	08:42	13:16	1.52	13:04	1.50	13:05	1.50
	SB			12:48	1.47	15:32	1.79	19:02	**2.19**

Note: **Bolded** corridors fall below the defined LOS standard.

2.1.3.3 Recreational Parking

To ensure adequate parking at Coastside recreational destinations and to avoid overcrowding local street parking, the Midcoast parking standard is based on parking occupancy at the recreational parking facilities. Sufficient recreational parking needs to be provided, and when necessary the parking supply should be expanded to meet the standard, in part to prevent overflow parking into residential areas.

Beach access points should have no more than 85% parking occupancy in the associated recreational parking facility during an average weekend midday peak. These facilities and associated recreational destinations include:

- Gray Whale Cove Upper Lot – Gray Whale Cove State Beach
- Montara Beach Paved Parking – Montara Beach
- Rancho Corral de Tierra Parking – open space park
- Surfer's Beach Parking – Surfer's Beach

2.1.4 Existing Vehicular Transportation Problems and Deficiencies

Many Coastside residents feel that the traffic during peak hours and during nicer weather on weekends is intolerable. Identifying deficiencies in the transportation system is vital to prioritizing improvements according to community needs and investing capital funds responsibly. This section provides a detailed analysis of existing issues and deficiencies in the Midcoast area of San Mateo County.

2.1.4.1 Intersection LOS

All signalized intersections within the Midcoast region operate above the LOS C standard; however, several unsignalized intersections along Highway 1 have minor street approaches that operate below the LOS D standard during commuter peak periods or below LOS E during recreation peak periods. The following intersections do not meet the LOS standard during the listed peak hours:

- Highway 1 and 8th Street (Weekend)
- Highway 1 and California Avenue (PM, Weekend)
- Highway 1 and Virginia Avenue (PM, Weekend)
- Highway 1 and Vermont Avenue (PM, Weekend)
- Highway 1 and Cypress Avenue (AM, PM, Weekend)
- Highway 1 and Magellan Avenue (AM, PM, Weekend)
- Highway 1 and Medio Avenue (AM, PM, Weekend)
- Highway 1 and Miramar Drive (PM)

All of the intersections that operate below the standard are minor-street, stop-controlled and only have one lane of approach and only Cypress Avenue has more than 50 vehicles per hour on an approach turning onto Highway 1. None of the intersections operating below the standard would meet the peak hour signal warrant, except Cypress Avenue, which currently meets a signal warrant.

Between Half Moon Bay City limit and I-280, the following study intersections operate at LOS F:

- SR-92 and Ox Mountain Landfill Road (AM, PM)
- SR-92 and Skyline Boulevard (AM, PM, Weekend)

Ox Mountain Landfill Road has very low traffic volumes entering SR-92. Skyline Boulevard has a channelized-yield right turn onto SR-92 and less than 50 vehicles turning left onto SR-92. Neither intersection would meet the peak hour signal warrant under current conditions.

2.1.4.2 Roadway Segment Delay

Under existing conditions, both directions of travel along Highway 1 show a Delay Index within the standard of 2.0 for all time periods. While discrete segments along Highway 1 are not held to any defined standard, it can also be noted that none of them currently exceed the standard. For SR-92, the standard is only exceeded in the southbound direction during the weekend midday period. The other directions and time periods are within the Standard.

2.1.4.3 Recreational Parking Utilization

A recreational parking supply inventory and parking utilization survey was conducted during Summer and Fall 2014 as part of the *San Mateo County Coastside Access Study*. An inventory of available parking areas was conducted adjacent to every park site along the Coastside between Devil's Slide to the north and El Granada to the south. The entire study corridor has an estimated 396 parking spaces in designated parking areas. When designated lots fill to capacity, visitors sometimes park on the roadside. While such parking is legally permitted as long as the vehicle is outside the right of travel way, it is not recommended. These vehicles parked on the roadside adjacent to designated or informal parking areas were counted as "overflow" parking to the designated parking area and were therefore counted as occupancy in excess of the designated capacity.

During the data collection period, a total of 423 parked vehicles were observed in the designated and overflow parking areas during maximum occupancy, leading to a utilization rate of 107% of the formal spaces. Out of all study locations, the highest overflow was observed at Montara State Beach and McNee Ranch (137%), while Quarry, Wicklow and Mirada Surf saw the least occupancy rate at 26%. Many parking spaces are not striped and therefore may lead to inefficient use of the lots.

2.2 Pedestrian Movements

2.2.1 Performance Standards

Highway 1 and SR-92 create significant barriers for pedestrian crossings, and do not provide for safe, comfortable north-south or east-west pedestrian movement. Community members believe this precludes people from walking, despite a strong desire for safe walking routes. Midcoast residents embrace appropriate design and operating standards that lead to improvements that create a safe network for pedestrians that provides mobility and accessibility. The proposed volume-based pedestrian facility standard for the Midcoast, as defined below, focuses on key areas where there is a potential for pedestrian demand and identifies locations where pedestrian facilities are needed based on the level of adjacent vehicle volume, popular destination locations, e.g., beaches and parking areas; and shopping and service areas. The pedestrian crossing standard is aimed at improving pedestrian safety by providing enough pedestrian crossings along key highway segments to minimize uncontrolled crossing while still minimizing disruptions to vehicular traffic flows.

Other pedestrian goals include improving north-south & east-west pedestrian mobility along the highway corridors; improving the ability of residents to walk within and between town centers, including to transit

stops; and increasing pedestrian safety on Highway 1 and SR-92 during special events, such as the Pumpkin Festival or Mavericks surf competition.

2.2.1.1 Volume-based Pedestrian Amenity Standards

Pedestrian demand has been characterized as low, medium or high, and hotspots. Low demand correlates to roadways in the vicinity of vacant land. Medium to high pedestrian demand occurs along commercial and residential land use areas, while hotspots are key destinations that experience a high density of local as well as visiting pedestrians, such as beaches, commercial areas and view-points.

Based on the level of pedestrian demand and peak hour traffic volumes, pedestrian facility standards have been formulated to generate and evaluate infrastructure improvement recommendations. The standards and improvements are described in **Table 9** and **Table 10** . These Volume-based Amenity Standards do not warrant pedestrian improvements for areas with low pedestrian demand. Intersection and street segment improvements are needed at locations with pedestrian-oriented land use and at key destinations. At locations with medium to high pedestrian demand and at hot spots, safe pedestrian crossing locations should be located no more than a half mile apart. As traffic volumes increase, the level of improvement needed to provide a safe crossing increases, from a simple marked crosswalk at the lowest traffic volumes, to a high visibility crosswalk with curb extensions and a pedestrian activated signal or beacon at locations with high traffic volumes. The Multi-modal Trail is the primary improvement serving north-south pedestrian movements. The full listed of recommendations is depicted below.

Table 9 - Recommended Intersection Improvement Standards for Pedestrian Facilities

Traffic Volumes (veh/hr)	Suggested Improvements	Pedestrian Demand		
		Low (Empty)	Medium to High (Land Use)	Hot Spots (Key Destinations)
0-800	Crosswalk (two parallel stripes only)		**X**	**X**
800-1600	Crosswalk		**X**	**X**
	Ladder Crosswalk (higher visibility)			**X**
	Intersection Lighting		**X**	**X**
	Pedestrian Signal/PPB **(Sig)**		**X**	**X**
	Countdown in Signal **(Sig)**			**X**
1600-2000	Crosswalk		**X**	**X**
	Ladder Crosswalk		**X**	**X**
	Intersection Lighting		**X**	**X**
	Pedestrian Signal/PPB **(Sig)**		**X**	**X**
	Countdown in Signal **(Sig)**		**X**	**X**
	Beacon Signs for Pedestrians **(Unsig)**			**X**
> 2000	Crosswalk		**X**	**X**
	Ladder Crosswalk		**X**	**X**
	Intersection Lighting		**X**	**X**
	Pedestrian Signal/PPB **(Sig)**		**X**	**X**
	Countdown in Signal **(Sig)**		**X**	**X**
	Beacon Signs for Pedestrians **(Unsig)**		**X**	**X**
	Curb Extensions			**X**
	Median Refuge **(4+ lanes)**			**X**

(Sig) = Signalized
(Unsig) = Unsignalized

Table 10 - Recommended Street Segment Improvement Standards for Pedestrian Facilities

Traffic Volumes (veh/hr)	Suggested Improvements	Pedestrian Demand		
		Low (Empty)	Medium to High (Land Use)	Hot Spots (Key Destinations)
0-800	Walkways		**X**	**X**
800-1600	Walkways		**X**	**X**
	Curb		**X**	**X**
	Ped scale street lighting		**X**	**X**
> 1600	Walkways		**X**	**X**
	Curb	**X**	**X**	**X**
	Ped scale street lighting		**X**	**X**
	Presence of buffer			**X**

2.2.2 Existing Conditions and Deficiencies

The pedestrian network in western San Mateo County is generally comprised of local sidewalks, intermittent crossings at signalized town intersections, and the public multi-use trail system. The Midcoast Multi-Modal Trail (Trail), is a bicycle and pedestrian commuter trail that will provide an alternative means of transportation for residents of the Midcoast to safely access neighboring communities, town centers, schools and recreational destinations without having to travel on the highway. The Trail, commonly referred to as the Parallel Trail, was conceptualized in the community- developed Highway 1 Safety and Mobility Improvement Study, Phase 1. The Trail will be separated from the highway and have minimal interaction with vehicular traffic allowing it to serve residents of all ages and abilities.

Conceptually, the trail will span from Montara south to Miramar where it will connect with the Naomi Partridge Trail in Half Moon Bay. This will provide for a continuous, regional bicycle and pedestrian commuter trail. By providing residents the opportunity to walk and bicycle throughout the coastside, congestion on the highway should improve. The Trail would be easily accessed by residents living on the east side of Highway 1, require no highway crossings and act as a Safe Route to School for children at El Granada Elementary School.

In some locations, sidewalks require maintenance, while in others sidewalk or trail facilities are absent altogether. In these places without pedestrian facilities, pedestrians walk along paved or unpaved shoulders, or in the roadway. Given the higher traffic speeds, coastal access and community arterial function of Highway 1, this lack of pedestrian accommodation presents a safety concern in the area. It also conflicts with the County's policy on Complete Streets and fails to comply with ADA guidelines for paths of travel to key locations (including transit stops).

2.2.2.1 Pedestrian Demand and Traffic Volumes

Pedestrian demand in the Midcoast region is spread along Highway 1, mainly near the coast. Destinations include beaches, trails, viewpoints and surfing destinations. Major pedestrian hotspots are portrayed in **Figure 2**.

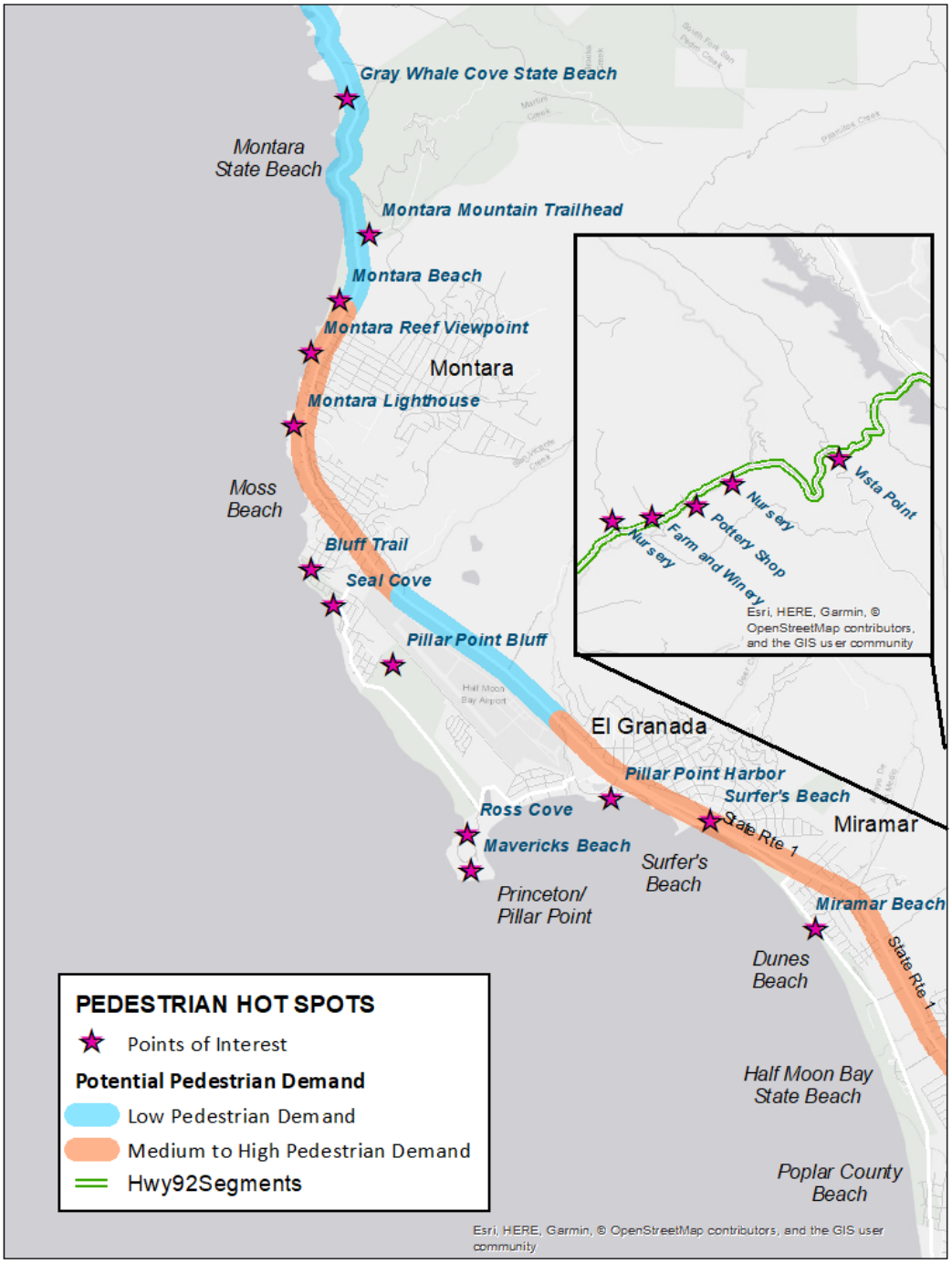


Figure 2. Pedestrian Hot Spots and Level of Demand

2.2.2.2 Pedestrian Crossings

All marked pedestrian crossings of Highway 1 and SR-92 within the Study Area are located at signalized intersections of Highway 1 and local streets in El Granada, and Princeton/Pillar Point Harbor. There are no marked crossings of Highway 1 in the communities of Moss Beach, Miramar and Montara. Existing crossings are primarily located at areas of dense residential and commercial land use and are notably missing from most recreational access points such as trailhead parking lots and designated vista points.

Visitors to coastal beaches who park east of Highway 1, including on the eastern shoulder are required to cross Highway 1 without marked crossings or sidewalks located on the eastern edge, often with little or signage to alert drivers of potential pedestrian crossings. Despite these unsafe conditions and high weekend traffic volumes, coastal visitors often cross Highway 1 to access beaches and other points of interest, Potential sites for new crossings include on Highway 1 between Coronado Street and Pillar Point Harbor, trailhead parking north of Martini Creek, and beach parking at Gray Whale Cove State Beach. Improved pedestrian crossings and accessibility are a priority, given that these highways serve as major arterials in coastal communities, and separate neighborhoods, commercial areas and parking areas from the coast or from one another.

There is a general lack of marked pedestrian crossings in the Study Area. A number of vehicle/pedestrian collisions have occurred at unmarked crossings, including at the potential improvement locations named above. Existing crossings use two parallel transverse lines, a design that has since been shown to have lower visibility for drivers than alternatives, such as continental crosswalks (also known as zebra striping). Some studies have claimed that low-visibility treatments can be even more dangerous than no crossing treatment because they provide pedestrians with a false sense of security and expectation that motorists will yield. More frequent crossings (of no more than 600 feet in developed or recreational areas) were called for on Highway 1 in the 2011 CBPP, but these have not yet been implemented. Robust pedestrian crossing treatments and beacons are also needed at key locations along SR-92, including at the two three-way intersections with Skyline Boulevard.

Given the high-speed conditions and the triple purpose of Highway 1 (as State Route, local arterial and coastal access facility), more effective crossing facilities are needed at all key crossing points along the route. The Congestion Management Project, which is currently being developed, has investigated potential long-term solutions to address this issue which include continental crossings in combination with Pedestrian Hybrid Beacons (also known as HAWK beacons), PELICAN signals, Rectangular Rapid Flash Beacons (RRFBs), or in-road warning lights. For example, high visibility continental crossings combined with RRFBs have been successfully used for coastal highway crossings in Astoria, Oregon. To prevent potential rear end collisions when motorists stop for pedestrians in the crosswalk, installation of two warning beacons separated by 150 feet are recommended. This gives drivers advance notice that someone is in the crossing and provides time to effectively decelerate from highway speeds.

The Southern Skyline Boulevard Ridge Trail Extension Project led by the San Francisco Public Utilities Commission will extend the Ridge Trail south from SR-92 alongside Skyline Boulevard to Henrik Ibsen Road. A safe crossing of SR-92 is needed to connect over 100 miles of continuous Ridge Trail from Marin County to southern San Mateo County. In the project vicinity, neither S.R. 35 nor S.R. 92 provides pedestrian facilities (sidewalks and crosswalks) or bikeways. Shoulders are present along some segments of both highways, but the shoulders are narrow or discontinuous in some locations from vegetation and roadway width constraints. In general, pedestrian activity in the area is minimal and limited to recreational users of nearby trails and paths who were assumed to travel to the area by automobile. The Upper SR-92/SR-35 intersection has poor visibility due to steep grades on approach to both sides of the summit.

A safe pedestrian crossing will require careful planning and design which is beyond the scope of this plan. Therefore, Connect the Coastside proposes a collaborative planning and design effort led by Caltrans in partnership with San Mateo County, the San Francisco Public Utilities Commission, Bay Area Ridge Trail and other stakeholders. The planning process should consider a range of alternatives, including crosswalks with lighting

2.2.2.3 Trails and Coastal Access

The California Coastal Trail (CCT) is a scenic, recreational public trail system envisioned to be continuous along the California coast. The CCT is comprised of several different facility types within the Study Area, ranging from sporadically paved multi-use paths in Half Moon Bay to unpaved dirt trails north of Princeton to connections along the roadway shoulder in Montara. The CCT is intended to serve pedestrians primarily, but also accommodates many other users, including cyclists, wheelchair users, and equestrians where feasible.

Existing portions of the CCT run in a north-south direction west of Highway 1 north of Montara, in Princeton, and El Granada and Miramar. The trail is currently paved and separated from the highway between the City of Half Moon Bay and Pillar Point Harbor, transitioning to an on-street route through Princeton, to a multi-purpose dirt path along the Pillar Point bluffs to Seal Cove in Moss Beach.

There are a number of beaches, scenic viewpoints, and other attractions along the coastline. When these destinations are accessed by foot, pedestrians often walk directly there via local streets, parking lots, or, at times, privately owned property (where owners allow users to access public beaches, for example).

2.3 Bicycle Operations

2.3.1 Performance Standards

The Midcoast communities and County policies promote the creation and use of design and operating standards that allow a safe and complete network for bicycles that improves cyclists' mobility and accessibility. The bicycle facility standard for the Midcoast focuses on removing gaps and requiring bicycle facilities based on the level of adjacent vehicle speed and congestion. The bicycle parking standard is aimed at providing a sufficient expectation of bicycle parking at key destinations.

2.3.1.1 Volume-based Amenity Standards

Based on level of bicycle demand and traffic volumes, the need for bicycle facilities varies. **Table 11** shows volume-based standards for bicycle facilities influenced by traffic volumes and three levels of bicycle user demands. Low traffic and low bicycle demand can be usually met by Class III bikeways, while a medium bicycle demand is better met with Class II bikeways. A high user demand coupled with high traffic volumes require separated bikeways and additional safety features such as bike detection, dashed bike lanes and left-turn bike lanes at intersections. As per the National Association of City Transportation Officials (NACTO), on streets with posted speed limit greater than or equal to 25 mph bike lanes are most helpful, while on streets with higher speed limits of 35 mph or more, treatments that provide greater separation between bicycles and motor traffic should be considered. These include left-side bike lanes, buffered bike lanes and bike paths.[6]

[6] https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/conventional-bike-lanes/

Table 11 - Volume-based Amenity Standards for Bicycle Facilities

Traffic Volumes (veh/hr)	Suggested Improvements	Bicycle Demand		
		Low	Medium	High
0-800	Class III bikeway	**X**	**X**	**X**
800-1600	Class III bikeway	**X**		
	Class II bikeway		**X**	**X**
1600-2000	Class II bikeway	**X**	**X**	
	Class IV separated bikeway			**X**
	Intersection bike detection **(Signal)**			**X**
> 2000	Class II bikeway	**X**		
	Class IV separated bikeway		**X**	**X**
	Intersection bike detection **(Signal)**		**X**	**X**
	Dashed intersection bike lane			**X**
	Left-turn intersection bike lane			**X**

2.3.1.2 Bicycle Parking

Bicycle storage at any beach access point, and any major trip generator or recreational facility located on Highway 1 or SR-92 should have no more than 85% occupancy during an average weekend midday peak. As per the *San Mateo County Zoning Regulations*[7], "Bicycle parking spaces shall be provided at a rate of one locker, rack, or other device to secure and park bicycles for ten vehicle spaces required, but in no case less than one bicycle parking space per parcel."

2.3.2 Existing Conditions and Deficiencies

Bicycle infrastructure has been classified into the following types of facilities, with design guidance provided by the Caltrans Highway Design Manual:

Class I Multi-use, paved paths that are separated from vehicular traffic, and enable two-way travel for bicyclists and pedestrians

Class II On-street striped and signed lanes for bicyclists

Class III Shared right-of-way for bicyclists and motorists, with "sharrow" symbols on the pavement to indicate that the roadway is to be shared with bicyclists

Class IV Cycle-track. With a physical separation between traffic and an on-street striped and signed lane for bicycles

[7] Zoning Regulations, *Section 6254.4 (11)*, Planning and Building Department, County of San Mateo; https://planning.smcgov.org/sites/planning.smcgov.org/files/SMC_Zoning_Regulations.pdf

In 2014, Caltrans endorsed the National Association of City Transportation Officials (NACTO)'s Urban Street Design Guide, as a supplement to the state's Highway Design Manual and Manual of Uniform Traffic Control Devices (MUTCD). Assembly Bill 1193 also allowed jurisdictions to choose other guidelines such as the NACTO's Urban Bikeway Design Guide for design of their bicycle facilities. In particular, AB1193 permitted construction of cycle tracks (also known as protected bicycle lanes) and required Caltrans to provide design guidelines on these new "Class IV" facilities.

The California Coastal Trail ranges from Class I facilities to unclassified dirt paths in various sections along the coastline. Class I, II, and III facilities are present in Half Moon Bay, along Highway 1, SR-92, and Kelly Avenue.

Cyclists use Highway 1 as an intercommunity route along the coast, since it is the only direct and continuous north-south connection. Highway 1 has wide paved shoulders (typically 8-foot wide) in some areas, but no defined bicycle accommodation through the most dangerous points along the route, and allowed parking often provides an impediment to safe bicycle use. Intersections along Highway 1 often feature large corner radii and wide cross-sections that are designed to optimize conditions for fast-moving motor vehicles but make the facility more dangerous, inaccessible and uncomfortable for bicycles and pedestrians.

Some avid recreational cyclists use SR-92 as one of a handful of potential coastal access routes from eastern San Mateo County. SR-92 has wide paved shoulders in some areas, but these are narrow or disappear along significant segments of the route, and the roadway has portions of steep grades.

There is a lack of bicycle parking at recreational and other destinations within the Study Area. The addition of bicycle parking at major waterfront destinations can provide cyclists with more secure places to store their bicycles and can help encourage cycling throughout the Study Area. Additionally, other amenities such as lockers and showers can make cycling a more viable option for workers commuting to workplaces within the Study Area.

Again, the lack of bicycle facilities providing safe bicycle accommodation along key routes and through intersections in the Study Area conflicts with the County's Complete Streets Policy and exacerbates the problems of automobile dependence and motor vehicle congestion within the area, especially during commute hours and peak summer tourist times.

2.4 Transit Operations

2.4.1 Performance Standards

Transit ridership on the Coastside is quite low, therefore overcrowding standards are not relevant under current and near-term future conditions. SamTrans as part of its *Reimagine SamTrans* project is developing a new Service Policy Framework, which will include identifying goals for metrics such as load and utilization tailored to the unique characteristics of areas of lower density development, such as the Midcoast. In lieu of performance standards, Connect the Coastside establishes a goal of increasing transit ridership in the Study Area both to alleviate traffic congestion, and to reduce greenhouse gas emissions.

Connect the Coastside recommends that all bus stops have a paved waiting platform, and bus stops with a minimum average daily ridership of 25 should have a bench while bus stops with a minimum average daily ridership of 100 passengers should have a full shelter.

2.4.1.1 Transit Capacity Utilization

SamTrans 2018 Coastside Transit Study reports that 96-99% of Midcoast households own cars, indicating there is a very low "transit-dependent" population there and thus a lower propensity to ride transit. The study also found that "ridership declined on all Coastside routes in 2017 compared to 2016. Routes 110 and 118 are the most productive in terms of ridership per service hour at 27 and 24 riders per service hour respectively. The 294 is the least productive at 7.1 riders per service hour, followed closely by the FLX Pacifica route at 8 passengers per service hour. The 17 route had the largest drop in ridership with a 28 percent drop in the ridership per service hour." Fares systemwide on SamTrans buses represent about 16% of the total cost of providing the service, requiring deep taxpayer subsidies. Midcoast and HMB stakeholders indicated that frequent and direct access to BART stations was the highest transit service priority while some requested mid-day and weekend service to reach other activities.

2.4.2 Existing Conditions

Existing transit service to and within the Study Area is provided by the San Mateo County Transit District, which operates SamTrans, the regional bus service; and RediCoast, a paratransit service.

SamTrans 2018 study of its Coastside transit service found that ridership declined on all Coastside routes in 2017 compared to 2016. "Routes 110 and 118 are the most productive in terms of ridership per service hour at 27 and 24 riders per service hour respectively. The 294 is the least productive at 7.1 riders per service hour, followed closely by the FLX Pacifica route at 8 passengers per service hour. The 17 route had the largest drop in ridership with a 28 percent drop in the ridership per service hour. Ridership was also evaluated starting in 2012, and most routes are currently less productive than they were in 2012. Some routes saw an increase in riders per service hour in 2016 but have again experienced a decline since then."

2.4.2.1 Fixed Route Transit Service

Just two fixed-route transit services operate in or near the Study Area as shown in **Table 12**. These services provide north-south and east-west transit access within the Study Area at headways that range from 30 minutes in the peak to 120 minutes in the off-peak. While providing mobility options for some travelers, transit does not function as a primary mode of transportation for most discretionary transit riders because of its limited coverage and long headways. Key features of existing fixed-route transit services are summarized in **Table 12**.

Table 12 - Fixed Route Transit Services

Route	Agency	Description	Peak Headway (min)	Off Peak Headway (min)	Span of Service
17	SamTrans	Pacifica – Pescadero (weekday)	30	60 (weekdays) 120 (weekends)	5:30 AM – 9:30 PM
18	SamTrans	Montara – Half Moon Bay	30	N/A	7:00 AM – 9:20 AM 3:15 PM – 4:20 PM
294	SamTrans	Pacifica – Miramontes Point (weekend)	60	120	5:30 AM – 9:00 PM
Devil's Slide Ride	City of Pacifica	Half Moon Bay – Hillsdale Caltrain	75	100	8:00 AM – 5:00 PM

SamTrans Route 17

Route 17 is a coastal community service bus that runs weekday service connecting Pacifica (just north of the Study Area) to Montara, Moss Beach, El Granada, Half Moon Bay, and Pescadero. Weekend service terminates at Miramontes Point, before reaching Pescadero. Route 17 operates along Cypress Avenue, Airport Street, and Capistrano Road in the Study Area, operating all days of the week between 5:30 AM and 9:30 PM. This line has 30-minute headways during weekday mornings, which increase up to 2 hours for the rest of the day as well as on weekends. Ridership studies conducted for the SamTrans Coastside Study reveal that between 2016 and 2017 ridership per service hour on Route 17 fell by 28 percent.

No shelters or benches are provided in the study area.

SamTrans Route 18

Route 18 is a school day only bus that runs service connecting Montara, Moss Beach, El Granada, and Half Moon Bay. Route 18 operates along 6th Street/Harte Street, Sunshine Valley Road, Etheldore Street, Cypress Avenue, Airport Street, Capistrano Road, Ave Alhambra, and Highway 1 in the Study Area, operating school days between 7:00 AM and 9:20 AM and between 3:15 PM and 4:20 PM. This line runs four buses in the AM and two buses in the PM with approximately 30-minute headways.

No shelters or benches are provided in the study area.

SamTrans Route 294

Route 294 is a regional express bus that connects Half Moon Bay to the other half of San Mateo County located along the San Francisco Bay. It is a vital link to the Hillsdale Caltrain station in San Mateo and the rest of the Bay Area. Route 294 operates along California State Route 92 between Half Moon Bay and the City of San Mateo. This line operates all days of the week between 5:30 AM and 9:00 PM, with headways that range from 1 to 2 hours.

No shelters or benches are provided in the study area.

Private Shuttle Services

The City of Pacifica offers the Devil's Slide Ride, a free shuttle which runs every 75 minutes on weekends from 8:00 AM to 5:00 PM between the Linda Mar Shopping Center in Pacifica, Devil's Slide Trail north of Montara in the south, and Oceana Terrace Senior Housing in the north.

Dial-a-Ride

Limited, demand-responsive transit services are available to the public residing within the Study Area under certain conditions of eligibility.

SamTrans OnDemand

SamTrans OnDemand is a pilot microtransit service that launched on May 6, 2019, and serves a five square-mile area around the Linda Mar community in Pacifica. It replaced the FLX Pacifica shuttle. Trips are requested via smartphone application, and cloud-based technology enables real-time dispatching and routing of vehicles to pickup and drop-off locations. The SamTrans customer service center is also equipped to process trip requests over the phone. Service is available between 6:15 AM and 6:30 PM.

RediCoast

RediCoast is a paratransit service managed by the San Mateo County Transit District as the coastal complement to Redi-Wheels on the bay side of the county. The service is provided under the Americans with Disabilities Act of 1990 (ADA).

RediCoast provides curb-to-curb transportation for disabled citizens living between Devil's Slide in the north and the border of Santa Cruz County in the south, including Princeton, Moss Beach, El Granada, and several other coastal communities. Travel outside of these areas is possible through arrangement with respective paratransit providers (e.g. Redi-Wheels for eastern San Mateo County, Outreach for Santa Clara County, etc.). RediCoast operates weekdays between 6:30 AM and 8:00 PM, and weekends and holidays between 8:00 AM and 5:00 PM. As of 2013, the cost for a one-way trip is $3.75.

Disabled citizens qualify for RediCoast services if any of the following conditions are met:

- The person is unable to meet the physical, visual, or communicatory requirements to safely and efficiently complete their trip using a fixed route bus; or
- The bus service is not accessible to the person; or
- The person cannot independently travel from their home to the bus stop.

Personal attendants are allowed to ride free with proper certification and notice, and other companions are allowed to ride on a space-available basis with fare payment and prior notice.

2.4.3 Existing Transit Problems and Deficiencies

Currently, none of the fixed route transit has enough ridership to meet SamTrans goals for fare box cost recovery, or minimum ridership goals. Additionally, none of the fixed route service bus stops provide any amenities and no bus stops have sufficient ridership to meet SamTrans thresholds to provide amenities.

Additional transit service (particularly for major visitor events), improved stop access, enhanced bus stop amenities, and targeted marketing could serve to increase transit ridership within the area. Every transit stop should also be viewed as an opportunity to provide an enhanced and effective pedestrian crossing, since transit users typically need to cross the street at either the beginning or the end of their trips.

To increase transit service utilization, the County in partnership with SamTrans and C/CAG needs to actively engage in the *Reimagine SamTrans* planning effort to identify the service changes, amenity provision, marketing and other measures necessary to increase transit ridership in the Midcoast. This partnership can produce a relevant goal that will measure transit capacity utilization of buses.

3 BUILDOUT CONDITIONS

3.1 Development of Buildout Forecasts

An important early step in development of Connect the Coastside was to evaluate the existing and future development potential of the Study Area, by creating a buildout forecast. This forecast was needed to develop travel demand forecasts using these development projections and utilize the resulting traffic forecasts to identify needed transportation improvements. These processes are summarized below and described in more detail in the "Development Forecast for the San Mateo County Comprehensive Transportation Management Plan Public Review Draft" (October 2015) and "Buildout Analysis and Traffic Projections Report" (September 2014).

3.1.1 Buildout Land Use Projections

First maximum buildout projections were developed using currently adopted plans and zoning for each area and an inventory of vacant or underutilized parcels in the Study Area, which includes the Midcoast, Half Moon Bay and certain surrounding rural lands. Using assessments of current, and future potential development, the 2006 San Mateo County LCP Buildout Estimate, Association of Bay Area Governments projections for job growth, Plan Princeton and City of Half Moon Bay development projections, and GIS analysis of vacant and underdeveloped sites, the consultant team developed a maximum development projection or maximum buildout forecast for the study area. This forecast represents the best professional estimate of the full build out of all land authorized for development, including rural lands within the Study Area.

The Maximum Buildout Forecast (MBF) projects a total of 12, 352 housing units (9,691 single-family and 2,661 multi-family) within the study area. The MBF also projects a maximum of about 8.53 million square feet of total commercial development and 9,897 jobs in the Study Area. Travel forecasts were developed based on the MBF by modeling 2014 and 2040 Study Area traffic and computing local growth in traffic demand due to the MBF for the Study Area for both intersections and roadway links. This involved updating the 2040 cumulative model with the local MBF land use. This analysis identified many deficiencies for both intersections and roadway segments; i.e., they would not meet the LOS standards under projected MBF conditions. The MBF land use was also used for the fee study portion of this project in estimating the productivity of a development fee for transportation impacts, which is discussed in Chapter 5.

These MBF projections were then refined to reflect constraints represented by the San Mateo County Midcoast Local Coastal Plan, the City of Half Moon Bay's Measure D, existing zoning, development trends, regional growth projections and the market analysis conducted in 2014 for the Half Moon Bay General Plan update. The Constrained Development Forecast (CDF) represents the most appropriate and accurate projection of future development because it is based on concrete, enforceable policies constraining future residential development in the San Mateo County Midcoast LCP and the City of Half Moon Bay's Measure D.

This CDF was subsequently incorporated into the land use inputs for the C/CAG travel demand model 2040 scenario, updating forecasts of housing units and employment in the study area. The model was then used to produce forecasts of peak hour traffic volumes for further analysis. Table 13 summarizes the existing and estimated residential units at buildout. **Table 14** presents the forecast for new non-residential construction and number of jobs expected at buildout.

Table 13 - Constrained Residential Development Forecast for Connect the Coastside (2040)

	Existing (2014)			Pipeline[4]			Forecast (2040)			Total (2040)			
Subarea	*Total Units[1]*	*Single-Family[2]*	*Multi-family[3]*	*Total Units*	*Single-Family*	*Multi-family*	*New Units[5, 6]*	*Single-Family[7]*	*Multi-family[7]*	*Total Units (2040)*	*Single-Family*	*Multi-family*	*Percent Change*
Unincorporated Midcoast	4,300	4,005	295	22	19	3	1,094	716	378	5,416	4,740	676	26%
Half Moon Bay	4,481	3,493	988	160	105	55	694	508	186	5,335	4,106	1,229	19%
Total	**8,781**	**7,498**	**1,283**	**182**	**124**	**58**	**1,787**	**1,224**	**564**	**10,750**	**8,846**	**1,905**	**22%**

Notes:

1 Existing development in Half Moon Bay has been corrected since November 2014 Existing Conditions Report. Existing mobile homes were not accounted for in that report; this results in increase of 409 single-family units.

2 Includes manufactured homes.

3 Includes housing in mixed-use buildings, and caretaker units.

4 Development projects under review as identified by San Mateo County in 2013-15 and the City of Half Moon Bay in 2014.

5 New residential development in unincorporated Midcoast limited to 40 units per year under Policy 1.23 of the San Mateo County Midcoast LCP (2014). In City of Half Moon Bay, Measure D limits residential growth to 1% per year, or 1.5% in downtown area. However, in Half Moon Bay, existing zoning is projected to result in less development than would be allowed under Measure D.

6 Future development in Half Moon Bay is based on 0.7% average annual growth rate projected in the Economic and Real Estate Conditions and Trends report (2014) prepared by EPS for the Half Moon Bay General Plan Update.

7 Assumes single-family/multifamily split found for zoning-based buildout analysis: 67% single-family and 33% multifamily in the Unincorporated Midcoast, and 75% single-family and 25% multifamily in Half Moon Bay.

Sources: San Mateo County Assessor, 2014; San Mateo County, 2014; City of Half Moon Bay, 2014; EPS, 2014; Dyett & Bhatia, 2015.

Table 14. Constrained Non-Residential Development Forecast for Connect the Coastside (2040)

	Existing (2014)	Pipeline[3]		Forecast (2040)		Total (2040)	
Subarea	*Existing Jobs[2]*	*Pipeline Non-Residential Sq. Ft.*	*Pipeline Jobs[2]*	*Potential Non-Residential Sq. Ft.[4, 5]*	*Potential Jobs*	*Total Jobs*	*Percent Change*
Unincorporated Midcoast	2,551	303,000	439	851,800	2,003	4,994	96%
Half Moon Bay	5,334	37,500	94	294,000	276	5,704	7%
Total	**7,885**	**340,500**	**533**	**1,145,800**	**2,279**	**10,698**	**36%**

Notes:

1 Combines the total "known" square footage from County Assessor data with estimated square footage of other parcels with non-residential development. Estimated intensity of existing development is based on that of "known" development.

2 Estimated based on assumed ratio of jobs per square foot of non-residential development in different categories (e.g., visitor-serving commercial, retail commercial, industrial).

3 Development projects under review as identified by San Mateo County in 2013-15 and the City of Half Moon Bay in 2014.

4 Future development in Unincorporated Midcoast based on analysis of vacant and underutilized land; average FAR of existing development in each zoning district, and other factors. Development in Neighborhood Commercial and comparable zones is adjusted downward in proportion to reduction in residential units, to account for lower demand.

5 Future development in Half Moon Bay is based on average annual growth rates by employment sector as projected in the Economic and Real Estate Conditions and Trends report (2014) prepared by EPS for the Half Moon Bay General Plan Update. Square footage estimated based on assumed ratio of jobs per square foot of non-residential development in different categories (e.g., visitor-serving commercial, retail commercial, industrial), using same assumptions as in zoning-based buildout analysis.

Sources: San Mateo County Assessor, 2014; San Mateo County, 2014; City of Half Moon Bay, 2014; EPS, 2014; Dyett & Bhatia, 2015.

3.1.2 Travel Demand Forecast and Buildout LOS

Using projected development results from the updated buildout analysis, traffic forecasts for a 25-year buildout horizon were prepared using the San Mateo County C/CAG-VTA travel demand model. Model outputs include forecasted traffic volumes on major roadway facilities within the study area for peak hours and periods. These future travel volumes were used to forecast future year intersection and roadway segment LOS, as described in the Buildout Analysis and Traffic Projections Report.

Because the C/CAG-VTA model represents an average weekday condition, weekend forecasts were developed by calculating factors to convert the model's standard midday period traffic volumes to weekend volumes. These factors were derived from 7-day tube counts along Highway 1 and SR-92.

3.2 Buildout Transportation Problems and Deficiencies

There are two ways growth under Buildout Conditions affects transportation conditions within the study area: 1) Increase in number of vehicles wanting to access Highway 1 within the Study Area, causing increased delays at these intersections, and 2) Growth in regional pass-through traffic along Highway 1

leading to congestion. Development within the Study Area increases the number of vehicles wanting to turn on Highway 1 and SR-92 from arterials and collector streets within the Study Area. This growth is spread along multiple access points but can result in increased delay at intersections along Highway 1 and SR-92, most of which only have a single lane of access and are controlled by minor-street stop signs. While development within the Study Area also results in an increase in traffic volumes along Highway 1, some growth is also due to regional pass-through trips which do not originate or terminate within the Study Area.

A comparison of intersection LOS between Existing Conditions and Buildout (2040) Conditions is provided for Weekday AM and PM peak hour and Weekend peak recreational hour in **Table 15**. A comparison of roadway segment LOS is given in **Table 16**.

3.2.1 Intersection LOS

The *San Mateo County Traffic Impact Study Requirements* defines the intersection LOS standard for San Mateo County as LOS C with no individual movement operating at worse than LOS D. There is no definition of peak periods, however it is noted that a standard of LOS D during a peak period may be allowed for dense urban conditions per County's discretion. No differentiation is made between signalized and unsignalized intersections besides the LOS standard defined for individual movements.

Policy 2.43 in the LCP sets LOS D as the acceptable level of service for roadway segments during commuter peak periods, and LOS E as acceptable during recreational peak periods, when assessing the need for road expansion. The LCP also has an intersection standard of LOS D. Connect the Coastside uses LOS D to evaluate intersections and roadway segments during the weekday peak hour and LOS E for weekends.

The operation of study intersections is shown under Buildout Conditions as compared to Existing Conditions in **Table 15**. Under Buildout Conditions the signalized intersection of Highway 1 & Coronado Street will operate at LOS D during the AM peak hour and LOS E during the PM peak hour, which is below the standard. The other signalized intersections within the Midcoast region operate above the LOS C standard. The majority of unsignalized intersections along Highway 1 have minor street approaches that operate below the LOS D standard. The following intersections do not meet the LOS standard during the listed peak hours:

- Highway 1 and 2nd Street (AM, PM, Weekend)
- Highway 1 and 8th Street (AM, PM, Weekend)
- Highway 1 and Vallemar Street (PM, Weekend)
- Highway 1 and California Avenue (AM, PM, Weekend)
- Highway 1 and Virginia Avenue (AM, PM, Weekend)
- Highway 1 and Vermont Avenue (AM, PM, Weekend)
- Highway 1 and Cypress Avenue (AM, PM, Weekend)
- Highway 1 and St. Etheldore Street (South Terminus) (AM, PM)
- Highway 1 and Coral Reef Avenue (AM, PM, Weekend)
- Highway 1 and Magellan Avenue (AM, PM, Weekend)
- Highway 1 and Medio Avenue (AM, PM, Weekend)
- Highway 1 and Miramar Drive (AM, PM, Weekend)
- SR-92 and Ox Mountain Landfill Road (PM, Weekend)
- SR-92 and Skyline Boulevard (Upper) (AM, PM, Weekend)

- SR-92 and SR 35 at Crystal Springs (Lower) (PM, Weekend)

All of the unsignalized intersections that will operate below the standard are minor-street, stop-controlled and only have one lane of approach. Of these intersections, California Avenue and Cypress Avenue have more than 75 vehicles per hour on an approach turning onto Highway 1 and satisfy the peak-hour signal warrant. While adding additional approach lanes may facilitate the movement of right- turning vehicles onto Highway 1, the main source of the failing LOS for these intersections is the high through volume along Highway 1. This results in left-turning vehicles on the minor street needing to wait a long time for a sufficient gap between cars to safely enter Highway 1. This could be mitigated by controlling intersections with high minor street volumes and combining low volume minor street approaches using either a roundabout or a signal.

3.2.2 Roadway Segment Delay

The previous roadway performance standard evaluated roadway segment operations based upon LOS standards defined by the LCP for assessing the need for road expansion. However, this plan proposes the use of delay index to analyze roadway segments because of the constrained nature of roadways and the desire for not widening roads. Similar to Existing Conditions, delay index was calculated for study segments along entire lengths of Highway 1 and SR-92 within the study area.

Delay Index and Travel Times for study segments along Highway 1 and SR-92 under Buildout Conditions are shown in **Table 16**. Highway 1 southbound segment exceeds the delay index standard of 2.0 during the weekday PM peak hour, mainly focused on the southern portion of the route. SR-92 exceeds the delay index standard for all hours and for both segments in the buildout condition with most delay concentrated at the signalized lower intersection of SR-92 and SR-35

Table 15 - Buildout Conditions Peak Hour Intersection Level of Service

Street Names	Control Type	LOS Standard[1]	AM Peak Hour LOS		PM Peak Hour LOS		Weekend Peak Hour LOS	
			Existing[2]	Buildout[2]	Existing[2]	Buildout[2]	Existing[2]	Buildout[2]
SR-1 / 2nd St	**TWSC**	**C(D)**	**C**	**F**	**C**	**F**	**C**	**F**
SR-1 / 7th St	TWSC	C(D)	B	C	B	C	B	C
SR-1 / 8th St	**TWSC**	**C(D)**	**C**	**F**	**D**	**F**	**E**	**F**
SR -1 / 16th St	**TWSC/Sig**	**C(D)**	**D**	**A**	**E**	**A**	**E**	**A**
SR -1 / Carlos St	TWSC	C(D)	B	C	B	C	B	C
SR-1 / Vallemar St	**TWSC**	**C(D)**	**C**	**D**	**C**	**F**	**C**	**E**
SR-1 / California Ave	**TWSC**	**C(D)**	**D**	**F**	**E**	**F**	**F**	**F**
SR-1 / Virginia Ave	**TWSC**	**C(D)**	**C**	**F**	**E**	**F**	**F**	**F**
SR-1 / Vermont Ave (WB)	**TWSC**	**C(D)**	**D**	**F**	**E**	**F**	**F**	**F**
SR-1 / Cypress Ave (EB)	**TWSC**	**C(D)**	**E**	**F**	**F**	**F**	**F**	**F**
SR-1 / Etheldore St (South)	**TWSC**	**C(D)**	**C**	**F**	**D**	**F**	**E**	**C**

Street Names	Control Type	LOS Standard[1]	AM Peak Hour LOS		PM Peak Hour LOS		Weekend Peak Hour LOS	
			Existing[2]	Buildout[2]	Existing[2]	Buildout[2]	Existing[2]	Buildout[2]
SR-1 / Capistrano Rd (North)	TWSC	C(D)	C	C	C	C	D	D
SR-1 / Coral Reef Ave	**TWSC**	**C(D)**	**C**	**F**	**C**	**F**	**D**	**F**
SR-1 / Capistrano Rd (South)	Signalized	C(D)	B	C	B	C	C	C
SR-1 / Coronado St	Signalized	C(D)	C	D	B	C	B	E
Obispo Rd / Coronado St	TWSC	C(D)	B	B	B	B	B	B
SR-1 / Magellan Ave	**TWSC**	**C(D)**	**F**	**F**	**F**	**F**	**F**	**F**
SR-1 / Medio Ave	**TWSC**	**C(D)**	**F**	**F**	**F**	**F**	**F**	**F**
SR-1 / Miramar Dr	**TWSC**	**C(D)**	**C**	**E**	**F**	**F**	**E**	**F**
SR-92 / Landfill Rd	**TWSC**	**C(D)**	**F**	**E**	**F**	**F**	**D**	**F**
SR-92 / Skyline Blvd (Upper)	**TWSC**	**C(D)**	**E**	**F**	**F**	**F**	**F**	**F**

Street Names	Control Type	LOS Standard[1]	AM Peak Hour LOS		PM Peak Hour LOS		Weekend Peak Hour LOS	
			Existing[2]	Buildout[2]	Existing[2]	Buildout[2]	Existing[2]	Buildout[2]
SR-92 / SR-35 (Lower)	**Signalized**	**C(D)**	**B**	**D**	**C**	**F**	**D**	**F**

[1] Standards provided within parenthesis are for individual movements.

[2] Signalized intersections and all-way stop controlled (AWSC) intersections are reported by the average delay and LOS for the intersection; two-way stop controlled (TWSC) intersections are reported with the worst approach's delay and LOS. Bolded intersections fall below the defined LOS standard.

Table 16 - Buildout Conditions Peak Hour Roadway Segment Delay Index

Corridor and Direction of Travel		Operating Standard	Freeflow Travel Time (mm:ss)	AM Peak Hour		PM Peak Hour		Midday Peak Hour	
				Travel Time (mm:ss)	Delay Index	Travel Time (mm:ss)	Delay Index	Travel Time (mm:ss)	Delay Index
NB Highway 1 from Mirada Road to 1st Street		2.0	06:30	07:53	1.22	9:02	1.39	9:22	1.44
Mirada Rd to Capistrano Rd (N)		*N/A*	*02:37*	*03:37*	*1.39*	*4:41*	*1.8*	*5:02*	*1.93*
Capistrano Rd (N) to 16th St		*N/A*	*02:59*	*03:07*	*1.04*	*3:15*	*1.09*	*3:12*	*1.07*
16th St to 1st St		*N/A*	*00:54*	*01:09*	*1.28*	*1:06*	*1.21*	*1:08*	*1.25*
SB Highway 1 from 1st Street to Mirada Road		2.0	06:30	09:51	1.52	14:59	**2.32**	12:35	1.94
1st St to 16th St		*N/A*	*01:00*	*01:08*	*1.14*	*1:17*	*1.28*	*1:29*	*1.48*
16th St to Capistrano Rd (N)		*N/A*	*03:00*	*03:00*	*1.00*	*3:03*	*1.02*	*3:21*	*1.12*
Capistrano Rd (N) to Mirada Rd		*N/A*	*02:30*	*05:43*	***2.30***	*10:39*	***4.28***	*7:45*	***3.12***
SR-92 from Half Moon Bay city limits to I-280 on-ramp	NB	2	08:42	43:44	**18.82**	15:39	**36.28**	39:27	**59.71**
	SB			17:51	**22.74**	08:22	**118.20**	36:07	**135.19**

[1] **Bolded** segments fall below the defined LOS standard.

4 TRANSPORTATION AND LAND-USE STRATEGIES

4.1 Determination of Improvement Strategies

The list of improvements provided below are based on the set of standards identified in this document and a revised Buildout Forecast. The Buildout Forecast used to model future traffic, including projected traffic from recent projects, such as the affordable housing project in Moss Beach. The infrastructure improvements described in this chapter were identified to mitigate deficiencies under Existing and Buildout traffic conditions.

4.1.1 Land Use Strategies

Connect the Coastside proposes the implementation of two strategies for managing land use to reduce the buildout potential so as to mitigate future traffic on Midcoast roadways. A lot merger program will be implemented, modeled on a policy adopted by the San Mateo County Board of Supervisors in 2006 but never implemented. The lot merger program will be initiated with incentives for voluntary mergers for an 18-month period, followed by a mandatory merger program.

Implementation of a mandatory lot merger program, generally following the policy adopted by the Board in 2006, would have limited to no effect on the number of buildable parcels along the Midcoast as the reduction in lots is already accounted for in the estimate of Buildout potential, because lot mergers were assumed to take place in the Midcoast LCP. A mandatory lot merger program could be challenging to carry out in the context of the uncertain legal status of many of the substandard lots in the Midcoast study area.

Based on the outcome of the lot merger program, the County may initiate a lot retirement program, where subdivisions of Midcoast lands zoned for Planned Agricultural District (PAD) and Resource Management (RM), both in the Coastal Zone, would be required to retire an equal number of lots as those to be developed to extinguish development rights on the retired lots.

4.1.2 Evaluation of Alternatives

A list of improvements was selected from a list of potential improvements compiled from TAC and community-suggested improvements, proposed projects identified in recent, relevant plans and reports, as well as improvements suggested by the consultant team to address identified deficiencies. Some improvements are proposed to address, in part, project-specific automobile traffic concerns although these improvements also contribute to achieving the mobility goals of this plan. To address the capacity needs generated by the Buildout projections, all improvements, except those necessary to address project specific impacts, were considered for implementation over the next 30 years to respond to planned growth in the study area. The complete list of potential improvements was analyzed based upon the ability to address deficiencies, feasibility concerns, cost estimates, and consistency with the LCP, including environmental considerations.

Improvements were then grouped into three alternatives for evaluation:

- High Impact/High Cost
- Medium Impact/Medium Cost
- Low Impact/Low Cost

For the most part, however, the improvements in each alternative were not designed to be mutually exclusive, unless specifically stated to be. Each alternative was based on cost, expected impact to existing infrastructure, environment and surrounding communities, as well as the overall effect on residents of the Midcoast Communities.

4.2 Infrastructure and Operational Improvements

This section describes the infrastructure and operational improvements for roadways, walkways, bikeways, parking and transit as identified under Connect the Coastside. The source of each project is listed in **Table 1** of Chapter 1.

4.2.1 Roadway Facilities

The following roadway improvements are included in Connect the Coastside to improve vehicular mobility by meeting relevant performance standards as well as addressing safety and circulation concerns. Proposed improvements to Highway 1 and SR-92 are shown in Figure 3 while local roadway improvements are shown in Figure 4 and Figure 5.

- These popular recreation destinations often attract large numbers of visitors and these improvements will alleviate congestion and improve safety for vehicles entering Highway 1 as identified in the *Highway 1 Safety and Mobility Improvement Study*:
  - **Turn Lanes and Acceleration Lanes** on Highway 1 and SR-92 will improve circulation and prevent turning vehicles from restricting flow along the highway in a cost-effective way.
    - Turns and acceleration lanes at Gray Whale Cove to make access to the beach safer and reduce slowdown along Highway 1
    - Left turn lanes at major businesses along SR-92 to improve business access and to promote safe, efficient highway traffic flow
  - **Standardized shoulder and edge treatment** (at Montara, Moss Beach and El Granada) Currently, the roadway cross-section of Highway 1 throughout the study area is made up of inconsistent roadway and lane widths, narrow or non-existent shoulders, and variable painted medians. The Highway 1 Safety and Mobility Improvement Study identified three Context Zones throughout the study area representing areas with similar characteristics and user needs. A consistent cross-section for each context zone, with defined lane widths, shoulders and striped on-street bike lanes, would contribute to driver understanding of the environment. Easily identifiable roadway edges, intersections, and driveways will provide a clear and safe environment for auto, bicycle, and pedestrians. The Context Zones definitions and proposed improvements are defined as follows:
    - **Rural Zones** – Sparsely developed and primarily agricultural or recreational use with high vehicles speeds: No improvements proposed
    - **Fringe Zones** – Transitional segments approaching or leaving coastal communities with increased pedestrian and bicycle activity and side street access/egress with lower vehicle speeds: Valley gutter to define roadway edge and consistent lane widths less than 12 feet on segments where speeds are below 45 mph
    - **Village Zones** – Coastal communities with potential for multimodal conflicts due to parking, retail and restaurant use, transit stops, and controlled intersections with

lower vehicle speeds: Curb and gutter to define roadway edge, consistent lane widths less than 12 feet, and raised medians where currently striped.

- **Installation of a Traffic Signal or Roundabout**, pending the outcome of a Caltrans Intersection Control Evaluation process. In order to maintain the village character of Moss Beach by managing vehicular traffic and improving pedestrian and bicycle safety, Connect the Coastside recommends installation of intersection control at three intersections there. In addition, intersection control exists at the eastern (lower) SR 92/Hwy 35 intersection and will be needed based on buildout projections at the upper (western) SR92/Hwy 35 intersection. Based on community preference and safety, the Connect the Coastside preference is for roundabouts at these five intersections. Roundabouts eliminate left turns by requiring traffic to exit to the right of the circle and reduce vehicular speeds, thereby improving safety at intersections. These especially improve bicycle and pedestrian safety from lower vehicle speeds, shorter crossing distances and greater visibility[8]. Funding availability for right of way purchase and construction are key considerations in choosing the ultimate improvement. These improvements will be necessary to address current intersection performance deficiencies and support planned development in Moss Beach and Princeton:
  - Highway 1 and California Avenue (Moss Beach)
  - Highway 1 and 16th Street (Moss Beach)[9]
  - Highway 1 and Cypress Avenue (Moss Beach)

  The SR-92 and SR-35 (lower) intersection currently has a traffic signal, but Connect the Coastside recommends replacing it with a roundabout to further improved operations. In addition, the SR-92- and SR-35 (upper) intersection will perform below LOS standards, and will meet a signal warrant under projected build out conditions, necessitating future intersection control there. Constructing a roundabout at the SR-92 and SR-35 (upper) intersection presents unique challenges, given the grade of SR-92 approaching the intersection, and the topography of the land surrounding the intersection. While a roundabout is the preferred improvement, feasibility is challenging and may necessitate use of a signal.
  - SR-92 and SR-35 (lower) (At Crystal Springs near Interstate 280)
  - SR-92 and SR-35 (upper)

- Carlos Street Reconfiguration
  - Close the terminus of Carlos Street with a guard rail; Acquire right-of-way and extend Carlos Street north to 16th Street (western edge of realigned right of way will be approximately 150 feet from eastern edge of Highway 1). Access to Carlos Street at its northern terminus will be via 16th Street, and the Highway 1/16th Street Roundabout.

[8] https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/case_studies/rounds4peds.pdf

[9] Intersection Control at 16th Street would be done in conjunction with closure of the Highway 1/Carlos Street intersection to facilitate, in part, development of the affordable housing site in Moss Beach at Cypress Point. A roundabout would likely require right of way acquisition.

- Install bus stop on Carlos Street with bus shelter. Buses will access Carlos Street at the north via the 16th Street/Highway 1 Roundabout, stop on Carlos at Cypress Point, and then proceed south on Carlos Street to Moss Beach. This will require coordination and agreement with SamTrans.

- **Roadway Widening**: Providing passing lane/climbing lane allows cars to pass the high volume of trucks on this roadway segment as well as provides a passing lane to go around right-turning cars:
  - Passing Lane/Climbing Lane on SR-92 (between Half Moon Bay City limit and existing two-lane segment)

- **Traffic Calming**: The implementation of traffic calming improvements such as speed display units and speed humps along the following streets is a cost-effective way to slow traffic and improve safety for bicycle and pedestrians.
  - Main Street (Montara): Project would construct curb extensions and crosswalks at the intersections of Main and 7th, Main and 8th, and Main and 9th. The project would also install a mini traffic calming circle at Main and 9th. Additionally, sidewalks (where they do not currently exist) and ADA curb ramps would be constructed on both sides of Main Street from 7th Street to 9th Street, and on the east side of the roadway from 9th Street to 10th Street.
  - Carlos Street (Moss Beach): The project would convert Carlos Street into a one-way (southbound) between Etheldore and California, reverse and restripe the existing diagonal parking along Carlos Street between Etheldore Street and California Avenue and . One or both utility poles on the north side of the roadway may need to be relocated; this cost is not assumed in this estimate.

- **Signage** providing accurate information makes drivers and pedestrians more alert and improves the safety of intersections and roadway segments. The *Highway 1 Safety and Mobility Improvement Study* acknowledges the lack of signage along Highway 1 for bicycle and pedestrian safety. The following signage have been identified in Connect the Coastside:
  - Addition of stop signs where missing on stop-controlled side streets on Highway 1 (Montara, El Granada)
  - "Trucks Keep Right" signage on SR-92 (between Half Moon Bay City limit and I-280)

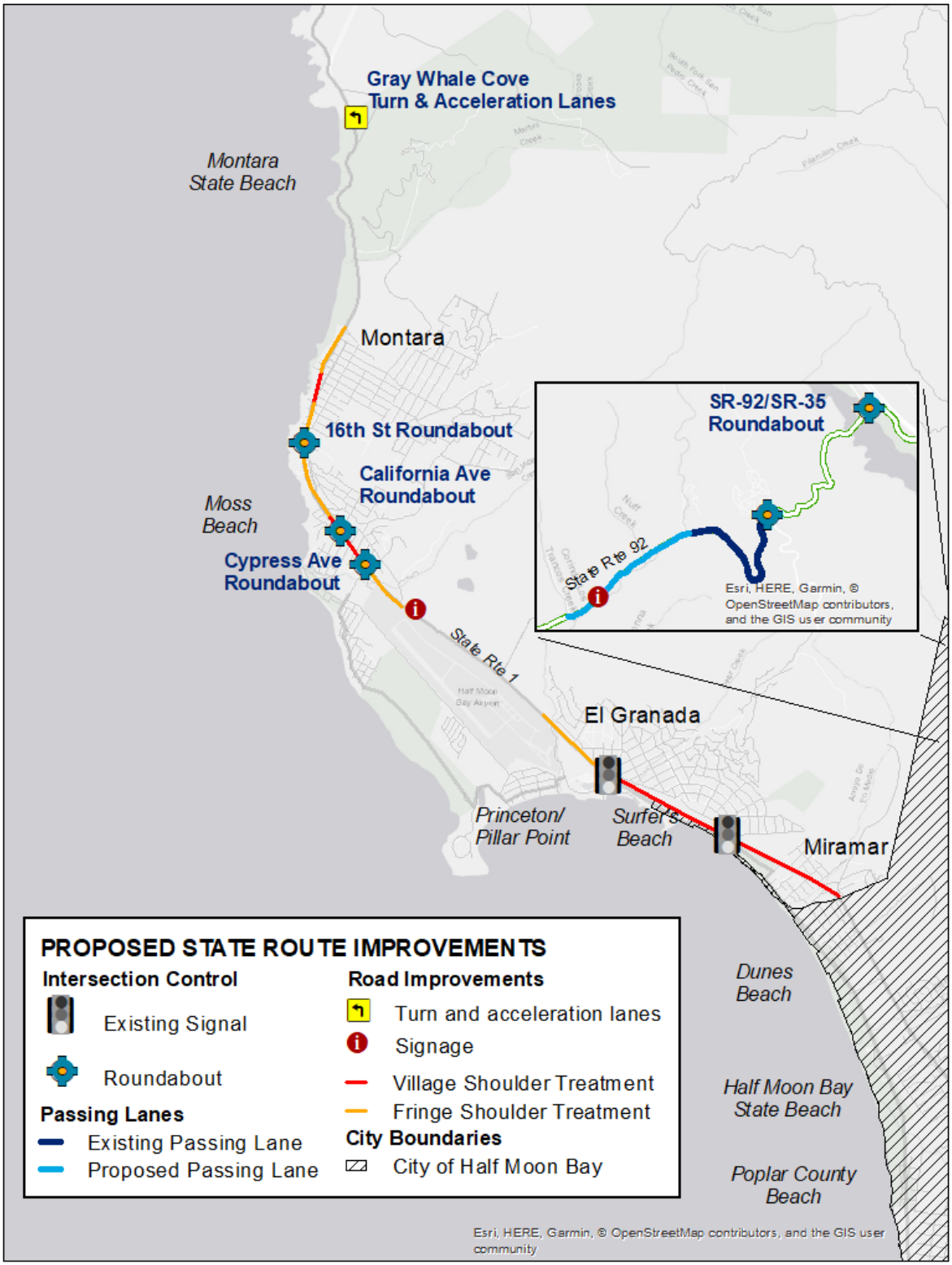


Figure 3. State Highway Roadway Facility Improvements

Figure 4. Local Roadway Facility Improvements (North)

Figure 5. Local Roadway Facility Improvements (North)

4.2.2 Bicycle and Pedestrian Facilities

Priorities for enhanced bicycle and pedestrian facilities throughout the Study Area are identified in the San Mateo Comprehensive Bicycle and Pedestrian Plan (CBPP), Highway 1 Safety and Mobility Improvement Study, 2000 San Mateo County Comprehensive Bicycle Route Plan, and specifically the Design Guidelines for Pedestrian Focus Areas. These improvements will provide facilities where few currently exist, and address mobility and accessibility barriers often encountered by low-income riders, agricultural workers, and transit users (for first- and last-mile trips) who are already biking and walking along Highway 1 and SR-92.

4.2.2.1 Planned Facilities along Highway 1 / California Coastal Trail / Multi-modal Trail

Proposed improvements to the Highway 1 corridor, the California Coastal Trail, and the planned Multi-modal Trail will improve its bicycle "level of service" as a countywide bicycle corridor, and enhance mobility for pedestrians in the area. The California Coastal Trail (CCT) is a network of public trails for walkers, bikers, equestrians, wheelchair riders and others along the 1200-mile California coastline. In the Midcoast, the planned CCT route is approximately 10 miles long from Point San Pedro to Half Moon Bay. The existing Midcoast trail alignment and configuration varies considerably. In some areas, it traverses roadways on the landside of Highway 1, such as in Montara where it is designated on Pedro Mountain Road, and in others it is an earthen blufftop hiking trail, such as in Pillar Point Bluff County Park. Some existing segments of the trail will be improved over time from what are currently Class II or Class III facilities to Class I trails, proximate to the Ocean. Connect the Coastside prioritizes completion of the CCT in the Midcoast.

The Midcoast Multi-Modal Trail (Parallel Trail), is a bicycle and pedestrian commuter trail that will provide an alternative means of transportation for residents of the Midcoast to safely access neighboring communities, town centers, schools and recreational destinations without having to travel on the highway. The Multi-modal Trail was conceptualized in the community-developed Highway 1 Safety and Mobility Improvement Study in Phase 1. The Trail will be separated from the highway and have minimal interaction with vehicular traffic allowing it to serve residents of all ages and abilities.

The Multi-Modal Trail (See Appendix A for proposed alignment) will span from Montara south to Miramar where it will connect with the Naomi Patridge Trail in Half Moon Bay. This will provide for a continuous, regional bicycle and pedestrian commuter trail. By providing residents the opportunity to walk and bicycle throughout the coastside, congestion on the highway should improve. The Multi-modal Trail would be easily accessed by residents living on the east side of Highway 1, require no highway crossings and act as a Safe Route to School for children at El Granada Elementary School. Connect the Coastside also proposes a Class I or Class II pedestrian and bicycle facility along Airport Street between Princeton and Moss Beach.

Together, these facilities will be part of the proposed North Coast Bikeway in the CBPP, connecting Daly City, Pacifica, and Half Moon Bay.

The Ohlone-Portola Heritage Trail in San Mateo County is a proposed recreation trail route system is a braided system of Class I, II and III bikeways, multi-use trails, riding and hiking trails and sidewalks. In select locations, the route is a share-the-road bicycle, pedestrian and equestrian route. Trail alignments for bicycles differ in places from those for pedestrians and equestrians because of management restrictions. The Heritage Trail begins at the Año Nuevo State Park Visitor Center, passes over Sweeney Ridge, and extends to Portolá's journey's end at State Historic Landmark in Menlo Park. Once completed the recreation route will be an approximately 97-mile-long regional trail that will link the bayside of San Mateo County with its coastside. For bicyclists, there is a near-term opportunity travel the entire route by

using existing streets in selected locations where off-road recreation route gaps currently exist. In Midcoast, the segment gaps and streets that could be used as an alternative in the near-term includes the segment following the California Coastal Trail to Cypress Avenue, Etheldore Street, Carlos Street, Farallone Avenue, and Kanoff Street that connects with Rancho Corral De Tierra trail system and Pedro Mountain Road.

Key pedestrian elements for the Highway 1 corridor that are identified in the plans include building new pedestrian pathways and more frequent and consolidated crossings for residents and visitors alike. Sidewalks would be constructed in developed areas or along access routes to recreational areas. According to the 2011 Comprehensive Bicycle and Pedestrian Plan (CBPP), pathways that range in width from just 4-feet to 12-feet would be built in undeveloped areas that feature pedestrian activity. It should be noted that under the ADA standards, 5 feet is the minimum width required to allow two wheelchairs (or strollers) to pass. Where sidewalks are less than 5-feet wide, the ADA standards require passing spaces to be constructed at least every 200 feet.

In conjunction with the development of these sidewalk facilities, current plans propose existing sidewalks to be upgraded with vertical curb and gutters. Uncontrolled crossings would be enhanced with high-visibility striping and infrastructure, and median islands used as refuges to shorten crossings where possible. Developed areas would have a limit of 600 feet between crossings along corridors.

Other focus areas identified in the above plans include pedestrian-scale lighting in developed areas, landscaped buffers at a minimum width of 5 feet where possible and clearing pathways of debris for both cyclists and pedestrians.

4.2.2.2 Planned Facilities along SR-92

The CBPP identifies SR-92 as a key corridor for bicycle and pedestrian facilities. Proposed improvements include a Class I bicycle facility in the form of 7-foot shoulders along SR-92 between Highways 1 and 35 (Upper), and a multiuse pathway along SR-92 between Highway 35 (upper) and the Interstate 280 bicycle-pedestrian overcrossing.

Key Projects identified in the 2000 San Mateo County Comprehensive Bicycle Route Plan and 2011 Comprehensive Bicycle and Pedestrian Plan are listed in **Table 17**. These include planned regional improvements both within and outside the Connect the Coastside study area.

Table 17 - Planned Bicycle and Pedestrian Facilities

Project	Jurisdictions	Description of Identified Priorities	Status
Coastside Bikeway Projects	San Mateo County, Half Moon Bay	Improvements to SR-92 between Half Moon Bay and Highway 280, including: - Improvements to upper and lower SR-92/SR 35 intersections - 7-foot shoulders on SR-92 between Hwy 1 and SR 35 - Pathway along SR-92 between SR 35 to I-280 bike-ped overcrossing.	San Mateo County: portions of the coast side trail project. Half Moon Bay: Construction of multi-use path along Highway 1.

Project	Jurisdictions	Description of Identified Priorities	Status
		Extension of multiuse coastal trail along Highway 1 north and south from Half Moon Bay.	
North Coast Bikeway	Pacifica, Daly City, Half Moon Bay	Pathway, wide shoulders, directional signing connecting Daly City, Pacifica and Half Moon Bay, including multiuse path on Highway 1.	Daly City: Bike lanes on Southgate Avenue Pacifica: Bike lanes on Palmetto Avenue, bike path along most of Highway 1 to San Pedro Mountain Road
Highway 1/ Multi-modal Trail Improvements		Sidewalks in developed areas or access routes to recreation areas; 4' – 12' pathway in undeveloped areas with pedestrian activity Vertical curb and gutter where sidewalks exist Obstacles removed from pedestrian way ADA-compliant curb ramps Pedestrian-scale lighting in developed areas Minimum 5' landscape buffer where possible On-street parking buffer in developed areas Crossings at key desire lines High visibility, enhanced crossings at uncontrolled locations Median islands Max 600' between crossings in developed areas Regular transit service during peaks in developed areas Convenient transit stops in developed areas Connected bike network	
Coastal Trail Improvements		Sidewalk improvements in Montara, Moss Beach (both coterminous with Multi-modal Trail) and Princeton Safe pedestrian crossings of Highway 1 at 1st Street in Montara, and 16th Street in Moss Beach	

Project	Jurisdictions	Description of Identified Priorities	Status
		Beach or top-of-bank trail in Princeton from Pillar Point wetland east to Capistrano Road, with bridge over Denniston Creek Grading, paving (where appropriate) at various blufftop locations throughout study area	
Major Barrier Crossings		10' - 20' paths or minimum 5' detached sidewalks with wider pathways where high pedestrian and/or bicycle demand is expected Minimum 12' path if there is vertical enclosure Obstacles removed from pedestrian way ADA-compliant curb ramps Pedestrian-scale lighting, at crossings at a minimum Maximum of 1 mile between crossings Marked crossings at signalized and stop controlled locations on access routes to barrier crossing Connected bike network	

4.2.2.3 Bicycle Parking

The CBPP identifies secure bicycle parking as a key element of the bicycle network especially at end-trip locations. The following types and relevant locations, within the study area, of bicycle parking have been identified to be of countywide significance and will be eligible for funding through the CFP process:

- Bicycle racks at regional destinations including:
  - Transit stations
    - No relevant locations
  - Transit hubs
    - No relevant locations
  - Community downtowns
    - Princeton, Moss Beach
    - Pillar Point Harbor Beach Area
    - Miramar Beach Area
    - Montara State Beach Area
    - Gray Whale Cove State Beach
  - Public hospitals
    - Seton Coastside Medical Center
  - Regional Parks
    - Rancho Corral De Tierra
    - McNee Ranch State Park
    - Fitzgerald Marine Reserve
    - Quarry Park

        - Pillar Point Bluff
- Bicycle lockers or similar long-term secure parking facility at the following regional destinations:
    - Transit stations
        - No relevant locations
    - Transit hubs
        - No relevant locations
    - Community downtowns
        - Not identified for lockers and long-term parking
    - Public Hospitals
        - Seton Coastside Medical Center
    - Regional Parks
        - Rancho Corral De Tierra
        - McNee Ranch State Park
        - Fitzgerald Marine Reserve
        - Quarry Park
        - Pillar Point Bluff

4.2.2.4 Proposed Pedestrian and Bicycle Facilities

Based on an evaluation of proposals from prior plans, community and stakeholder input, and application of the bicycle and pedestrian performance standards, the following pedestrian and bicycle improvements have been proposed to address safety and circulation concerns as well as to meet relevant performance standards.

- **Pedestrian Facility Improvements** such as walkways ensure connectivity and access by providing a more continuous walking path for pedestrians. Multi-use trail along Highway 1 and the coastal trail will provide pedestrians and bicyclists with a direct connection to communities and locales along Highway 1 and the Coast.
    - Coronado Street and Obispo Road/Ave Alhambra walkway (El Granada)
    - Multi-modal Trail Completion
        - Multi-modal (Parallel) Trail adjacent to Highway 1 for the entire study area. This trail is mainly for transportation purposes, such as Safe Routes to Schools.
        - Complete the Coastal Trail throughout the entire study area (paving of existing earthen portions to be determined by community planning efforts). In Montara, the Coastal Trail will be located primarily on streets (Second and Main), connecting to Moss Beach on the Multi-modal Trail between 11th and 16th, and then, crossing Highway 1 at 16th, along the coast side of Highway 1 along Vallemar Street, Weinke Way, California Avenue and Lake Street where it is aligned along the Bluff Trail until it joins Beach Way at Cypress Avenue in Princeton, and thence along Ocean Boulevard until it joins the Jean Lauer Bluff Trail in Pillar Point Bluff Park. In Princeton, the Coastal Trail extends west from the Bluff Trail along the West Beach Trail to Mavericks Beach, and east along West Point and Princeton Avenues, Broadway, Prospect Way, Capistrano Road, and thence along Pillar Point Harbor

Boulevard to its terminus at the boat launch ramp, where it connects to the shoreline Coastal Trail in Half Moon Bay. This trail is intended to be of recreational nature as transportation uses will be channeled through Multi-modal Trail to avoid overwhelming of the Coastal Trail.

- Striped pedestrian crossings of Highway 1 throughout the entire study area including Gray Whale Cove

- **Bicycle Facility Improvements** in addition to the Parallel and Coastal trails include bicycle lanes along SR-92 which greatly improve connectivity for bicyclists between San Mateo and Half Moon Bay. A bike lane along Capistrano Road would improve bicycle connectivity along Highway 1 and the Airport Street bike route provides a safe and cost-effective alternative route for recreational bicyclists away from the heavier traffic on Highway 1. Bike lanes along SR-92 can potentially have some form of separation measures such as flex posts or buffers for increased safety of bicyclists.
    - Highway 1 Class II Bike Lanes throughout the entire study area
    - SR-92 Class II Bike Lanes (between Half Moon Bay City limit and I-280)
    - Capistrano Road Class II Bike Lanes (Princeton)
    - Airport Street Class I/II/III Bike Trail/Lanes/Routes (Moss Beach) with the following options for each:
        - Class I trail on the Half Moon Bay Airport east side of Airport Street. Wetlands bridging is necessary for this option
        - Class II bike lane with sidewalk in developed areas on west side of Airport
        - Class II or III bike lanes or route on Airport Street
    - Bicycle and pedestrian improvements in “downtown” Moss Beach
        - Install sidewalks, curbs and driveway delineations

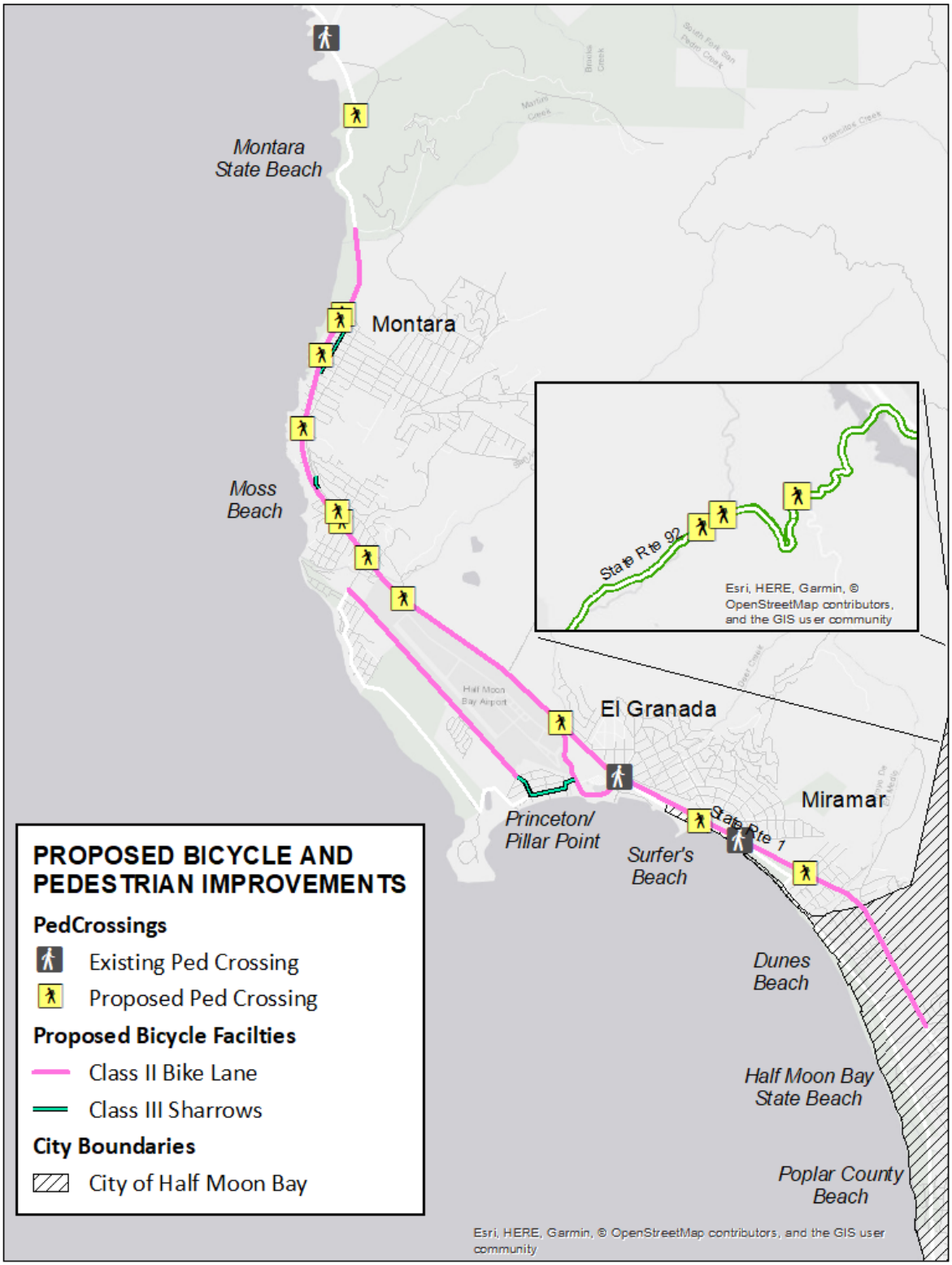


Figure 6. Proposed Bicycle and Pedestrian Facility Improvements

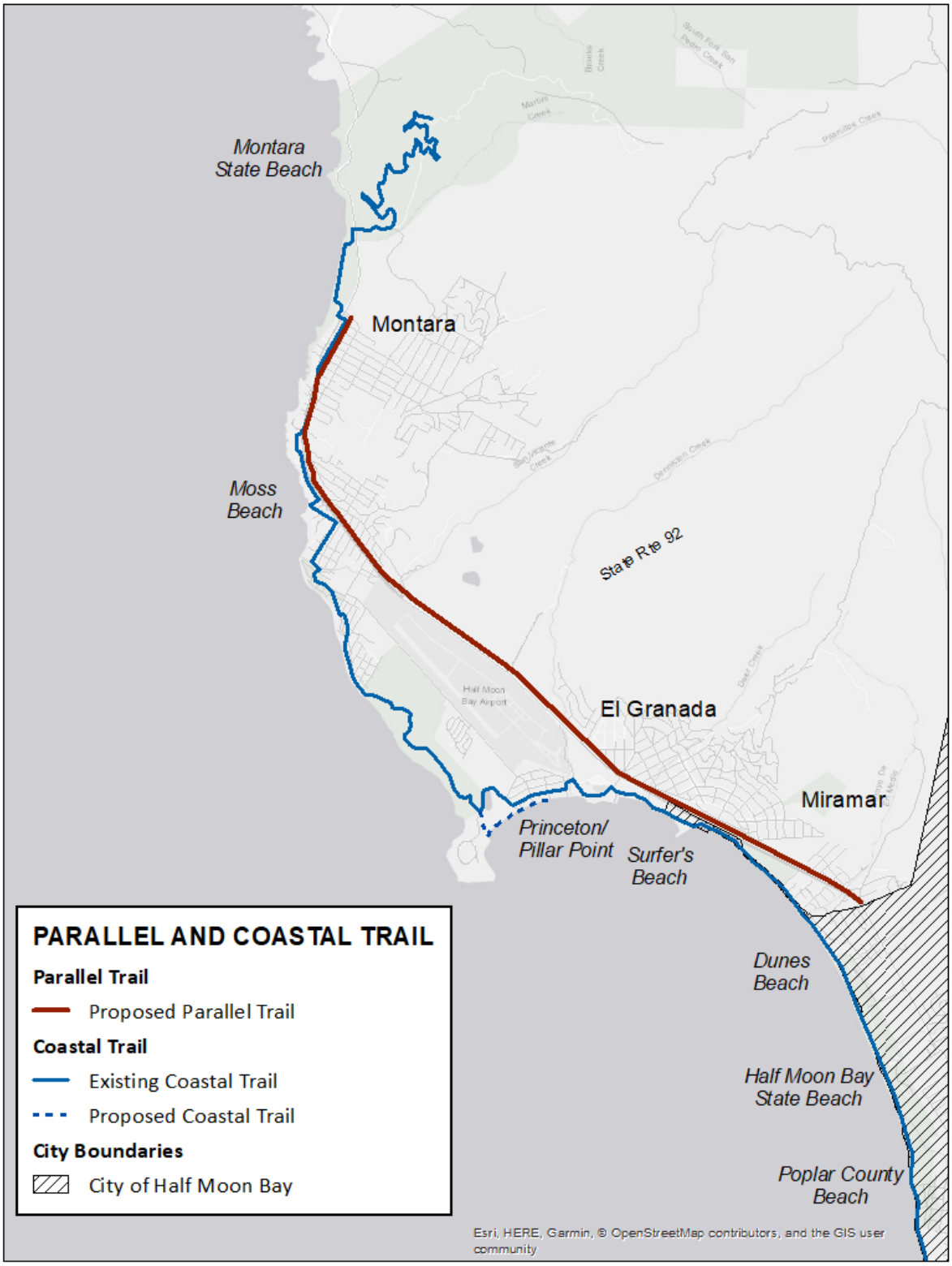


Figure 7. Existing and Proposed Coastal Trail

4.2.3 Transit Facilities and Operations

Increases in transit service will be based upon future discussions and negotiations with SamTrans. Connect the Coastside identified several potential improvements to transit service for the Midcoast, including increased operational frequency of weekend bus service for Line 17 and Line 294 . These services will provide connections to regional transit providers during the morning and evening peak periods with limited stops. Another potential improvement involves rerouting Line 17 to directly serve the site in Moss Beach designated in the LCP for affordable housing development. This could involve routing the bus past the site via a new roundabout at 16th Street, or routing north from downtown Moss Beach, turning around at the site and returning to the regular route.

The SamTrans Coastside Study 2018 recognizes a near-term improvement to evaluate opportunities for better timed transfers to and from Coastside routes. This will help minimize transfer and wait times, improving connectivity where a transfer is needed. Longer term service improvements include a potential extension of Route 118 south to Half Moon Bay, and improve the Linda Mar Park and Ride in Pacifica. It also recommends the evaluation of additional park-and-ride facilities in the mid-coast or Half Moon Bay area, providing parking for passengers on the extended 118 route for weekday commutes as well as a parking place for weekend coastal visitors. The County will explore these and other transit service improvement options by collaborating with SamTrans on its Reimagine SamTrans Planning effort, an 18-month project to Improve the experience for existing SamTrans customers; grow new and more frequent ridership on SamTrans; and build SamTrans' efficiency and effectiveness as a mobility provider.

Bus stop improvements i.e. addition of bus stop benches, shelters and other facilities are proposed at various locations, including at Carlos Street and California Avenue in Moss Beach. Many Coastside residents state that pedestrian improvements, such as safe highway crossings, sidewalk, and pedestrian trails will increase transit ridership, because people can safely and conveniently access bus stops.

Near-term improvements:

- **Extension of the 118 route to serve Daly City BART.** Route 118 previously only served Colma BART. By extending service to Daly City BART, passengers have new access to a BART station with twice as much train service and a slightly less expensive fare for trips heading north into San Francisco. Other portions of the current route will not change. *This change took effect on January 21, 2018.*
- **Introduction of one additional trip in the evening on the 118.** The new trip will depart Daly City BART around 7:30 pm. This will offer more flexibility to passengers that require a later connection between BART and SamTrans. *This change took effect on January 21, 2018.*
- **Educate the community on how to use the FLX service in Pacifica.** We heard there was confusion around how to use the FLX service in Pacifica. This outreach will seek to spread information on how to call SamTrans to request a deviation on the FLX route, as well as how to use the FLX route as a normal service with stops and timetables. *This campaign was conducted in 2018.*
- **Evaluate opportunities for better timed transfers to and from Coastside routes.** This improvement will be an ongoing effort to evaluate scheduling with respect to the transfer experience, minimizing wait times and improving connectivity where a transfer is required. *This is an ongoing effort.*
- **Add a new northbound bus stop at the current Carlos Street intersection with Highway 1 in northern Moss Beach.** This facility could serve the proposed affordable housing project nearby. Both north and southbound stops south of the proposed 16th Street roundabout should be improved with concrete platforms and benches, and with sufficient ridership, shelters.

Longer-term improvements, requiring significant resource investment, which will be further studied individually by SamTrans staff:

- **Expand Route 118 to new places such as Half Moon Bay and increase frequency.** This route would offer a direct ride from points south of Pacifica to BART and increase the frequency of trips from Pacifica directly to BART. This service is envisioned to run on weekdays at 20 or 30-minute frequency in the peak commute periods and hourly in the midday periods.
- **Invest in physical improvements at Linda Mar park-and-ride and new park-and-rides if needed, such as secure bike parking, better waiting areas, restrooms, and other amenities.** This would require significant coordination with Caltrans, the owner of the Linda Mar park-and-ride, and the cities of Pacifica and Half Moon Bay.
- **Continue to assess the potential for non-traditional transportation** options to solve mobility challenges on the Coast, such as bike share, microtransit, and on-demand services. As a result of this recommendation, the SamTrans OnDemand pilot was launched in Pacifica in 2019 and is currently still operating as of January 2020 while staff evaluates the pilot's performance and whether the service could be viable in other locations.

4.2.4 Recreational and Transit Parking Facilities

The lack of parking capacity for weekday commuters and the large amount of weekend recreational parking demand discourages commuter use of transit, reducing service viability and results in a spillover of recreational demand into community parking areas. The *San Mateo County Coastside Access Study* conducted in 2015 demonstrates a need for additional parking in the Midcoast. The following parking improvements were identified in prior studies and included in Connect the Coastside:

- Development of a Park and Ride Shuttle to operate during weekends and events
- Development of pricing strategies to maintain an 85% lot occupancy
- Wayfinding signage
- Upper Gray Whale Cove Parking Lot Improvements
- Carlos Street On-Street Parking (between Vermont Avenue and Etheldore Street)
- El Granada Diagonal Parking (between Highway 1 and Avenue Alhambra, specific location to be determined)
- Moss Beach Park and Ride/Weekend Recreational Parking (South side of Etheldore at south end of Moss Beach)
- Collaboration with SamTrans and HMB on a new Park and Ride in HMB to support transit

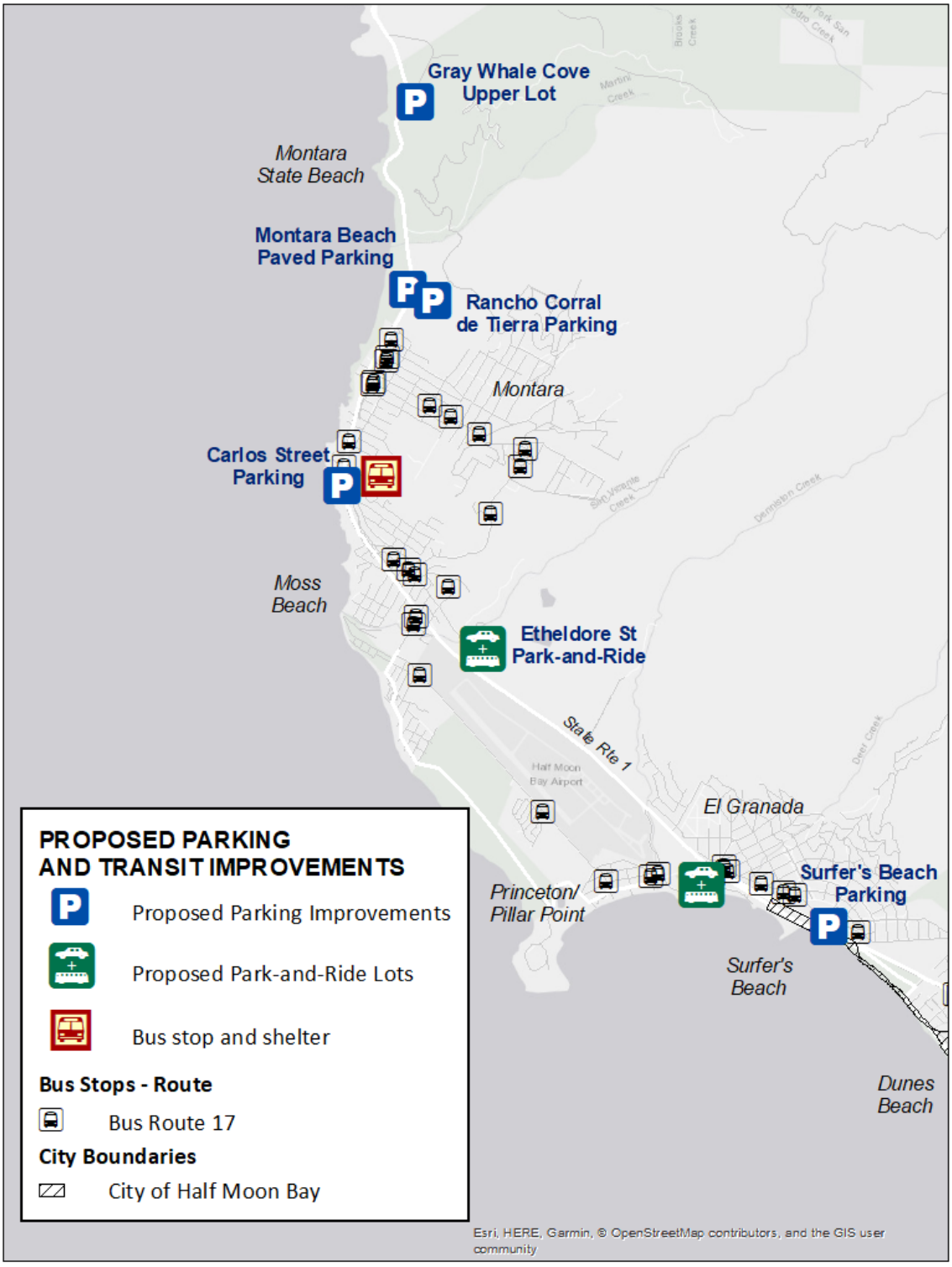


Figure 8. Proposed Parking and Transit Improvements

4.2.4.1 Lot Merger Program

The program would establish a process for contiguous substandard parcels under the same ownership to be merged, in the R-1, R-3, and RM-CZ zoning districts on the Midcoast. The lot merger program would apply as follows:

- At least two contiguous parcels in the same ownership;
- At least one parcel is undeveloped;
- The area of at least one lot is less than 4,500 square feet in the R-1 or R-3 districts, and less than 5,000 square feet in the RM-CZ district.

Lots meeting these criteria would be merged to create a parcel or parcels that meet the minimum parcel size requirements in R-1 or R-3 districts, or with a goal to reach at least 5 acres in area in the RM-CZ district.

4.2.4.2 Lot Retirement Program

Connect the Coastside recommends implementation of a lot retirement program that requires one-to-one retirement of development rights on existing lots in exchange for new lots, reducing Buildout potential and lessening the effect of new development on the transportation network.

The recommended lot retirement program would be designed to provide flexibility to project applicants by allowing them to either:

- Directly purchase existing lots from willing sellers, and extinguish development rights;
- Donate lots to a land trust or similar organization that would do the same; or
- Pay an in-lieu fee to the City or County to acquire and retire development rights from willing sellers at a 1:1 ratio. For the in-lieu fee to function properly, an appropriate price per development credit would need to be established, periodically reviewed and updated.

Acquisition of lots for lot retirement would be through donation or purchase. No property owner would be forced to sell their land for the purposes of this program. Lot retirement would be required only when new residential subdivisions are proposed. This would further support a priority for infill development and for visitor-serving and other commercial development.

4.2.4.3 Traffic Fee Mitigation Program

Connect the Coastside recommends a traffic Fee Mitigation Program that would collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the amount of new development expected. An assessment of the portion of total project need attributable to growth will determine what a legally defensible rate structure might be for a Transportation Impact Mitigation Fee Program.

4.3 Land Use Policies

Land Use policies such as lot merger and lot retirement programs could reduce transportation demand by reducing buildout potential. Attaching a mitigation fee to development can lead to reduced development as a result of additional costs. For the developments that do occur, these fees assist in providing a portion of funding for projects identified in this document.

LCP Policy 2.53 requires, among other things that Connect the Coastside "evaluate the feasibility of developing an in lieu fee traffic mitigation program…and development of a mandatory lot merger program." Connect the Coastside evaluates these strategies and includes recommendations for implementation.

4.3.1 Lot Merger Program

The County will establish a process for merging contiguous substandard parcels under the same ownership. This would apply to lots with an area less than 4,500 square feet (R-1 or R-3 residential districts), or less than 5,000 square feet (RM-CZ districts). The program would initially be voluntary with incentives for 21 months and then become mandatory with a hearing and appeal process.

Implementation of a mandatory lot merger program would reduce the number of undeveloped parcels along the Midcoast. The effect of this reduction in lots is already accounted for in the estimate of Buildout potential, because lot mergers were assumed to take place in the Midcoast LCP.

4.3.2 Lot Retirement Program

A lot retirement program requiring one-to-one retirement of development rights on existing lots in exchange for new lots resulting from subdivision would have the effect of reducing Buildout potential and lessen the effect of new development on the transportation network. Mandatory lot retirement at a one-to-one ratio (1:1) as a condition of approval for some proposed residential subdivisions to mitigate impacts to the transportation system and public access to the coast could be an effective strategy, but will be reevaluated following implementation of the Lot Merger program to determine its efficacy, and whether a lot retirement program is feasible and would be appreciably effective at reducing traffic .

4.3.3 Development Review and Transportation Mitigation Fee Program

Development of a fee program collect fees for new residential and non-residential development on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. The rates would be based on a specified list of projects needed to mitigate the impacts of the growth, the total estimated capital cost of those projects and the amount of new development expected.

5 COST AND FUNDING OF IMPROVEMENTS

To inform fee study analysis and project funding sources, cost estimates were carried out as presented in this chapter. Existing and potential funding sources and mechanisms have been described in Section 5.2.

5.1 Cost Estimate of Improvements

Table 18 gives an overview of cost and impact for each identified project. These metrics were identified from the cost-impact analysis carried out as part of Connect the Coastside report for Evaluation of Transportation Alternatives to Address Buildout Deficiencies.

Table 18 - Cost and Impact of Recommended Projects

Mode	Project #	Recommended Project List	Jurisdiction	Deficiency from a standard	Safety/ Circulation Issue	Cost	Network Impact
Roadway	R1	Gray Whale Cove Turn and Acceleration Lanes	Midcoast		X	Low	Low
	R2	SR-1 Side-Street Stop Signs	El Granada		X	Low	Low
	R3A	SR-1 Shoulder Treatment	El Granada		X	Low	Low
	R3B	SR-1 Shoulder Treatment	El Granada		X	Medium	Medium
	R4	California Avenue Signal/Roundabout	Moss Beach	X	X	High	High
	R5	Cypress Avenue Multi-Lane Signal/Roundabout	Moss Beach	X		High	High
	R6	16th Street Roundabout	Moss Beach	X		Medium	Medium
	R7	Carlos Street Closure	Moss Beach		X	Low	Low
	R8	SR-92/SR-35 Roundabout	Montara	X		High	High
	R9	Carlos Street Traffic Calming	Moss Beach		X	High	High
	R10	Main Street Traffic Calming	Montara		X	High	High
	R11	SR-92 Passing/Climbing Lanes	SMC		X	High	High

Mode	Project #	Recommended Project List	Jurisdiction	Deficiency from a standard	Safety/ Circulation Issue	Cost	Network Impact
	R12	SR-92 Truck Signs	Half Moon Bay		X	Low	Low
	R13	SR-92 Left Turn Lanes	SMC		X	Medium	Medium
Pedestrian	Pe1	Striped Pedestrian Crossing with Beacons	Varies		X	Low	Low
	Pe2A	SR-1 Multi-modal Trail	El Granada and Moss Beach	X		Low	Low
	Pe2B	SR-1 Multi-modal Trail	Moss Beach, El Granada, Half Moon Bay	X		Medium	Medium
	Pe2C	SR-1 Multi-modal Trail	El Granada, Half Moon Bay, Montara, Moss Beach	X		High	High
	Pe3	Coronado Street and Obispo Road Sidewalk	El Granada	X		Medium	Medium
	Pe4	Coastal Trail	All		X	Medium	Medium
Bicycle	B1	Capistrano Road Bicycle Facilities	Princeton		X	Medium	Medium
	B2	SR-92 Bike Lanes	SMC		X	High	High
	B3	SR-1 Bike Lanes	ALL	X		Medium	Medium
	B4	Airport Street Class I/II/III Bike Routes	Moss Beach		X	Medium	Medium
	B5	Bike/Ped improvements in downtown Moss Beach	Moss Beach		X	Low	Low
Transit	T1	Bus stop amenities	Various	X		Low	Low
	T2	Increased weekend SamTrans service	Various	X		Low	Low
	T3	Transit Stop Improvements	Moss Beach	X		Low	Low

Mode	Project #	Recommended Project List	Jurisdiction	Deficiency from a standard	Safety/ Circulation Issue	Cost	Network Impact
Parking	Pa1	Montara State Beach Parking Lot Improvements	SMC	X		Low	Low
	Pa2	Upper Gray Whale Cove Parking Lot Improvements	SMC		X	Low	Low
	Pa3	Wayfinding	ALL		X	Low	Low
	Pa4	Carlos Street On-Street Parking	Moss Beach		X	High	High
	Pa5	El Granada Diagonal Parking	El Granada	X		High	High
	Pa6	Park and Ride at Etheldore St (South Terminus)	Moss Beach	X		Low	Low

The following sections summarize the cost estimates of recommended improvements of roadways, pedestrian and bicycle, and parking facilities. The total cost for these three categories of improvements is approximately $100 million. The cost of transit service improvements is indeterminate at this time and requires developing cost estimates in consultation with SamTrans.

5.1.1 Roadway Facilities

Table 19 - Cost Estimates of Roadway Projects

No.	Project Name	Project Location	Total Project Cost
R1	Gray Whale Cove Turn and Acceleration Lanes	Gray Whale Cove Parking Lot	$1,495,000
R2	SR-1 Side-Street Stop Signs	Montara and El Granada	$30,000
R3A	SR-1 Paved Shoulder and Curb (Phase A)	El Granada, Moss Beach, Montara	$1,297,200
R3B	SR-1 Paved Shoulder and Curb (Phase B)	El Granada, Moss Beach, Montara	$1,622,400
R4	California Avenue Roundabout	SR-1 and California Avenue, Moss Beach	$5,700,000
R5	Cypress Avenue Multi-Lane Roundabout	SR-1 and Cypress Avenue, Moss beach	$7,219,815
R5A	Cypress Avenue Single Lane Roundabout	SR-1 and Cypress Avenue, Moss beach	$5,500,000
R6	16th Street Roundabout	Montara	$5,700,000
R7	Carlos Street Closure and Realignment	Moss Beach	$2,588,000
R8	SR-92/SR-35 (Lower) Roundabout	SR-92 and SR-35 (Lower)	$7,325,000
R9	Carlos Street Traffic Calming	Carlos Street from Etheldore Street to California Avenue in Moss Beach	$344,000
R10	Main Street Traffic Calming	Main Street in Montara	$588,000
R11	SR-92 Passing/Climbing Lanes	Between Half Moon Bay and San Mateo	$12,802,000
R12	SR-92 Truck Signs	Between Pilarcitos Creek and SR-35	$12,300
R13	SR-92 Left Turn Lanes	At select business locations along SR-92	$471,000
R14	SR-92/SR-35 (Upper) Roundabout	SR-92 and SR-35 (Upper)	$7,325,000
	Recommended Alternative Roadway and Intersection Total		**$ 60,019,715**

[1]The projects are still being developed and cost estimates do not include details such as extensive grading, land acquisition, retaining walls etc.

5.1.2 Pedestrian and Bicycle Facilities

Table 20 - Cost Estimates of Pedestrian and Bicycle Facilities Projects

No.	Project Name	Project Location	Total Project Cost
Pe1	Striped Pedestrian Crossing with Beacons	Varies	$5,000,000
Pe2A	SR-1 Multi-Modal Trail	Miramar, El Granada	$5,512,000
Pe2B	SR-1 Multi-Modal Trail	El Granada, Moss Beach	$9,000,000
Pe2C	SR-1 Multi-Modal Trail	Moss Beach, Montara	$7,000,000
Pe3	Coronado Street and Obispo Road Sidewalk	El Granada	$9,000,000
Pe4	Coastal Trail	All	TBD
Pe5	Bay Area Ridge Trail Crossing of SR-92	SR-92 at Upper SR-35 Intersection	TBD
B1	Capistrano Road Bicycle Facilities	Princeton	$1,000,000
B2	SR-92 Bike Lanes	SMC	$46,085,000
B3	SR-1 Bike Lanes	ALL	$3,066,000
B4	Airport Street Class I Bike Route	Moss Beach	$1,900,000
B5	Bike/Ped improvements in downtown Moss Beach	Moss Beach	$ 250,000
Recommended Alternative Pedestrian and Bicycle Facilities Total			**$ 87,813,000**

5.1.3 Transit Facilities and Operations

The cost for transit improvements are indeterminate at this time. The cost of bus benches, rerouting of current service and establishing and operating new service will be determined in consultation and collaboration with SamTrans. These improvements will most likely involve cost-share between the County and SamTrans, grants or other funding sources.

5.1.4 Parking Facilities

Table 21 - Cost Estimates of Parking Facilities Projects

No.	Project Name	Project Location	Total Project Cost
Pa1	Montara State Beach Parking Lot Improvements	Northernmost Montara State Beach Parking Lot	Completed
Pa2	Upper Gray Whale Cove Parking Lot Improvements	Upper Gray Whale Cove Parking Lot	$1,184,000
Pa3	Wayfinding Signage	Midcoast	$341,000
Pa4	Carlos Street On-Street Parking	Carlos Street from Etheldore Street to California Avenue in Moss Beach	$40,000
Pa5	El Granada Diagonal Parking	Current SR-1 alignment from Coronado Street to Capistrano Road	TBD
Pa6	Park and Ride at Etheldore St (South Terminus)	Moss Beach	TBD
	Recommended Alternative Parking Facilities Total		**$ 1,565,000**

5.2 Funding Sources and Mechanisms

Funding for the proposed improvements can be potentially sourced from the grants and funds listed in the following sections, as well as from other sources not mentioned here.

5.2.1 Existing Funding Sources

The following section contains a listing of current and planned transportation improvement projects identified in regional and local level planning documents in San Mateo County. These projects are segregated into the following categories in **Table 22**:

- Highway Improvements/Roadway Maintenance
- Transit Capital/Operations
- Bicycle and Pedestrian Improvements
- Enhancement/Transit Oriented Development/Transportation for Livable Communities/Congestion

The estimated cost of each category is matched with the most applicable potential source of funds in **Table 23.**

Table 22 – Recommended Projects Categorization for Funding

Project #	Project Name	Highway Improvements/ Roadway Maintenance	Transit Capital/ Operations	Enhancement/ TOD/ Livable Communities/ Congestion Management	Bike and Pedestrian Improvements
R1	Gray Whale Cove Turn and Acceleration Lanes	X			
R2	SR-1 Side-Street Stop Signs	X			
R3A	SR-1 Shoulder Treatment	X			
R3B	SR-1 Shoulder Treatment	X			
R3C	SR-1 Shoulder Treatment	X			
R4	California Avenue/Hwy 1 Signal or Roundabout	X			
R5	Cypress Avenue Multi-Lane Roundabout	X			
R6	16th Street Roundabout	X			
R7	Carlos Street Closure	X			
R8	SR-92/SR-35 Roundabout	X			
R9	Carlos Street Traffic Calming	X			
R10	Main Street Traffic Calming	X			
R11	SR-92 Passing/Climbing Lanes	X			
R12	SR-92 Truck Signs	X			
R13	SR-92 Left Turn Lanes	X			
Pe1	Striped Pedestrian Crossing with Beacons				X
Pe2A	SR-1 Multi-modal Trail				X
Pe2B	SR-1 Multi-modal Trail				X
Pe2C	SR-1 Multi-modal Trail				X
Pe3	Coronado Street and Obispo Road Sidewalk				X

Project #	Project Name	Highway Improvements/ Roadway Maintenance	Transit Capital/ Operations	Enhancement/ TOD/ Livable Communities/ Congestion Management	Bike and Pedestrian Improvements
Pe4	Coastal Trail				X
B1	Capistrano Road Bicycle Facilities				X
B2	SR-92 Bike Lanes				X
B3	SR-1 Bike Lanes				X
B4	Airport Street Class I/II/III Bike Routes				X
B5	Bike/Ped improvements in downtown Moss Beach				X
T1	Bus stop amenities		X	X	
T2	Increased weekend SamTrans service		X		
T3	Transit Stop Improvements		X		
Pa1	Montara State Beach Parking Lot Improvements	X			
Pa2	Upper Gray Whale Cove Parking Lot Improvements	X			
Pa3	Wayfinding	X			
Pa4	Carlos Street On-Street Parking	X			
Pa5	El Granada Diagonal Parking	X			
Pa6	Etheldore Park and Ride	X			

Table 23 - Potential Funding Sources for Project Categories

	Highway Improvements / Roadway Maintenance	Transit Capital/ Operations	Enhancement/TOD/ Transportation for Livable Communities/Congestion Management	Bike and Pedestrian Improvements	Agency
Federal Programs					
Better Utilizing Investments to Leverage Development (BUILD) Grant (Formerly TIGER)	X			X	US DOT
Congestion Management & Air Quality (CMAQ)			X	X	FHWA
Surface Transportation Block Grant (STBG) Program	X			X	FHWA
State Programs					
Active Transportation Program (ATP) Grant				X	Caltrans
Sustainable Communities Grant			X	X	Caltrans
Strategic Partnerships Grant	X	X	X		Caltrans
Adaptation Planning Grant	X	X	X	X	Caltrans
State Highway Operation and Protection Program (SHOPP)	X			X	Caltrans
Highways Safety Improvement Program (HSIP) Grant	X			X	Caltrans
Transit and Intercity Rail Capital Program (TIRCP)		X		X	CTC
State Transportation Improvement Program (STIP)	X			X	CTC
Trade Corridor Enhancement Program (TCEP)	X			X	CTC
State-Local Partnership Program (LPP)	X		X	X	CTC
Office of Traffic Safety Grants			X		OTS

	Highway Improvements / Roadway Maintenance	Transit Capital/ Operations	Enhancement/TOD/ Transportation for Livable Communities/Congestion Management	Bike and Pedestrian Improvements	Agency
Recreational Trails Program (RTP)				X	CA Department of Parks and Recreation
Affordable Housing and Sustainable Communities (AHSC) Program			X	X	CA Strategic Growth Council
Transformative Climate Communities (TCC) Program		X	X	X	CA Strategic Growth Council
Environmental Enhancement and Mitigation (EEM) Grant Program				X	CA Natural Resources Agency
Urban Greening Grant Program				X	CA Natural Resources Agency
Stormwater Management Program				X	State Water Resources Control Board
Regional Programs					
OBAG	X		X	X	MTC
TDA Article 3			X	X	MTC
Regional Measure 1, 2, 3, and Future Regional Measures	X	X	X	X	MTC
Regional Active Transportation Program			X	X	MTC
Bicycle Rack Voucher Program					BAAQMD

	Highway Improvements / Roadway Maintenance	Transit Capital/ Operations	Enhancement/TOD/ Transportation for Livable Communities/Congestion Management	Bike and Pedestrian Improvements	Agency
Measure A	X	X	X	X	C/CAG of San Mateo County
AB 664 Net Toll Revenue Reserves		X	X		MTC
Transportation Funds for Clean Air (TFCA)		X	X	X	BAAQMD
Measure M San Mateo County Vehicle License Fee			X		C/CAG of San Mateo County
Congestion Relief Plan (C/CAG Member Agency Dues)	X	X	X		C/CAG of San Mateo County
Peninsula Corridor Joint Powers Board (JPB) Member Fees		X	X		
Transportation Mitigation Fees			X		
Clean Air Funds (CAFs) - Category: Alternative Transportation and or Public Education				X	
Regional Transportation Fees (RTIF)	X	X			
Lifeline Transportation Program (LTP)			X		
Vehicle Registration Fees	X			X	Local Jurisdictions
Local Programs					
Developer Fees/Transportation Impact Fees	Varies per jurisdiction and specific impact fee programs.				Local Jurisdictions

5.2.2 Potential Transportation Impact Mitigation Fee Program

The level of funding that might be available from a transportation impact mitigation fee program has been estimated based on the following inputs:

- The list of transportation projects and cost estimates to be included in the fee program
- Forecast of future land use – the potential for new residential units and new nonresidential uses within the study area
- Allocation of Costs to New Development – the percentage of project costs that can be associated with new development
- A traffic forecast for the year 2040 – this includes the volume of traffic over specific roadway segments during the peak period as well as vehicle trip origins and destinations

5.2.2.1 Fee Program Project List

The list of projects that would be included in the mitigation fee program is consistent with those described in **Table 19**, **Table 20** and **Table 21**. Of the total project costs, only a portion can be allocated to the fee program by demonstrating a nexus between the project need and new development.

5.2.2.2 Growth Potential

The quantity of new development expected in the study area was derived from the land use buildout analysis. Factors scaling the transportation impact of other land uses to the single-family dwelling unit have been developed using standard trip generation rates, average trip lengths, and pass-by trip percentages (see **Table 24**). These Dwelling Unit Equivalent (DUE) rates are applied in dividing improvement costs on an equivalent unit basis for transportation impact fee calculation.

5.2.2.3 Fee Program Cost Allocation

The four roadway intersection or segment improvements included in the Connect the Coastside project list all address existing level of service (LOS) deficiencies. In this case, the fair share allocation of the improvement project costs is the portion of total traffic at each project location accounted for by new trips due to growth (excluding any new through trips).

Bicycle and pedestrian improvements are localized improvements serving trips that have their origin or destination within the study area rather than through trips. Lack of bicycle and pedestrian facilities is an existing deficiency in the study area; hence the improvements will benefit both existing and future residents. Since the improvements will serve the existing and future bicycle and pedestrian demand, the cost of those projects allocated to new development will equal the new development's proportional share of the total future development (existing plus new development) in the Connect the Coastside study area (measured in Dwelling Unit Equivalents or DUEs).

Similarly, there are a number of projects which address safety concerns, design standard deficiencies, or benefit multiple modes of transportation. Examples of these include installation of stop signs, parking lot improvements, and roadway shoulder and curb improvements. Since these types of projects also benefit both existing and new development, the cost of those projects allocated to new development is also the new development's proportional share of the total future development (existing plus new development) in the Connect the Coastside study area.

5.2.2.4 Traffic Forecast

Traffic forecasts were generated with the City/County Association of Governments (CCAG) travel demand model, using the same set of outputs employed for the Buildout Analysis and Traffic Projections Report.

The CCAG travel model was used to perform select link assignments of future (2040) PM peak period traffic passing through roadway project locations. These select link assignments are used to produce an origin destination matrix of the vehicle trips passing through model network links or nodes representative of the roadway project locations. The vehicle trip origins and destinations were then categorized as internal or external to the Connect the Coastside study area to separate through traffic from trips starting or ending in the study area (local traffic). The percentage of local traffic attributable to growth was estimated by multiplying the local trips by the percentage of growth DUEs within the study area **(Table 25).**

5.2.2.5 Estimated Fees

Table 26 summarizes the transportation impact fee calculation. A total of approximately $15.7 million has been allocated to the fee program. The total allocated costs are distributed across an expected 2,620 DUEs, resulting in a fee of $5,979 for each single-family dwelling unit, $3,382 for each multifamily dwelling unit, and costs of $8.04, $7.00, and $6.52 per square foot for retail, office and industrial development, respectively.

Table 24 - Dwelling Unit Equivalent (DUE) Rates

Land Use Category	PM Peak Hour Trip Rate per Unit	Unit	Trip Length (miles)	Percent New Trips	VMT per Unit	DUE per Unit
Single-Family	0.99	Dwelling Unit	5.0	100	4.95	1.00
Multi-Family	0.56		5.0	100	2.80	0.57
Retail	3.81	Square Feet	2.3	76	6.66	1.35
Office	1.40		4.5	92	5.80	1.17
Industrial	1.15		5.1	92	5.40	1.09

Source: DKS Associates, 2017

Table 25 - Percentage of Local Growth Traffic at Selected Project Locations, 2040 PM Peak Period

	Total Trips			Local Trips		Local Growth %
	Local	Through	Total	Existing	Growth	
Hwy 1 near California and Cypress	4,767	17	4,785	3,799	969	0.20
SR-92 east of Half Moon Bay	11,734	536	12,271	9,350	2,385	0.19
Intersection of SR-92 and SR-35	11,706	1,196	12,902	9,327	2,379	0.18

Table 26 - Nexus-Based Fee Rates for the Connect the Coastside Area

Cost of Improvements Allocated to Coastside Area Growth			$15,666,863
Growth in Dwelling Unit Equivalents (DUEs)			2,620
Cost per DUE			$5,978.83
Land Use	**Units**	**DUE per Unit**	**Fee per Unit[1]**
Single-Family	Dwelling Unit	1.00	$5,979
Multi-Family		0.57	$3,382
Retail	1000 Square Feet	1.35	$8,044
Office		1.17	$7,001
Industrial		1.09	$6,517

1) Fee per Unit = (Cost per DUE) x (DUE per Unit)

6 PLAN IMPLEMENTATION

The purpose of the **Comprehensive Transportation Management Plan "Connect the Coastside"** is to identify and prioritize actions that the County, Caltrans, SamTrans, and others can take to addresses transportation challenges along the Highway 1 corridor throughout the urbanized Midcoast (Montara to Half Moon Bay), the Highway 92 corridor from Interstate 280 to Highway 1, and within the town centers, as well provide a future vision for these corridors and communities. Since there is insufficient funding to implement all of the projects identified in this plan, this chapter synthesizes the results of the project evaluations and recommendations for implementation priorities, including a discussion of potential funding sources.

6.1 Actors, Partners and Stakeholders

Implementation of Connect the Coastside will require independent and collaborative action by a number of actors with responsibility for improving and maintaining transportation infrastructure and service within the Highway 1 corridor. Support from stakeholders is a key ingredient to successful implementation of Connect the Coastside.

6.1.1 Actors

Caltrans, the State's transportation agency, and manager of Highway 1, has several roles to play in supporting the implementation of Connect the Coastside, including making investments that will:

- Improve coastal community safety & mobility with consistent roadway edges, shoulders, pedestrian crossings and roundabouts
- Monitor and plan for sea level rise
- Support completion of CA Coastal Trail
- Improve the pedestrian environment
- Implement new Traffic Operations Systems elements including Closed Circuit TV and Variable Message Signs
- Maintain & improve Park & Ride lots

Caltrans must approve all modifications within the Highway 1 right of way, and most likely will construct many of the improvements within the right of way envisioned in Connect the Coastside. Caltrans can also provide funding for improvements from state and federal funding sources.

San Mateo County maintains the County's General Plan which establishes a goal to plan for a transportation system that provides for the safe, efficient, and convenient movement of people and goods throughout San Mateo County. The General Plan includes policies that guide County participation in regional and local transportation planning, articulating an active role within the County to achieve transportation improvements that support all modes of travel.

6.1.2 Partners

California Coastal Commission (CCC) implements the California Coastal Act and oversees development within the Coastal Zone. The County has a CCC-certified Local Coastal Program (LCP) that includes a policy requiring preparation of this plan. The LCP includes Public Works policies, including Roads and Transit sections to be used in evaluating transportation projects within the Coastal Zone, policies promoting

coastal access, and protection of coastal resources, including sensitive habitats, public access and coastal dependent development.

San Mateo County Parks and California State Parks Departments provide wonderful recreational opportunities at beaches, parks and nature preserves at lands they manage. Some of the improvements in Connect the Coastside, including Coastal Trail and Multi-modal Trail segments, and recreational parking lots will be located in state or county parks. Park managers can obtain grant funds for certain Connect the Coastside improvements, and can secure entitlements, conduct environmental review, construct, maintain, and manage these improvements.

City of Half Moon Bay (HMB) could coordinate with San Mateo County on key transportation investments and management strategies. The City of HMB is a key partner in alleviating the congestion on HWYs 1 and 92 that hampers coastal access. HMB can collaborate with the county, plan, design and fund improvements, including obtaining grant funding for HMB.

San Mateo County Transportation Authority (TA) administers the proceeds from Measure A to fund a broad spectrum of transportation-related projects and programs. Many of the Connect the Coastside recommended improvements could be funded in whole or in part with Measure A funds.

City County Association of Governments, Congestion Management Agency (C/CAG-CMA): The Congestion Management and Environmental Quality Committee (CMEQ) provides advice and recommendations to the C/CAG Board of Directors on all matters relating to traffic congestion management, travel demand management, coordination of land use and transportation planning, mobile source air quality programs, energy resources and conservation, and other environmental issues facing the local jurisdictions in San Mateo County.

6.1.3 Stakeholders

Midcoast Community Council (MCC) is an elected Municipal Advisory Council to the San Mateo County Board of Supervisors. The MCC represents Montara, Moss Beach, El Granada, Princeton, and Miramar and provides the Midcoast Community with a more effective means to express its views to the County of San Mateo and other governmental agencies. The MCC assists the Midcoast Community in developing and expressing a long range vision of the Midcoast Community, which meets the goals of its residents for an improved quality of life, protection of the environment, and sound economic planning. The MCC was instrumental in the preparation of Connect the Coastside and will play an important guiding role in its implementation.

6.2 Project Evaluation Criteria

6.2.1 Project Evaluations

In order to prioritize projects for feasibility and funding opportunities, six metrics were identified to evaluate and score each project. **Table 27** presents the metrics and range of performance scores ranging from Low (L) to High (H) or High to Low depending on their characteristics.

Table 27. Project Evaluation Metrics

Project Evaluation Metrics		
Project Cost	Project design, capital and permitting cost	1 to 3 (H to L)
Ease of Implementation	Funding, permitting, and environmental	1 to 3 (H to L)
Multimodal Connectivity	Measures extent that a project fills a gap in existing bicycle, pedestrian or transit networks	1 to 3 (L to H)
Safety and Circulation	Safety Bonus	1 to 3 (L to H)
Shoreline Access	Bonus for enhanced shoreline public access	1 to 3 (L to H)
Annual Cost	Operations and Maintenance	1 to 3 (H to L)
Overall Score	Total obtained score	1 to 3 (H to L)

Project cost was considered to be high, medium or low based on alternatives feasibility study and cost estimation study as portrayed in **Table 18** of Section 5.1. Similarly, ease of implementation was obtained from Project Feasibility Considerations carried out as part of Alternatives Evaluation.

A project is said to provide multimodal connectivity based on whether or not it serves multiple modes of transportation. For example, Highway 1 Natural Pathway will provide access to pedestrians alongside the existing roadway, making it a high performing multimodal project. However, the Gray Whale Cove Turn and Acceleration Lanes will only serve motor vehicles and do nothing to improve bike, pedestrian or transit connectivity, thus leading to a low score in "Multimodal Connectivity".

As part of the Evaluation of Recommended Alternatives, certain projects were identified to improve safety and circulation along the Midcoast area. Projects like adding bus stop amenities and some parking lot improvements do not impact safety or circulation and are therefore allocated low performance scores for this category.

Projects such as Highway 1 pedestrian improvements, increased SamTrans weekend service, and coastal parking lot improvements will increase shoreline connectivity. Most projects are historically known to have high operation and maintenance costs, leading to low performance scores throughout.

These implementation performance scores are depicted in **Table 28**. A score of 1 is given to projects with low performance, 2 for medium and 3 for high performance in a category. If the sum of all categories for a given project is more than 12, it has a high overall score. A sum of less than 8 leads to low overall score, while between 8 and 12 has a medium overall score. All projects have either high or medium overall performance scores.

6.2.2 Project Prioritization

This report section proposes a preliminary priority schedule for mobility improvements recommended in Connect the Coastside, based on an evaluation of their individual performance relative to the criteria in

Table 28, and reflecting that certain improvements are needed in the near term to address traffic impacts from approved and proposed development. The project scores in **Table 28** are qualitative rather than quantitatively derived, but do reflect their overall ranking. Rankings within the short, medium and long term categories, and between project types are not determinative and projects will be pursued in the order that reflects available resources, environmental constraints, public priorities and other considerations. These preliminary priorities may shift as conditions change, including available funding, safety concerns, and other factors affecting community mobility needs and priorities.

Maintenance will continue to be an overarching priority for public investment in mobility. Maintaining existing facilities is critical for preserving existing mobility as well as for accommodating future development, including ongoing, regular maintenance of roadways, bike paths and trails, transit stop furnishings and buses, and sidewalks and other mobility infrastructure throughout the Midcoast should be funded and conducted. Whenever feasible and appropriate, Connect the Coastside projects should also be incorporated as maintenance projects are implemented. The following are the short, medium and long-term priorities for mobility improvements and land use policy implementation in the Midcoast. Project implementation priorities are summarized in **Table 29.**

Table 28. Project Implementation Performance Scores

Project #	Project Name	Project Cost	Ease of Implementation (funding, permitting, and environmental)	Multimodal Connectivity	Improved Safety/ Circulation	Shoreline Access	O&M Cost	Overall Score
R1	Gray Whale Cove Turn and Acceleration Lanes	★	★	☆	★	☆	☆	★
R2	SR-1 Side-Street Stop Signs	★	★	☆	★	☆	☆	★
R3A	SR-1 Paved Shoulder and Curb	★	★	☆	★	☆	☆	★
R3B	SR-1 Paved Shoulder and Curb	★	★	☆	★	☆	☆	★
R4	California Avenue Roundabout/ Signal	★	☆	★	★	☆	★	★
R5	Cypress Avenue Multi-Lane Roundabout/ Signal	☆	☆	★	★	☆	☆	★
R6	16th Street Roundabout	★	★	★	★	☆	★	★
R7	Montara Lighthouse Median and Left Turn Bay	★	★	☆	★	★	☆	★
R8	SR-92/SR-35 (Lower) Roundabout	☆	★	★	★	☆	☆	★
R9	Carlos Street Traffic Calming	☆	★	★	★	☆	☆	★
R10	Main Street Traffic Calming	☆	★	★	★	☆	☆	★
R11	SR-92 Passing/Climbing Lanes	☆	☆	☆	★	☆	☆	★
R12	SR-92 Truck Signs	★	★	☆	★	☆	☆	★
R13	SR-92 Left Turn Lanes	★	★	☆	★	☆	★	★
R14	SR-92/SR-35 (Upper Roundabout)	☆	★	★	★	☆	☆	★
Pe1	Striped Pedestrian Crossing with Beacons	★	★	★	★	★	★	★
Pe2A	SR-1 Natural Pathway	★	★	★	★	★	☆	★
Pe2B	SR-1 Natural Pathway	★	★	★	★	★	☆	★
Pe2C	SR-1 Natural Pathway	☆	★	★	★	★	☆	★
Pe3	Coronado Street and Ave Alhambra Sidewalk	★	★	★	★	☆	☆	★
Pe4	Coastal Trail	★	★	★	★	★	☆	★
B1	Capistrano Road Bicycle Facilities	★	★	★	★	☆	☆	★
B2	SR-92 Bike Lanes	☆	☆	★	★	☆	☆	★
B3	SR-1 Bike Lanes	★	★	★	★	☆	☆	★
B4	Airport Street Class I/II/III Bike Routes	★	★	★	★	☆	☆	★
B5	Bike/Ped improvements in downtown Moss Beach	★	★	★	★	☆	☆	★
T1	Bus stop amenities	★	★	★	☆	☆	★	★
T2	Increased weekend Samtrans service	★	★	★	★	★	★	★
T3	Transit Stop Improvements	★	★	★	★	★	★	★
Pa1	Montara State Beach Parking Lot Improvements	★	★	★	☆	★	☆	★
Pa2	Upper Gray Whale Cove Parking Lot Improvements	★	★	★	★	★	☆	★
Pa3	Wayfinding	★	★	★	★	☆	☆	★
Pa4	Carlos Street On-Street Parking	☆	★	★	★	☆	☆	★
Pa5	El Granada Diagonal Parking	☆	★	★	☆	★	☆	★
Pa6	Park and Ride at Etheldore St (South Terminus)	★	★	★	☆	☆	★	★

★	High Performance Score	★	Medium Performance Score	☆	Low Performance Score

Table 29. Term-wise Project Implementation Priorities

Modes	Project Implementation Priorities		
	Short Term	Medium Term	Long Term
Transit	T3: Cypress Point Housing Transit on Carlos	T1: Bus Stop Amenities (throughout study area)	
	T1: Bus Stop Amenities (Moss Beach at California and Carlos Street)	T2: Increased SamTrans Commute Service	
	T2: Increased Weekend SamTrans Service		
Bicycle	B1: Capistrano Road Bicycle Facilities	B3: Class II Bicycle Lanes on Highway 1	B2: SR-92 Class I Bike Trail Princeton to Cypress Ave
		B4: Airport Street Class II Bike Routes	B3: SR-1 Class II Bicycle lanes from Half Moon Bay to Pacifica (B10)
			B2: Class II Bike Lanes on Highway 92
Pedestrian	Pe1: Striped Pedestrian Crossing with Beacons at Coronado Street and Avenue Alhambra	Pe2: SR-1 Multi-modal Trail in Montara and Second Street to 16th Street	
	Pe2: SR-1 Multi-modal Trail at Moss Beach	Pe2: Multi-modal Trail Capistrano to South Terminus of Etheldore	
	Pe2: SR-1 Multi-modal Trail in Moss Beach from 16th Street to Etheldore South Terminus, and in Miramar and El Granada-Mirada Road to Capistrano	Pe4: Coastal Trail Montara Lighthouse to Northern Vallemar Terminus	
	Pe2: SR-1 Multi-modal Trail on Carlos Street Moss Beach and Coastal Trail Connections		
	Pe4: Coastal Trail Improvements (Study Area)		
Roadway	R1: Gray Whale Cove Turn and Acceleration Lanes		R8: SR-92/SR-35 Roundabout
	R6: 16th Street/Hwy 1 Intersection Control		

Modes	Project Implementation Priorities		
	Short Term	Medium Term	Long Term
	R4: California Avenue Intersection Control		
	R5: Cypress Avenue Intersection Control		
	R7: Realignment of Carlos Street northern terminus (with R6)		
Land Use	LU1: Initiate and complete lot merger program (2-3 year effort)	LU2: Implement a lot retirement program if feasible	
Parking	Pa1: Montara State Beach Parking Lot Improvements	Pa3: Wayfinding Signage Program	Pa5: El Granada Diagonal Parking
	Pa2: Upper Gray Whale Cove Parking Lot Improvements	Pa4: Carlos Street On-Street Parking	

6.3 Project Implementation

6.3.1 Overview of Project Implementation

Each of the projects proposed in Connect the Coastside will require separate funding, design, permitting, environmental review, and construction. The Connect the Coastside Plan is the first step in positioning these projects for funding because it establishes a coherent mobility vision for the Midcoast that articulates the Board of Supervisor's transportation infrastructure investment priorities. The projects in Connect the Coastside also need to be in local, regional and state transportation plans to secure funding, particularly any improvements within the State right of way, including:

Local

- San Mateo County Transportation Authority Strategic Plan
- San Mate County Congestion Management Plan (C/CAG)
- San Mateo County Road Fund

Regional

- Plan Bay Area (Sustainable Communities Strategy and Regional Transportation Plan)

State

- California Transportation Commission, State Transportation Improvement Program

In addition to the incorporation of Connect the Coastside Projects in local, state and regional plans, the projects can qualify for competitive grant funds from federal, state, regional sources, or in special cases, funding directly from the State Legislature in the Governor's budget. The County of San Mateo's Five-Year

Capital Improvement Plan (CIP) is a planning tool designed to identify short- and long-term capital improvement needs of the County and align those needs with appropriate financing, scheduling, and implementation. The County may commit general funds to Connect the Coastside projects. The County Department of Public Works administers the County's Road Fund, which includes state and federal tax monies returned to the County. Potential funding sources for each project are described in Chapter 5.

Local governments often seek grant funding to prepare project designs. These are necessary before permitting and environmental review can commence. Although Connect the Coastside is evaluated pursuant to the requirements of the California Environmental Quality Act at a programmatic level, individual projects will need specific assessments of environmental impact as part of the Coastal Development Permit process. Each project will require a Coastal Development Permit, issued by the County.

Once funding is secured and design, permitting, and environmental review are completed, projects can be published for bids. This competitive public process allows firms to compete for a project by responding to a request for proposals (bids) issued by the County. Once a contract is awarded, the contractor can mobilize and build the project.

6.3.2 Considerations for Project Implementation

Implementation of Connect the Coastside and the projects that have been identified as priorities will occur incrementally, in a variety of ways, over several decades, as funding becomes available. While some projects or components of projects could be implemented fairly quickly, some high priority projects will be longer-term, especially since implementing transportation projects can be challenging. Significant obstacles can include securing construction, design and maintenance funding, project area topography, right-of-way property acquisition, coastal erosion and flooding encroachment permits or easements, providing access for all roadway users, and meeting environmental and design standards. Implementing this plan will require partnerships between Caltrans and multiple county agencies, as well as ongoing support from the community. Partners will also need to work together to find common ground on project designs, locations, and funding mechanisms.

It is anticipated that many projects identified in this plan will be implemented independently as stand-alone projects. However, some projects or components of projects will instead be incorporated into other transportation or non-transportation projects in the Midcoast, which may be implemented by public or private entities. This may include projects under the Caltrans State Highway Operation and Protection Program (SHOPP), San Mateo County maintenance, operational, and preservation projects, land use developments, or major infrastructure modifications.

New developments and storm damage repair work provide opportunities to implement portions of some of the recommendations, especially bicycle and pedestrian improvements, even if these implementations may result in "piecemeal" facilities. Finally, outside funding (such as grants) may be available to finance the design and construction of other projects and programs that fit the criteria of those funding programs. This could result in some lower priority projects moving forward more quickly than others.

For major priority projects on Highway 1, the first step is development of a Caltrans Project Initiation Document (or PID), which includes more detailed project scoping – including development of cost estimates and identification of varying design options. The County of San Mateo, Caltrans, the San Mateo County Transportation Authority and SamTrans are also expected to continue to apply for eligible grant funding opportunities and may utilize Measure A sales tax revenues to serve as match to leverage other

funds. Transportation agencies (Caltrans, County, SMCTA, MTC, etc.) should consider partnering with one another, as well as MCC, non-profits, and private sector partners to better compete for Federal and State funding opportunities.

6.4 Next Steps – Priority and Ongoing Actions

Following adoption of the Connect the Coastside by the Board of Supervisors, County staff will pursue a number of implementation actions independently and in partnership with others to advance the projects identified in Connect the Coastside. The Priority Actions will focus on low hanging fruit, and high-priority projects, however the following preliminary list of priority actions will begin following implementation:

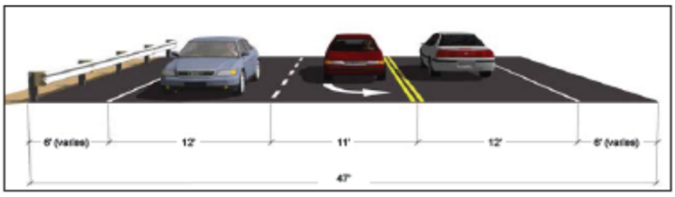
Table 30. Priority and Ongoing Implementation Actions

Priority Actions		
Implementation Action	**Lead and Partners**	**Project Completion Date**
Implement Lot Merger Program	County Planning Staff	June 2020
Complete Project Implementation Documents for Moss Beach Roundabouts	County Planning Staff with Consultant Assistance	June 2020
Complete Construction of Phase 1 of Multi-modal Trail	San Mateo County Department of Planning and Building	December 2021
Develop Transportation Impact Fee Ordinance for Public Review and Board Adoption	San Mateo County Departments of Planning and Building and Public Works	December 2020
Integrate Connect the Coastside projects in local and state transportation plans	County Planning Staff, City/County Association of Governments and California Transportation Commission	December 2020
Ongoing Actions		
Transportation Facility Maintenance	Caltrans, San Mateo County Departments of Parks and Public Works, California State Parks, GGNRA, Private Land Owners	
Monitor Auto Traffic	Caltrans, Public Works, Project Sponsors	
Monitor Building Permits for New Construction	San Mateo County Departments of Planning and Building	
Seek, Obtain and Provide Grant Funds for Connect the Coastside Projects	San Mateo County Departments of Planning and Building, Parks, and Public Works; California State Parks, C/CAG	
Collaborated with SamTrans and C/CAG on Bus Service Improvements	San Mateo County Departments of Planning and Building	

Appendix A
Project Concept Diagrams

Project Concept Diagrams

Project R1: Gray Whale Cove Turn and Acceleration Lanes



Project R2: SR-1 Side-Street Stop Signs

Locations Missing Stop Signs:

El Granada
SR-1 and Furtado Lane

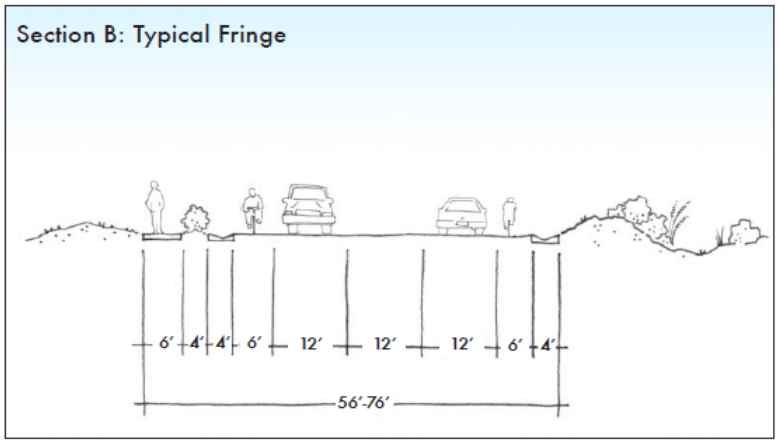
Montara
SR-1 and 16th Street
SR-1 and 13th Street
SR-1 and 11th Street
SR-1 and 7th Street
SR-1 and Seacliff Ct
SR-1 and 1st Street

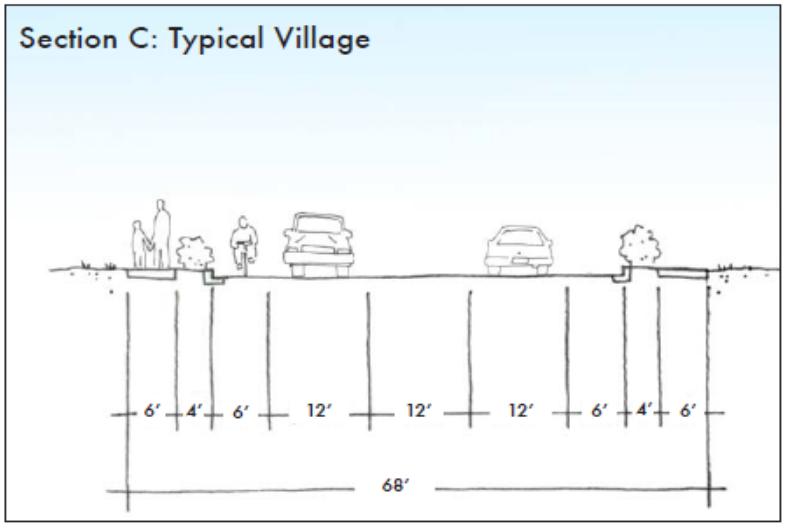
R1-1

Project R3: SR-1 Paved Shoulder and Curb

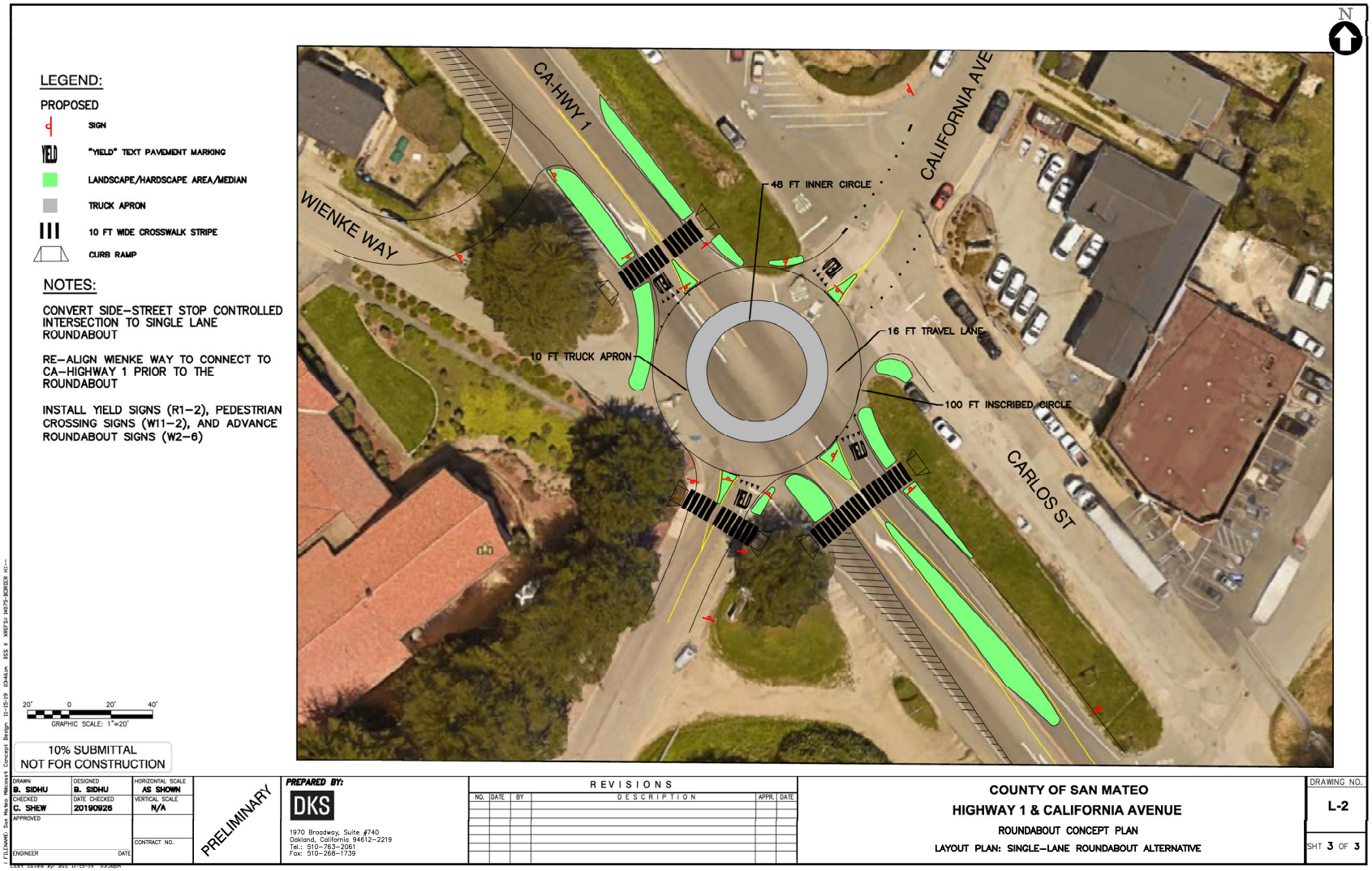
Highway 1 Context Zones

Project R3: SR-1 Paved Shoulder and Curb

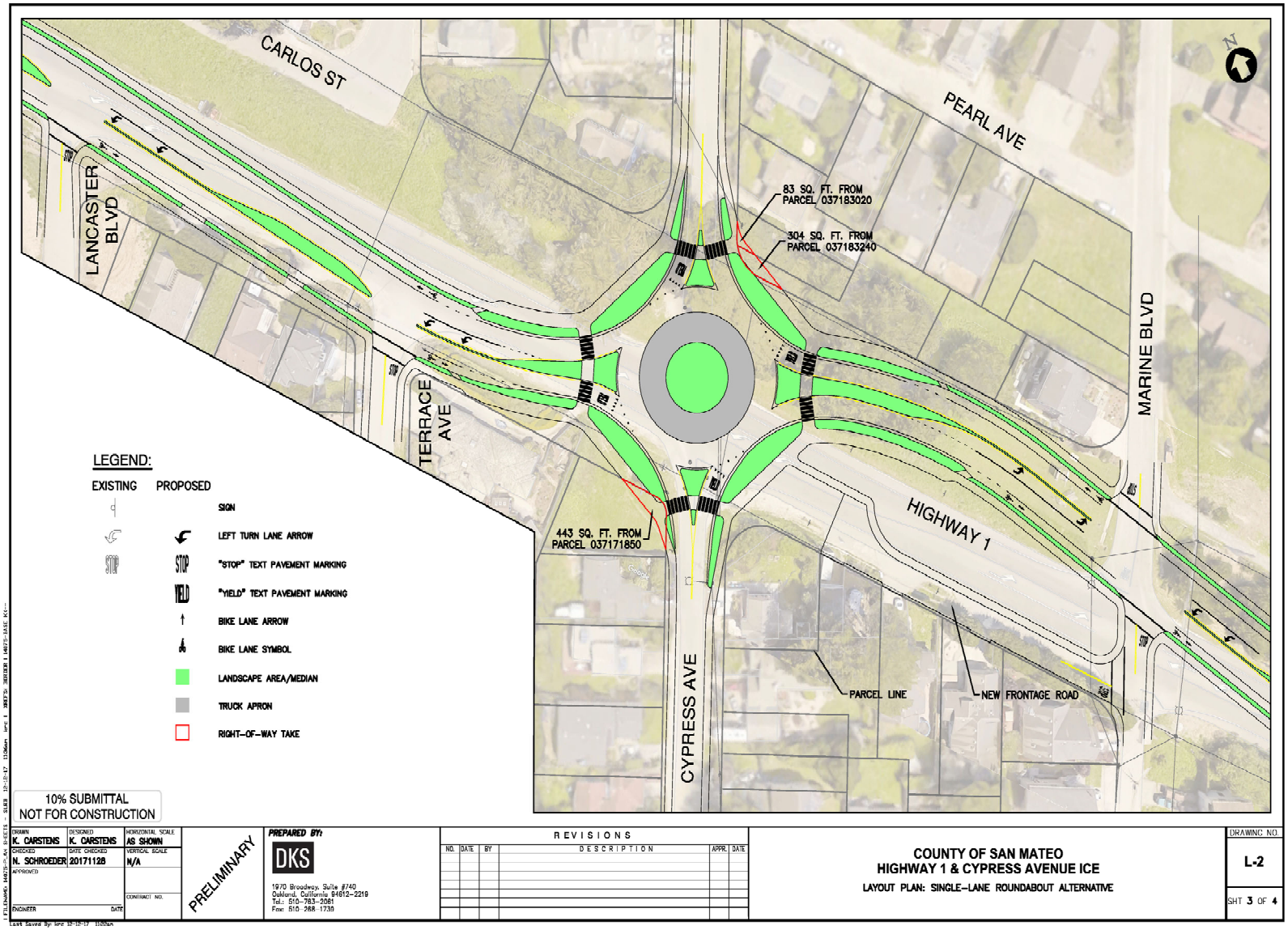




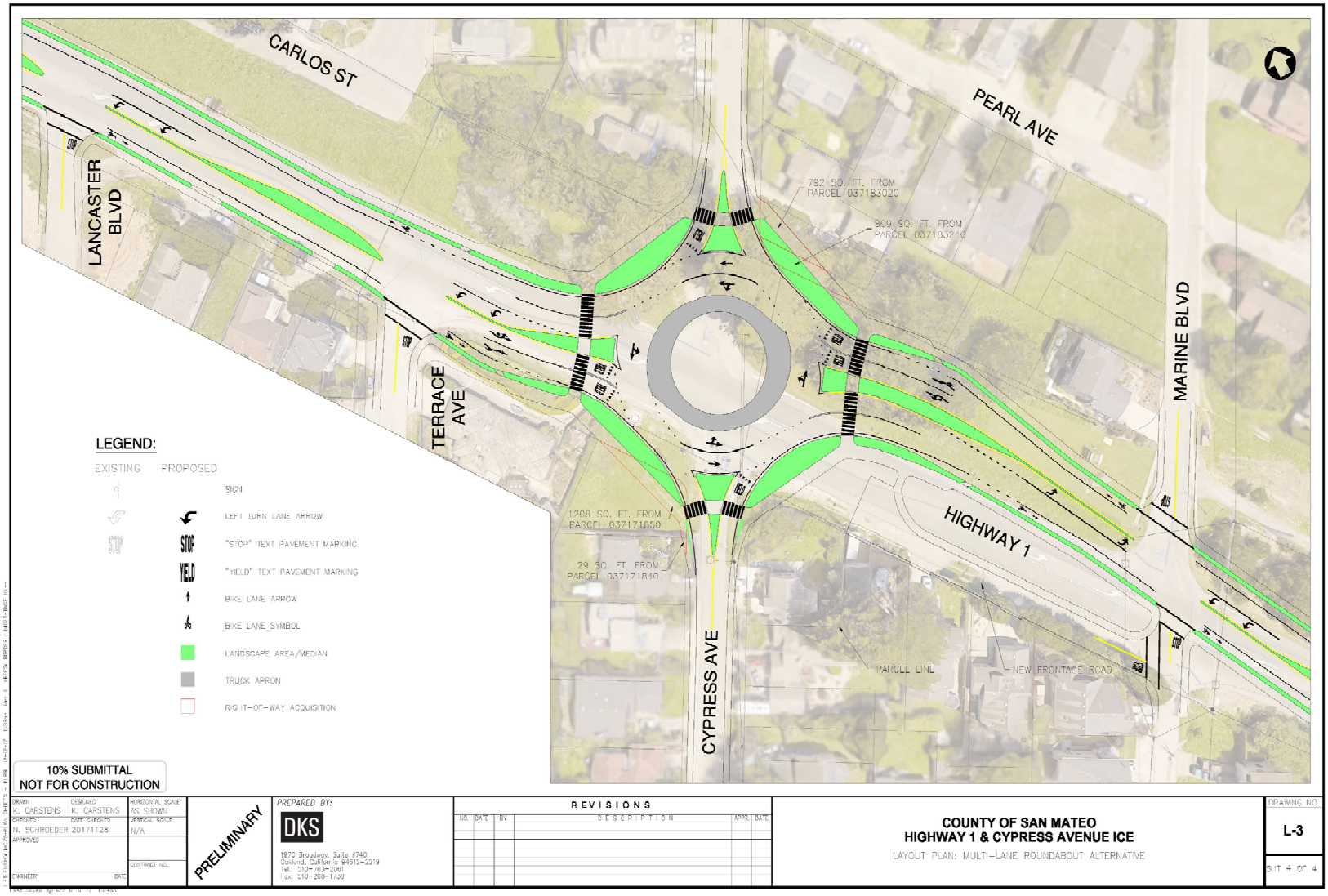
Project R4: California Ave Roundabout



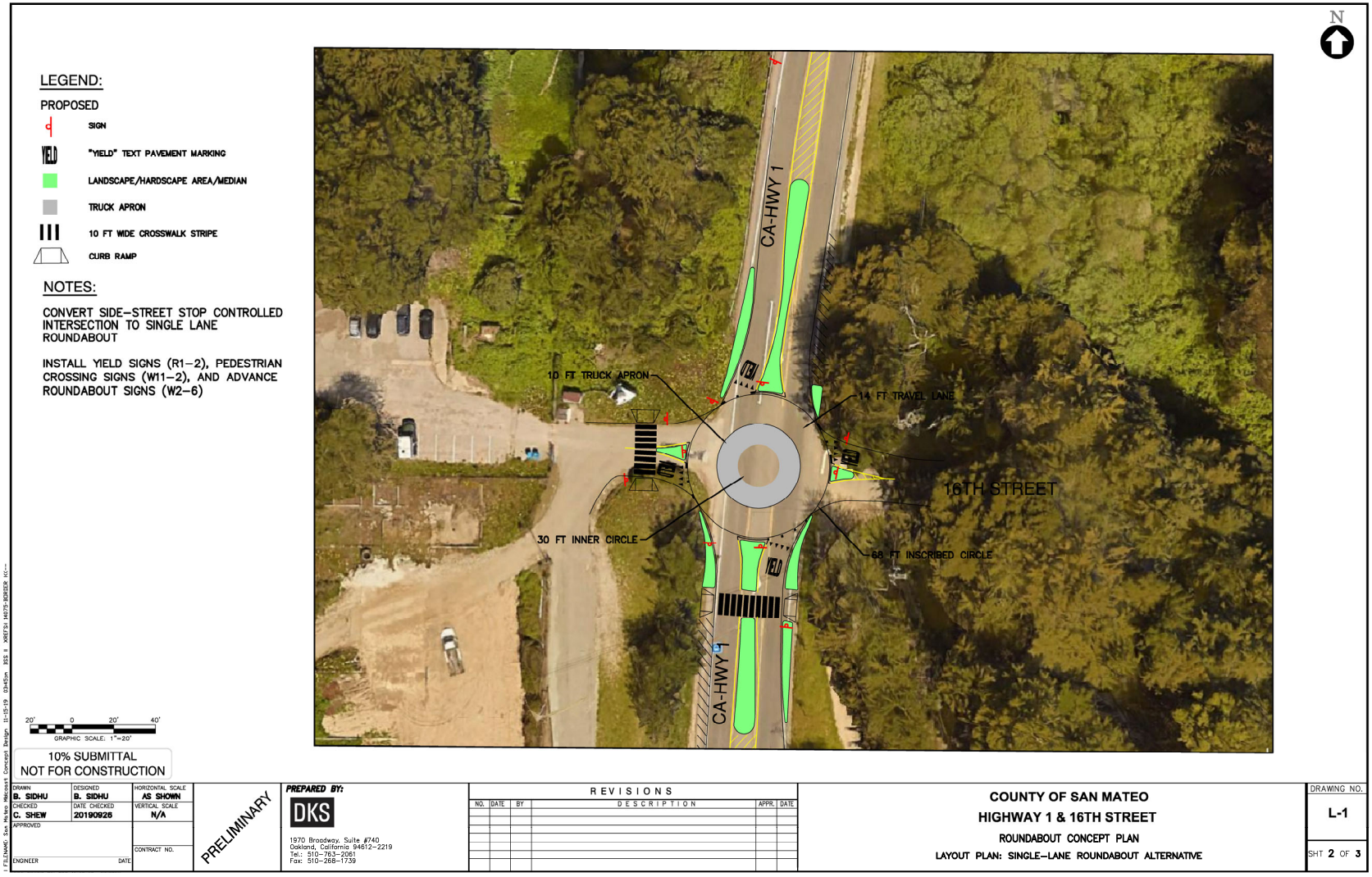
Project R5: Cypress Ave Single Lane Roundabout



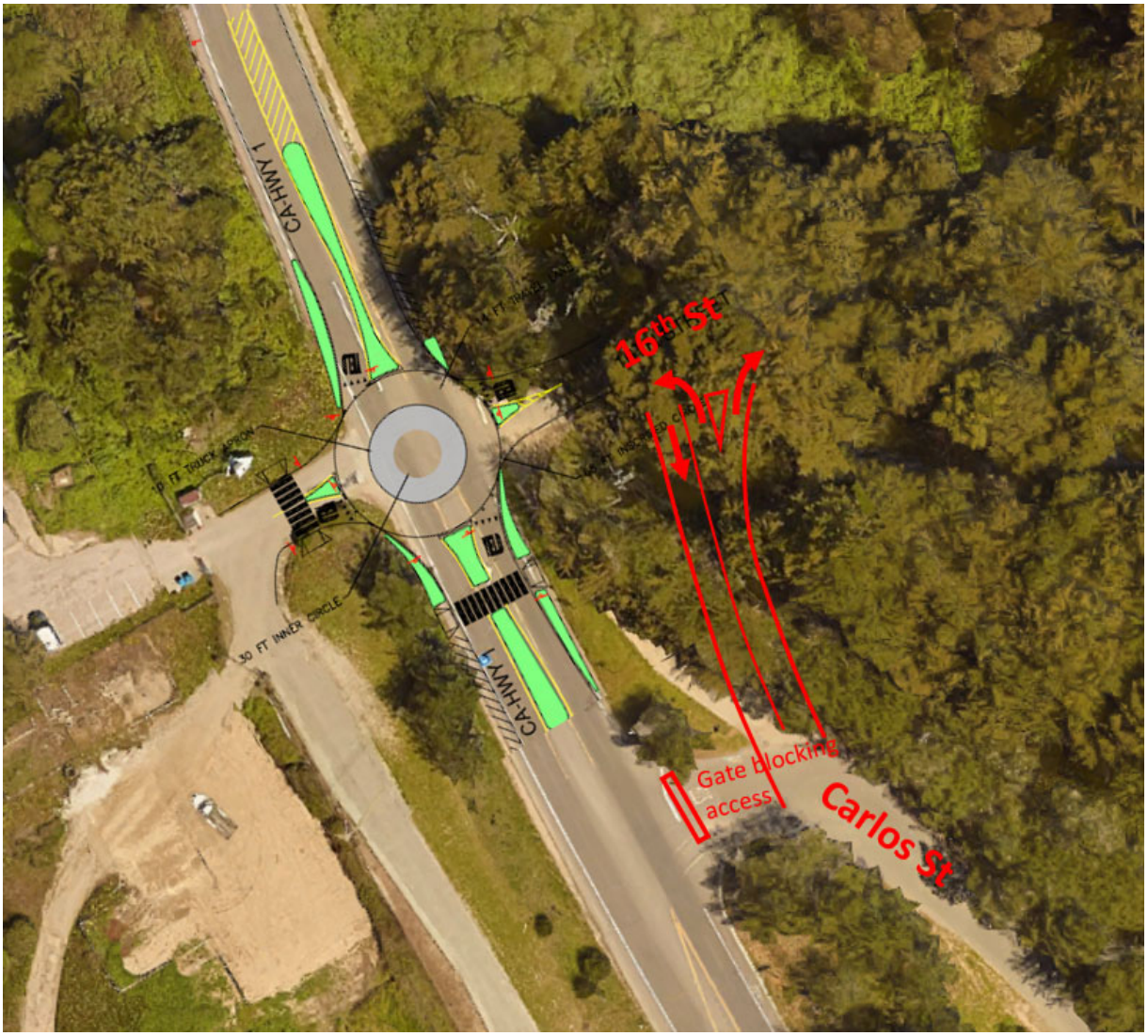
Project R5: Cypress Ave Multi-Lane Roundabout



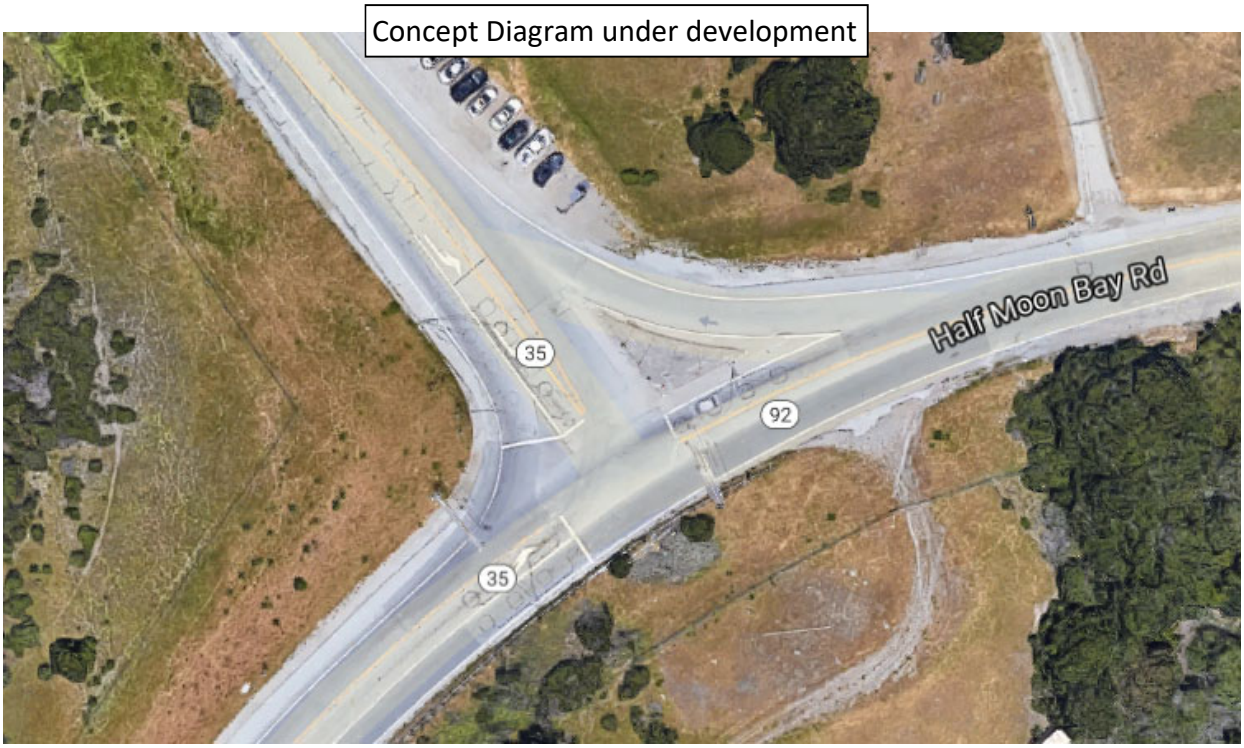
Project R6: 16th St Roundabout



Project R7: Carlos St Terminus Realignment

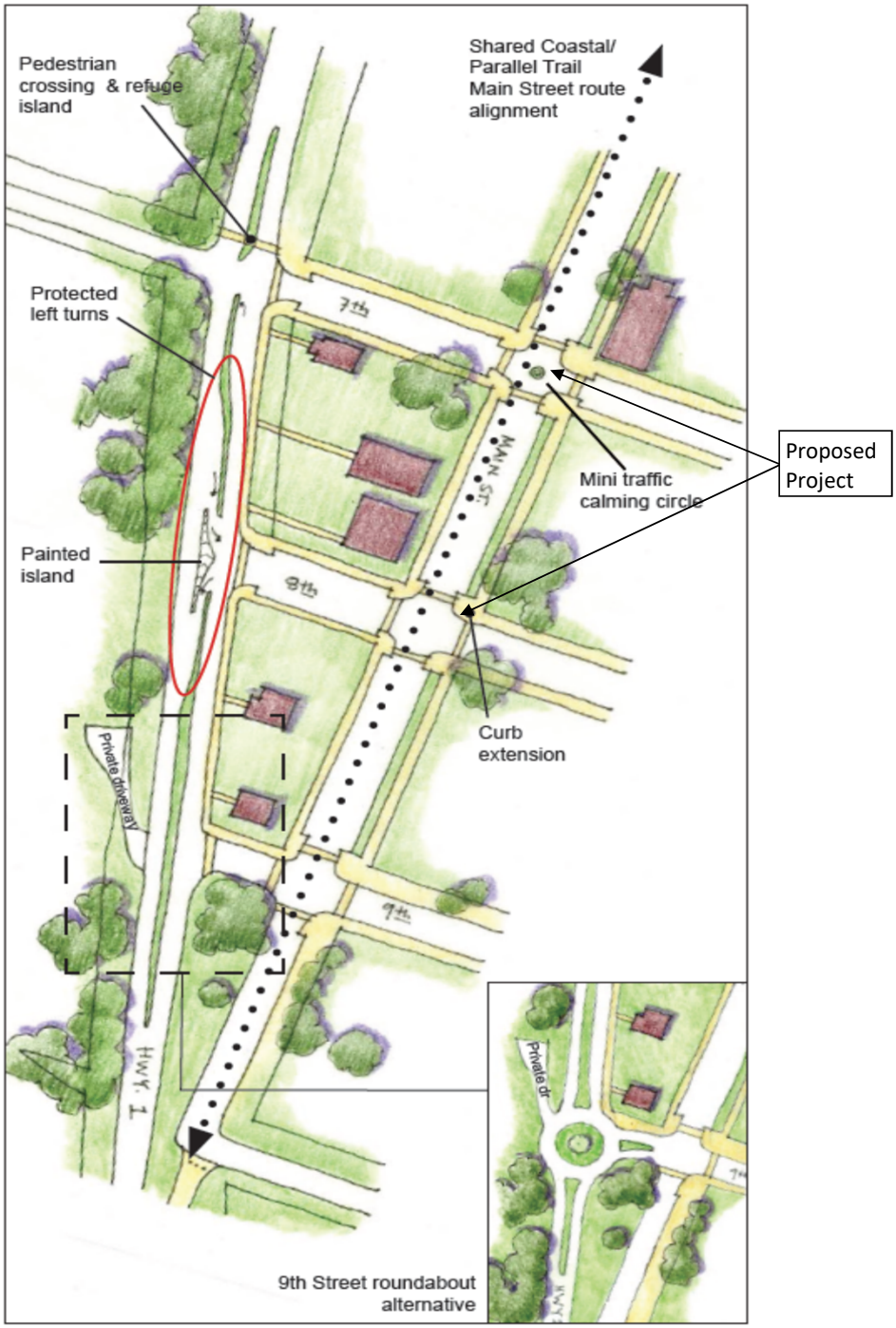


R8: SR-92/SR-35 (Lower) Roundabout

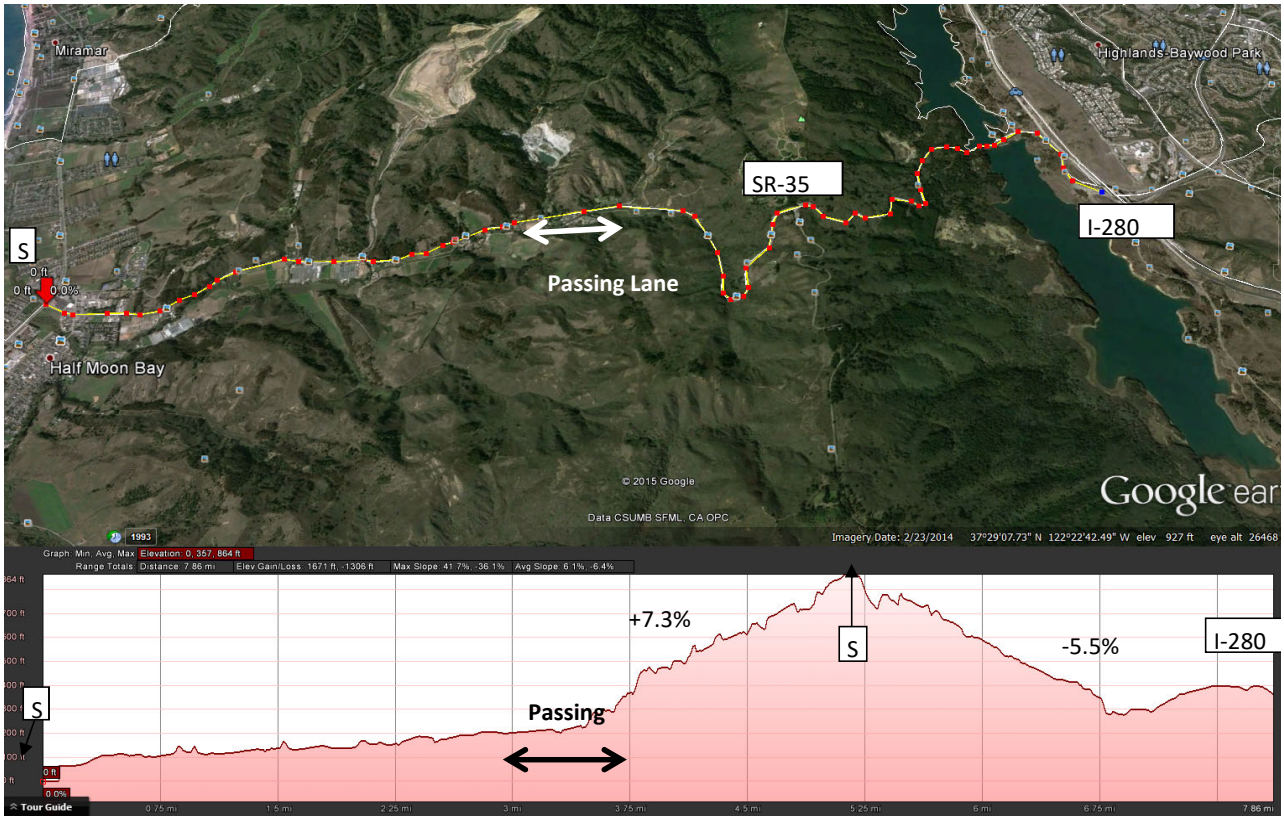


R9: Carlos Street Traffic Calming

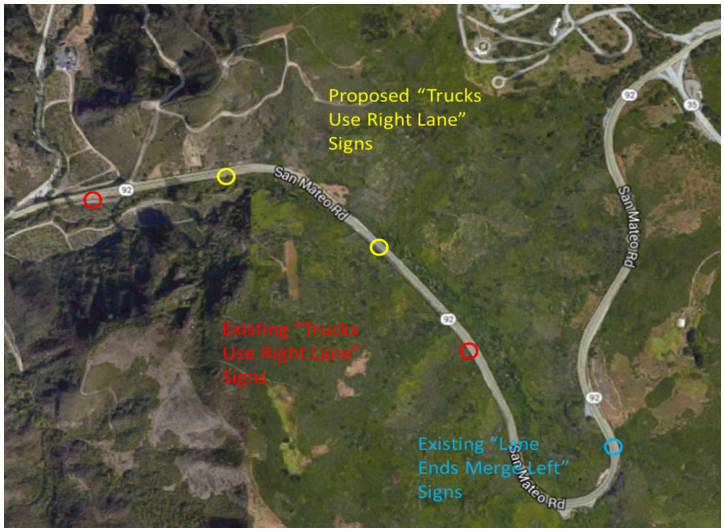
R10: Main Street Traffic Calming



R11: SR-92 Passing/Climbing Lanes



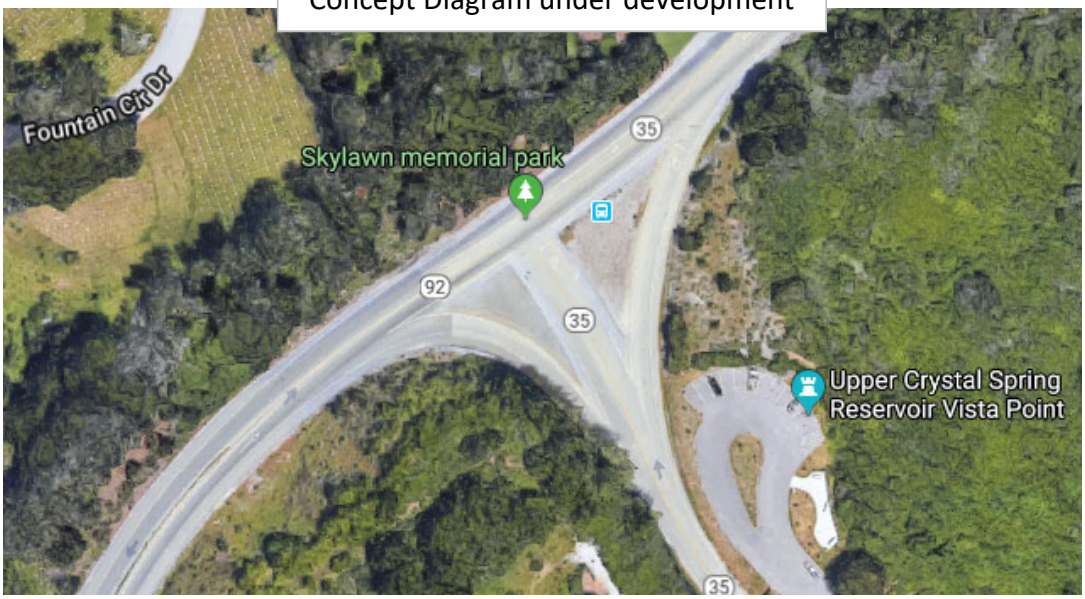
R12: SR-92 Truck Signs



R4-5

Project R14: SR-92/SR-35 (Upper) Roundabout

Concept Diagram under development



Project Pe1: Striped Pedestrian Crossing with Beacons

Crossing Locations:
Gray Whale Cove
Montara State Beach
2nd Street (median refuge, no flashing beacon)
7th Street
Moss Beach Lighthouse (16th Street)
Half Moon Bay Airport
North Capistrano Road
Surfer's Beach Parking Area, north of Coronado Street
Between Magellan Avenue and Medio Avenue
Mirada Road
Purisima Way
Redondo Beach Road
Quarry Road (along SR-92)
Pilarcitos Creek Road (along SR-92)
SR-35 (along SR-92)

DKS

Pe2: Parallel Trail Proposed Alignment – Moss Beach/Montara

DKS

Pe2: Parallel Trail Proposed Alignment – El Granada/Miramar

DKS

Parallel Trail Proposed Alignment - Sheet 1a

DKS

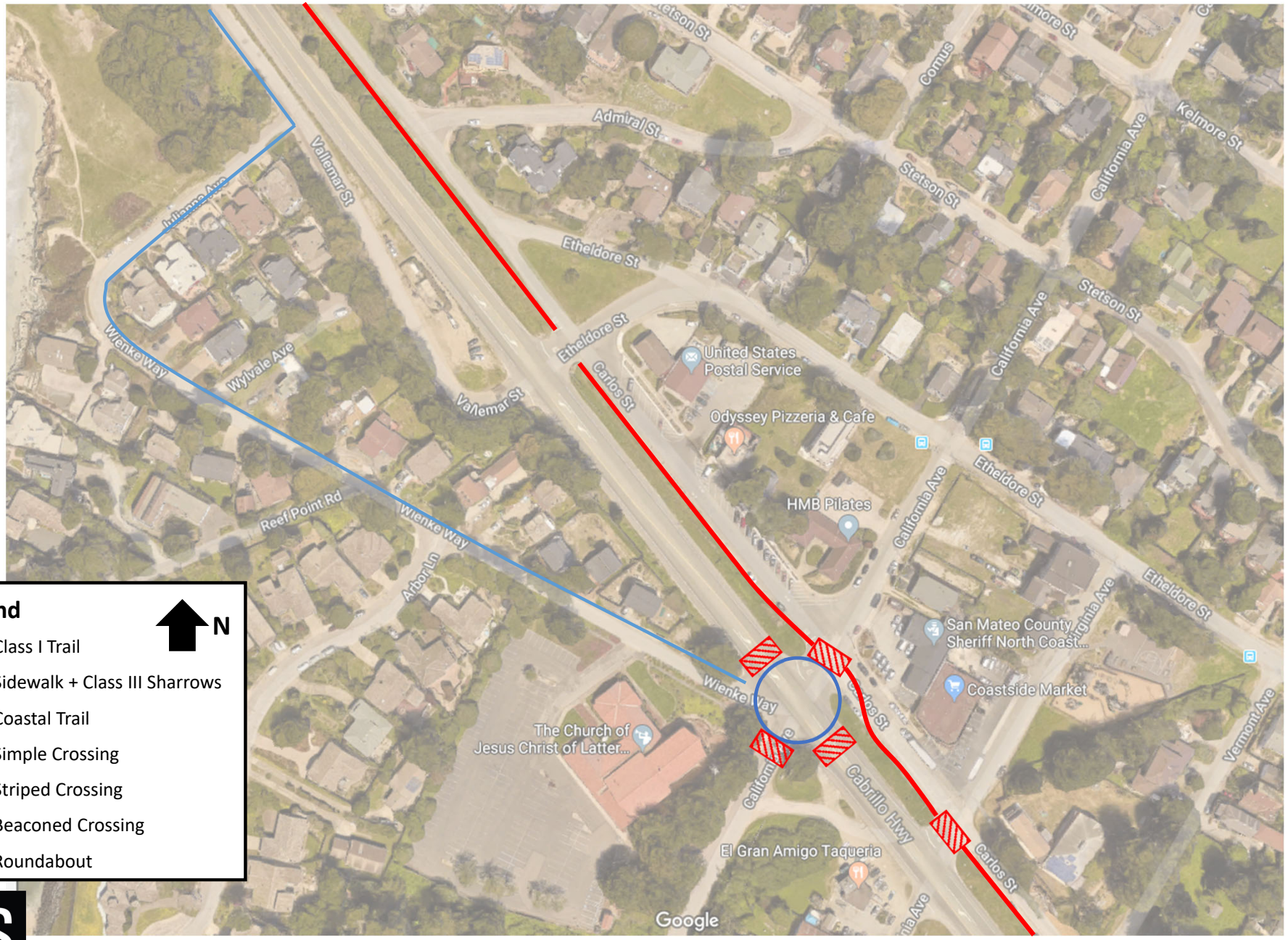
Parallel Trail Proposed Alignment - Sheet 1b

DKS

Parallel Trail Proposed Alignment - Sheet 1c

DKS

Parallel Trail Proposed Alignment - Sheet 1d



DKS

Parallel Trail Proposed Alignment - Sheet 1e

DKS

Parallel Trail Proposed Alignment - Sheet 1f

DKS

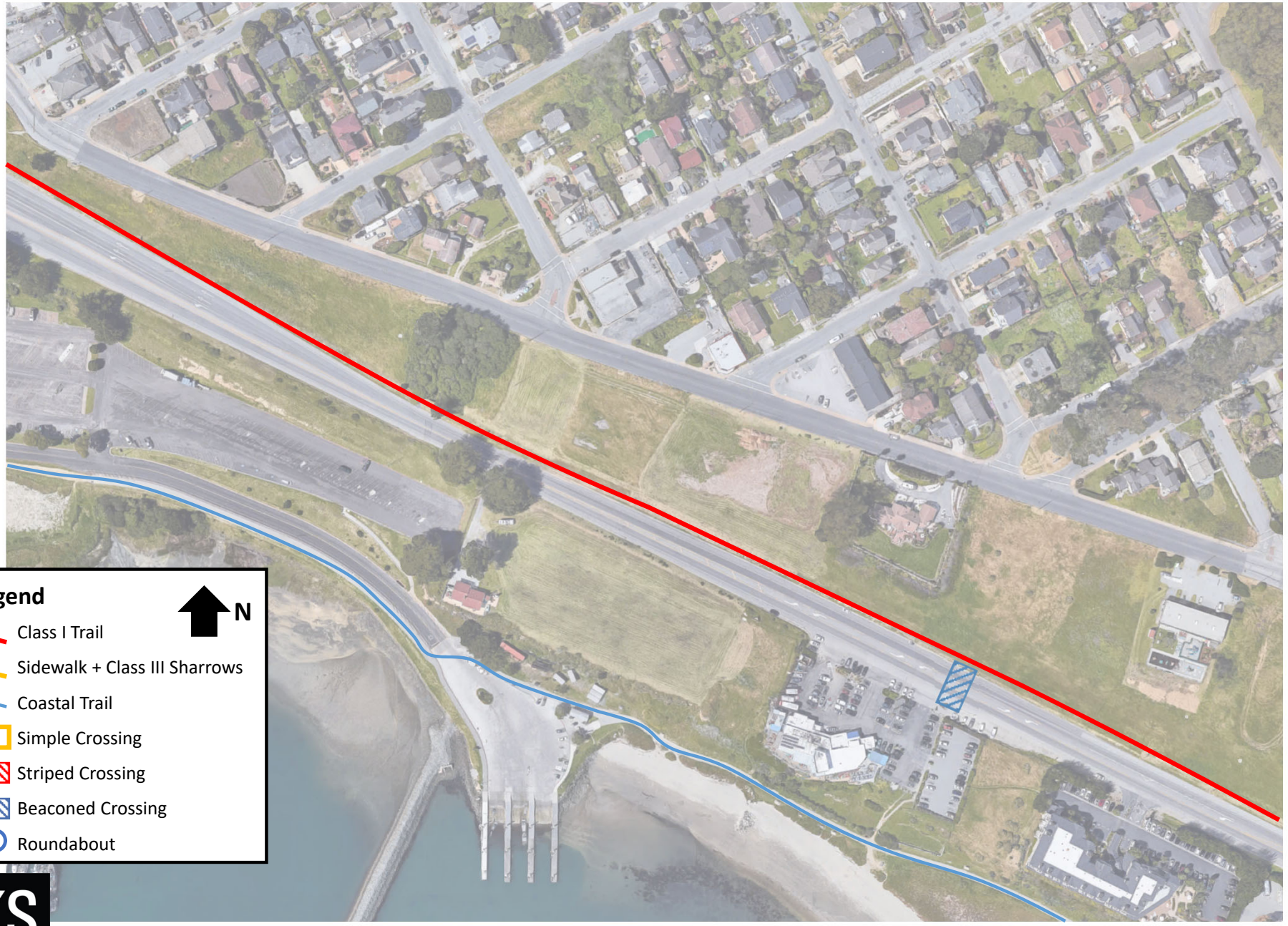
Parallel Trail Proposed Alignment - Sheet 1g

DKS

Parallel Trail Proposed Alignment - Sheet 2a

DKS

Parallel Trail Proposed Alignment - Sheet 2b



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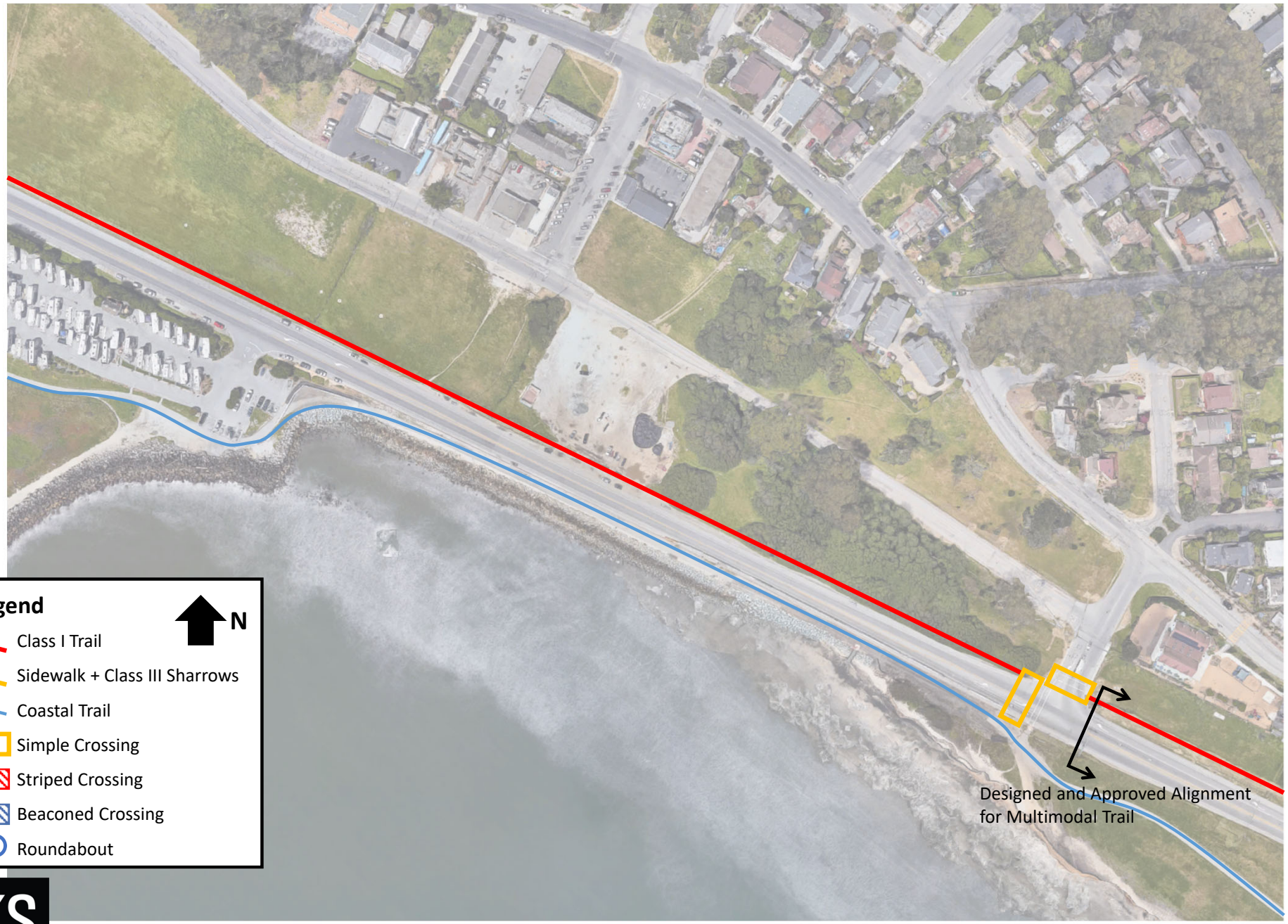
Parallel Trail Proposed Alignment - Sheet 2c



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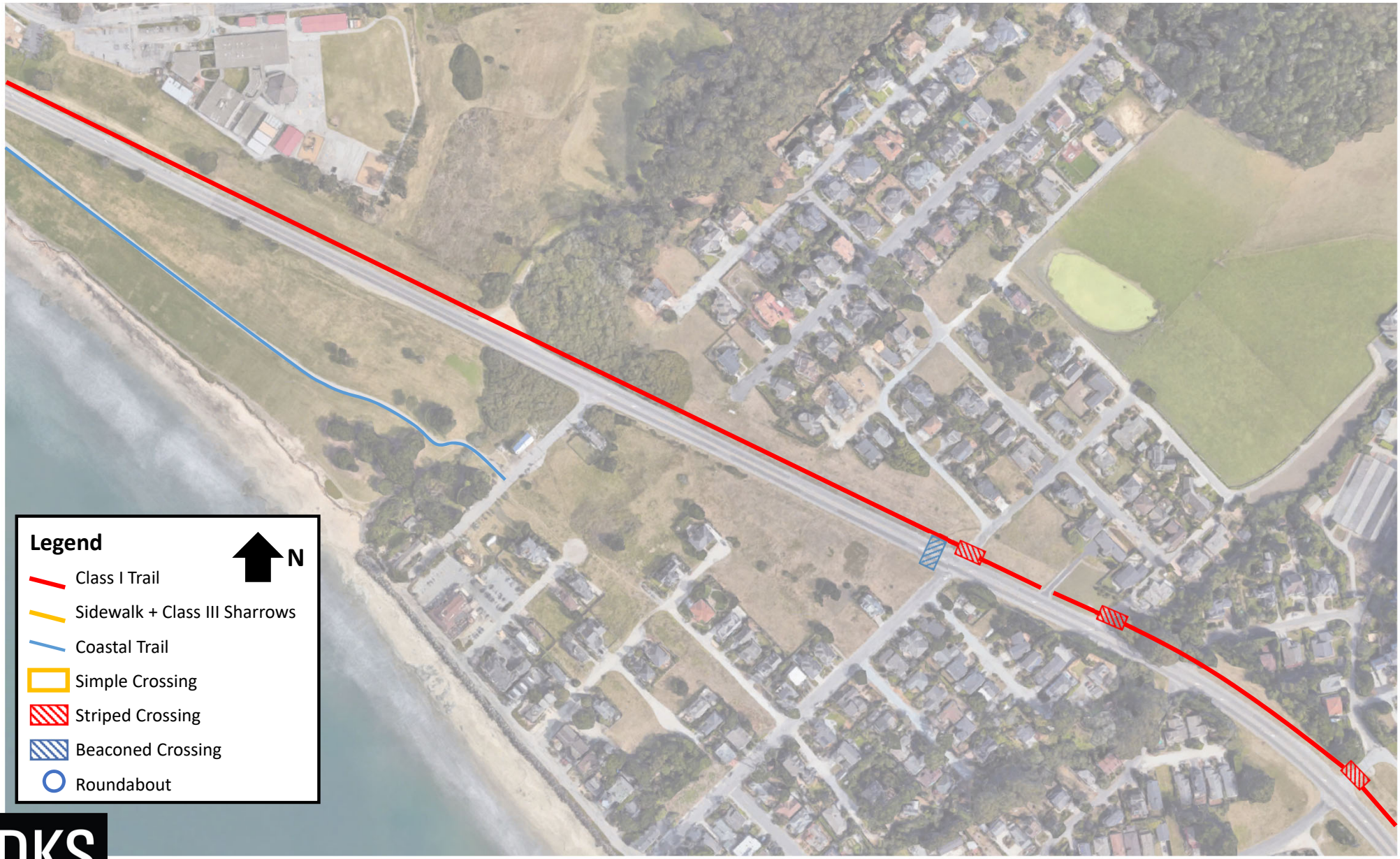
Parallel Trail Proposed Alignment - Sheet 2d



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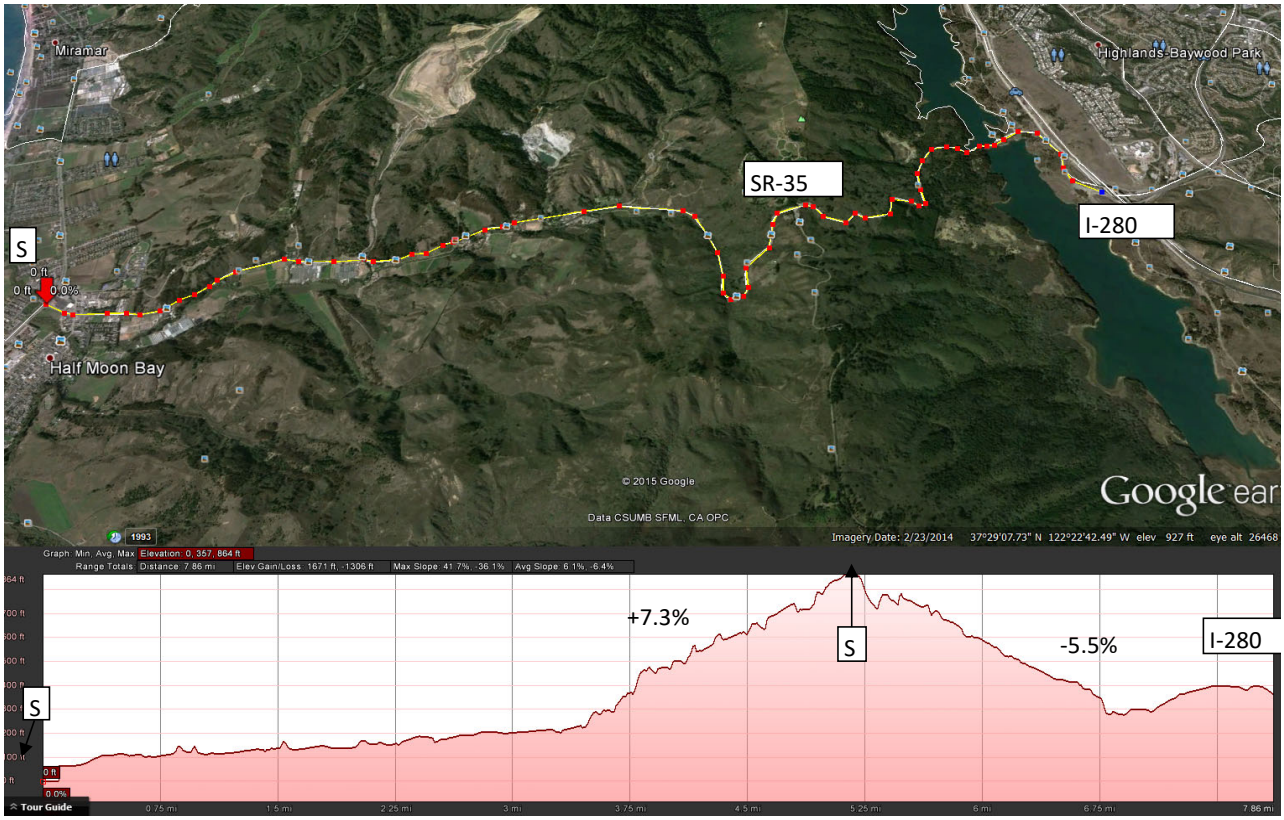
Parallel Trail Proposed Alignment - Sheet 2e

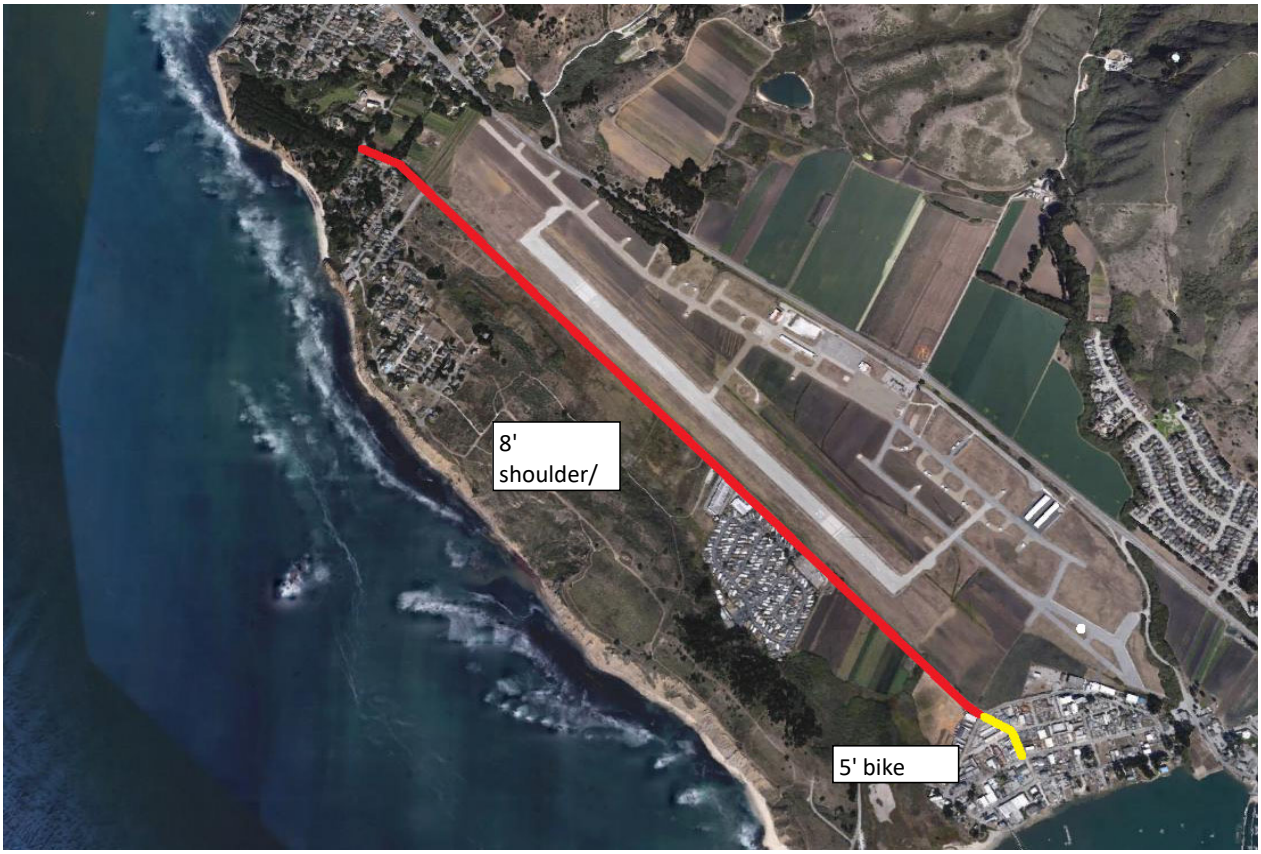
Project Pe3: Coronado Street and Ave Alhambra Sidewalk

Project B1: Capistrano Road Bicycle Facilities

Project B2: SR-92 Bike Lanes

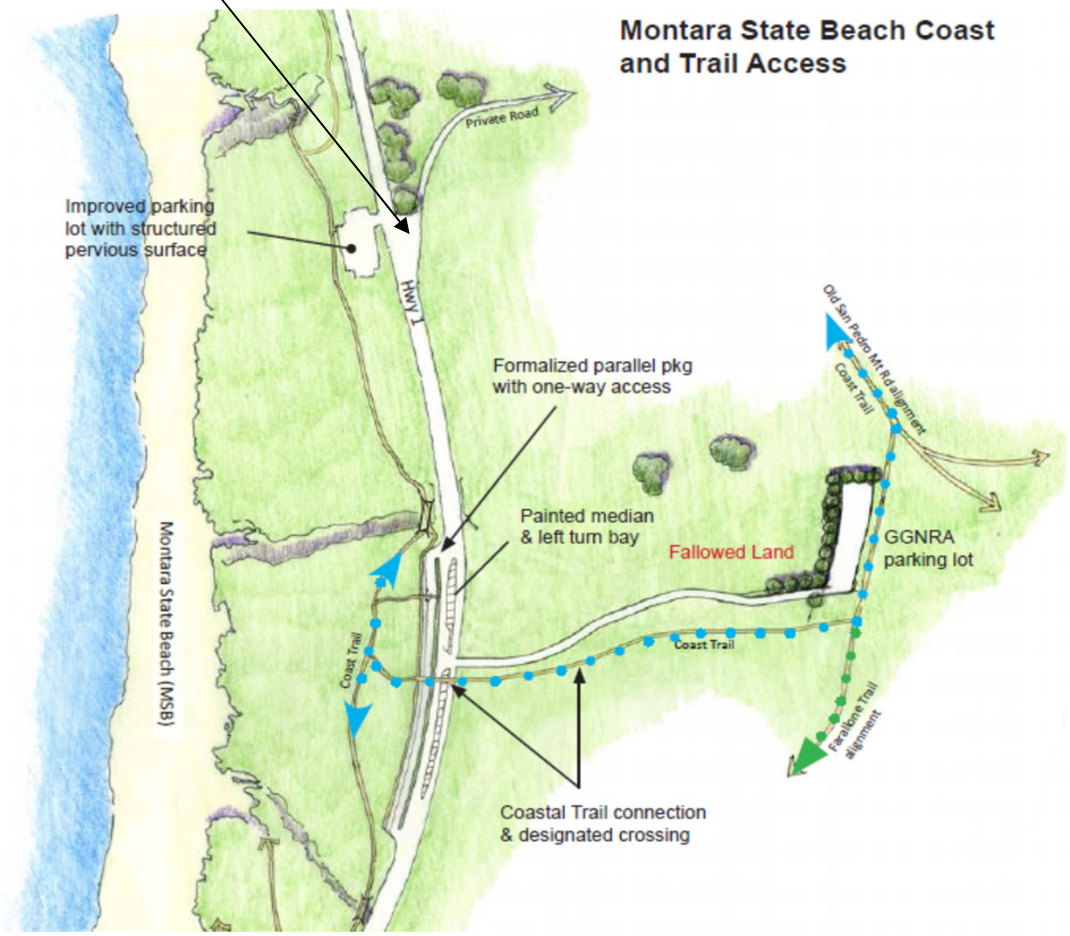


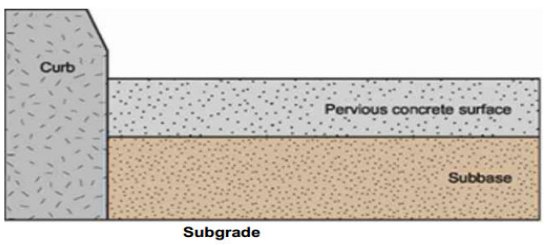
Project B4: Airport Class II Bike Lanes



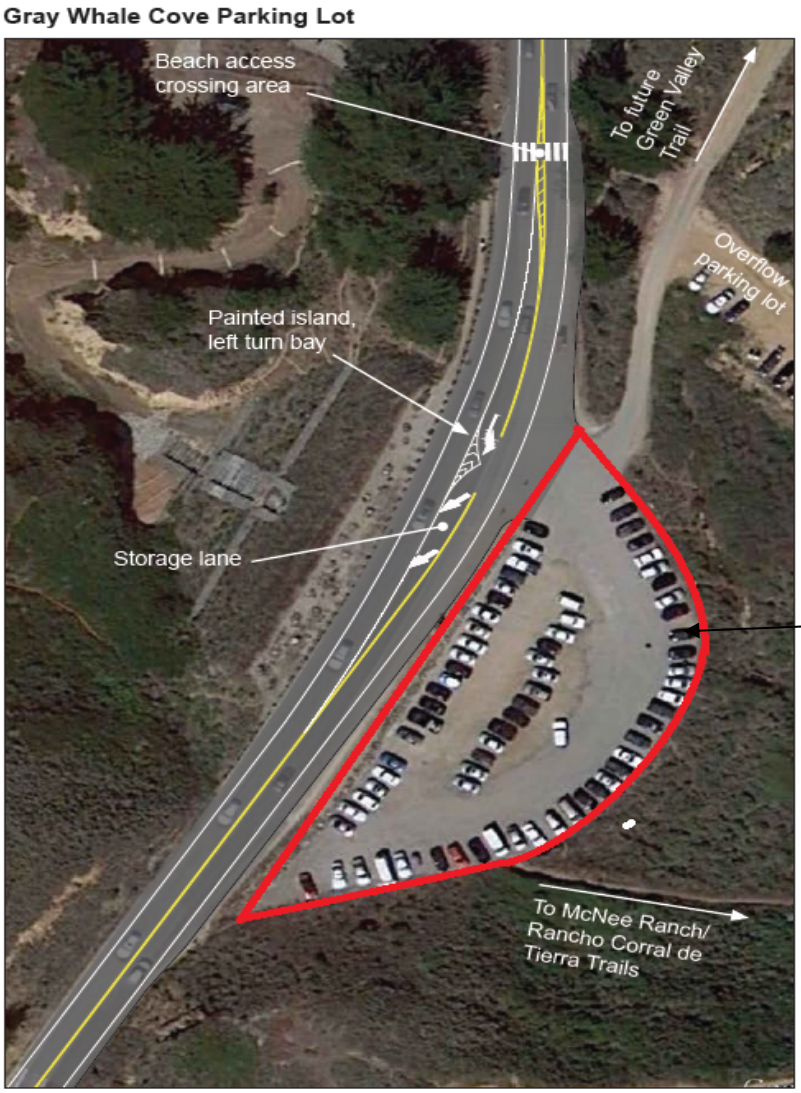
Project Pa1: Montara State Beach Parking

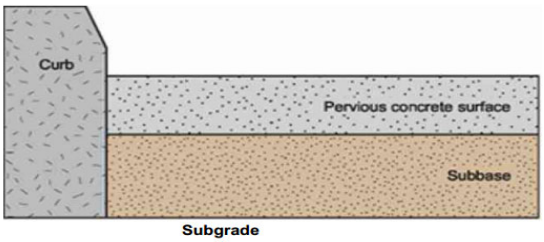
Project





Project Pa2: Gray Whale Cove Parking Lot Improvements





Project Pa3: Wayfinding

Pa4: Carlos Street On-Street Parking

Pa5: El Granada Diagonal Parking

Concept under Development

Appendix B
Cost Estimates

(Under Construction)

Appendix C
Technical Analysis Worksheets and Reports

SR-1 Existing Conditions Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	12	0	121	0	553	10	27	242	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	13	0	127	0	582	11	28	255	0
Pedestrians											3	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1024	904	255	899	899	590	255			593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1024	904	255	899	899	590	255			593		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	95	100	75	100			97		
cM capacity (veh/h)	156	269	784	254	271	506	1310			983		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	140	0	593	28	255
Volume Left	0	13	0	0	28	0
Volume Right	0	127	0	11	0	0
cSH	1700	464	1700	1700	983	1700
Volume to Capacity	0.00	0.30	0.00	0.35	0.03	0.15
Queue Length 95th (ft)	0	31	0	0	2	0
Control Delay (s)	0.0	16.1	0.0	0.0	8.8	0.0
Lane LOS	A	C			A	
Approach Delay (s)	0.0	16.1	0.0		0.9	
Approach LOS	A	C				

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	45.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	2	0	0	20	0	548	1	0	251	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	1	0	2	0	0	21	0	571	1	0	261	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	854	834	262	835	834	571	262			572		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	854	834	262	835	834	571	262			572		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	96	100			100		
cM capacity (veh/h)	268	304	777	286	304	520	1302			1001		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	3	21	0	572	262
Volume Left	1	0	0	0	0
Volume Right	2	21	0	1	1
cSH	475	520	1700	1700	1700
Volume to Capacity	0.01	0.04	0.00	0.34	0.15
Queue Length 95th (ft)	0	3	0	0	0
Control Delay (s)	12.6	12.2	0.0	0.0	0.0
Lane LOS	B	B			
Approach Delay (s)	12.6	12.2	0.0		0.0
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	96	21	524	14	3	248
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	97	21	529	14	3	251
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	793	536			543	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	793	536			543	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	96			100	
cM capacity (veh/h)	356	544			1025	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	118	543	254
Volume Left	97	0	3
Volume Right	21	14	0
cSH	380	1700	1025
Volume to Capacity	0.31	0.32	0.00
Queue Length 95th (ft)	33	0	0
Control Delay (s)	18.7	0.0	0.1
Lane LOS	C		A
Approach Delay (s)	18.7	0.0	0.1
Approach LOS	C		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	15	551	0	4	465
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	16	586	0	4	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1089	586			586	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1089	586			586	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	237	510			989	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	16	586	4	495
Volume Left	0	0	4	0
Volume Right	16	0	0	0
cSH	510	1700	989	1700
Volume to Capacity	0.03	0.34	0.00	0.29
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	12.3	0.0	8.7	0.0
Lane LOS	B		A	
Approach Delay (s)	12.3	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	3	8	0	27	0	513	2	11	446	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	0	3	8	0	28	0	534	2	11	465	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1051	1024	465	1026	1024	535	466			536		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1051	1024	465	1026	1024	535	466			536		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	96	100	95	100			99		
cM capacity (veh/h)	193	233	597	210	233	545	1096			1032		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	6	36	0	536	11	466
Volume Left	3	8	0	0	11	0
Volume Right	3	28	0	2	0	1
cSH	291	399	1700	1700	1032	1700
Volume to Capacity	0.02	0.09	0.00	0.32	0.01	0.27
Queue Length 95th (ft)	2	7	0	0	1	0
Control Delay (s)	17.6	14.9	0.0	0.0	8.5	0.0
Lane LOS	C	B			A	
Approach Delay (s)	17.6	14.9	0.0		0.2	
Approach LOS	C	B				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	37.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	1	10	33	0	12	4	506	34	9	460	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	6	1	11	35	0	13	4	544	37	10	495	0
Pedestrians											2	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1082	1103	495	1096	1085	564	495			581		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1082	1103	495	1096	1085	564	495			581		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	98	81	100	98	100			99		
cM capacity (veh/h)	188	208	575	184	214	524	1069			993		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	48	4	581	10	495
Volume Left	6	35	4	0	10	0
Volume Right	11	13	0	37	0	0
cSH	314	223	1069	1700	993	1700
Volume to Capacity	0.06	0.22	0.00	0.34	0.01	0.29
Queue Length 95th (ft)	5	20	0	0	1	0
Control Delay (s)	17.2	25.6	8.4	0.0	8.7	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	17.2	25.6	0.1		0.2	
Approach LOS	C	D				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	40.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	9	8	1	3	9	542	3	1	488	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	0	9	8	1	3	9	571	3	1	514	3
Pedestrians		1						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1112	1111	517	1117	1111	572	518			574		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1112	1111	517	1117	1111	572	518			574		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	95	99	99	99			100		
cM capacity (veh/h)	183	207	557	180	207	520	1047			999		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	12	13	9	574	1	517
Volume Left	2	8	9	0	1	0
Volume Right	9	3	0	3	0	3
cSH	406	218	1047	1700	999	1700
Volume to Capacity	0.03	0.06	0.01	0.34	0.00	0.30
Queue Length 95th (ft)	2	5	1	0	0	0
Control Delay (s)	14.1	22.6	8.5	0.0	8.6	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.1	22.6	0.1		0.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	39.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	3	13	29	1	5	1	534	20	2	495	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	3	14	31	1	5	1	562	21	2	521	8
Pedestrians					1			1				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1099	1116	526	1117	1109	574	529			584		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1099	1116	526	1117	1109	574	529			584		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	98	98	83	99	99	100			100		
cM capacity (veh/h)	187	207	551	177	209	518	1038			990		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	31	37	1	583	2	529
Volume Left	14	31	1	0	2	0
Volume Right	14	5	0	21	0	8
cSH	269	196	1038	1700	990	1700
Volume to Capacity	0.11	0.19	0.00	0.34	0.00	0.31
Queue Length 95th (ft)	9	17	0	0	0	0
Control Delay (s)	20.1	27.5	8.5	0.0	8.6	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	20.1	27.5	0.0		0.0	
Approach LOS	C	D				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	1	15	13	3	6	22	511	5	5	530	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	1	16	14	3	7	24	555	5	5	576	50
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1223	1221	601	1210	1243	558	626			561		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1223	1221	601	1210	1243	558	626			561		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	99	97	91	98	99	97			99		
cM capacity (veh/h)	148	174	500	150	169	529	956			1010		

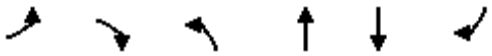
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	84	24	24	561	5	626
Volume Left	66	14	24	0	5	0
Volume Right	16	7	0	5	0	50
cSH	172	190	956	1700	1010	1700
Volume to Capacity	0.49	0.13	0.03	0.33	0.01	0.37
Queue Length 95th (ft)	58	11	2	0	0	0
Control Delay (s)	44.2	26.7	8.9	0.0	8.6	0.0
Lane LOS	E	D	A		A	
Approach Delay (s)	44.2	26.7	0.4		0.1	
Approach LOS	E	D				

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	43.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	0	521	14	1	544
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	12	0	573	15	1	598
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1180	580			588	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1180	580			588	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	210	514			987	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	588	599
Volume Left	12	0	1
Volume Right	0	15	0
cSH	210	1700	987
Volume to Capacity	0.06	0.35	0.00
Queue Length 95th (ft)	5	0	0
Control Delay (s)	23.2	0.0	0.0
Lane LOS	C		A
Approach Delay (s)	23.2	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	16	2	6	518	519	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	2	7	563	564	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	859	564	564			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	859	564	564			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	100	99			
cM capacity (veh/h)	294	469	1004			

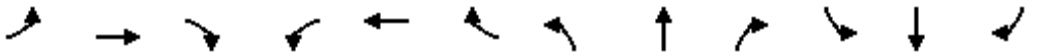
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	17	2	7	282	282	564	35
Volume Left	17	0	7	0	0	0	0
Volume Right	0	2	0	0	0	0	35
cSH	294	469	1004	1700	1700	1700	1700
Volume to Capacity	0.06	0.00	0.01	0.17	0.17	0.33	0.02
Queue Length 95th (ft)	5	0	0	0	0	0	0
Control Delay (s)	18.0	12.7	8.6	0.0	0.0	0.0	0.0
Lane LOS	C	B	A				
Approach Delay (s)	17.4		0.1			0.0	
Approach LOS	C						

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	35	51	445	20	18	505
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	38	55	478	22	19	543
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1071	489			500	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1071	489			500	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	91			98	
cM capacity (veh/h)	240	579			1064	

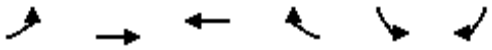
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	38	55	500	19	543
Volume Left	38	0	0	19	0
Volume Right	0	55	22	0	0
cSH	240	579	1700	1064	1700
Volume to Capacity	0.16	0.09	0.29	0.02	0.32
Queue Length 95th (ft)	14	8	0	1	0
Control Delay (s)	22.8	11.9	0.0	8.4	0.0
Lane LOS	C	B		A	
Approach Delay (s)	16.3		0.0	0.3	
Approach LOS	C				

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	97	96	79	67	158	96	353	41	87	400	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1855	1583		1710		3433	3484		1770	3539	1583
Flt Permitted		0.98	1.00		0.90		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1817	1583		1560		3433	3484		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	105	104	86	73	172	104	384	45	95	435	25
RTOR Reduction (vph)	0	0	55	0	21	0	0	11	0	0	0	19
Lane Group Flow (vph)	0	114	49	0	310	0	104	418	0	95	435	6
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8									2
Actuated Green, G (s)		30.5	30.5		30.5		5.3	14.2		6.7	15.6	15.6
Effective Green, g (s)		30.5	30.5		30.5		5.3	14.2		6.7	15.6	15.6
Actuated g/C Ratio		0.47	0.47		0.47		0.08	0.22		0.10	0.24	0.24
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		860	749		738		282	768		184	857	383
v/s Ratio Prot							0.03	0.12		c0.05	c0.12	
v/s Ratio Perm		0.06	0.03		c0.20							0.00
v/c Ratio		0.13	0.07		0.42		0.37	0.54		0.52	0.51	0.02
Uniform Delay, d1		9.5	9.2		11.1		28.0	22.2		27.3	21.1	18.6
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.0	0.0		0.1		0.3	1.0		1.0	0.6	0.0
Delay (s)		9.5	9.2		11.3		28.3	23.2		28.3	21.7	18.6
Level of Service		A	A		B		C	C		C	C	B
Approach Delay (s)		9.4			11.3			24.2			22.7	
Approach LOS		A			B			C			C	

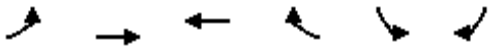
Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	43	655	483	196	431	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.5	5.5	5.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1545
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1545
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	47	720	531	215	474	22
RTOR Reduction (vph)	0	0	0	134	0	13
Lane Group Flow (vph)	47	720	531	81	474	9
Confl. Peds. (#/hr)						3
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.6	35.7	28.1	28.1	30.6	30.6
Effective Green, g (s)	4.6	35.7	28.1	28.1	30.6	30.6
Actuated g/C Ratio	0.06	0.48	0.38	0.38	0.41	0.41
Clearance Time (s)	3.0	5.5	5.5	5.5	3.0	3.0
Vehicle Extension (s)	2.5	2.4	2.4	2.4	2.0	2.0
Lane Grp Cap (vph)	108	889	699	594	724	632
v/s Ratio Prot	0.03	c0.39	0.29		c0.27	
v/s Ratio Perm				0.05		0.01
v/c Ratio	0.44	0.81	0.76	0.14	0.65	0.01
Uniform Delay, d1	33.8	16.7	20.4	15.4	17.8	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	5.3	4.5	0.1	1.6	0.0
Delay (s)	35.9	22.0	24.9	15.4	19.5	13.1
Level of Service	D	C	C	B	B	B
Approach Delay (s)		22.8	22.2		19.2	
Approach LOS		C	C		B	

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	11.5
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

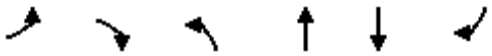
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	27	213	345	0	3	101
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	36	280	454	0	4	133
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked						
vC, conflicting volume	454				805	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	454				805	454
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	78
cM capacity (veh/h)	1107				340	606

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	316	454	137
Volume Left	36	0	4
Volume Right	0	0	133
cSH	1107	1700	593
Volume to Capacity	0.03	0.27	0.23
Queue Length 95th (ft)	2	0	22
Control Delay (s)	1.2	0.0	12.9
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	12.9
Approach LOS			B

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	7	2	9	716	1000	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	2	10	796	1111	22
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1939	1123	1134			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1939	1123	1134			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	99	98			
cM capacity (veh/h)	71	250	615			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	10	10	796	1133
Volume Left	8	10	0	0
Volume Right	2	0	0	22
cSH	84	615	1700	1700
Volume to Capacity	0.12	0.02	0.47	0.67
Queue Length 95th (ft)	10	1	0	0
Control Delay (s)	53.5	10.9	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	53.5	0.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	28	17	0	9	9	656	6	6	1039	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	0	31	19	0	10	10	721	7	7	1142	4
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1909	1904	1144	1930	1903	725	1146			727		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1909	1904	1144	1930	1903	725	1146			727		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	87	56	100	98	98			99		
cM capacity (veh/h)	50	67	243	43	67	425	610			876		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	29	10	727	7	1146
Volume Left	3	19	10	0	7	0
Volume Right	31	10	0	7	0	4
cSH	177	62	610	1700	876	1700
Volume to Capacity	0.19	0.46	0.02	0.43	0.01	0.67
Queue Length 95th (ft)	17	45	1	0	1	0
Control Delay (s)	30.2	104.5	11.0	0.0	9.1	0.0
Lane LOS	D	F	B		A	
Approach Delay (s)	30.2	104.5	0.1		0.1	
Approach LOS	D	F				

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	68.1%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	5	0	0	9	1	677	0	2	1085	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	5	0	0	10	1	744	0	2	1192	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1956	1946	1196	1948	1949	744	1199			744		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1956	1946	1196	1948	1949	744	1199			744		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	100	100	98	100			100		
cM capacity (veh/h)	47	64	227	47	64	415	582			864		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	5	10	1	744	2	1199
Volume Left	0	0	1	0	2	0
Volume Right	5	10	0	0	0	7
cSH	227	415	582	1700	864	1700
Volume to Capacity	0.02	0.02	0.00	0.44	0.00	0.71
Queue Length 95th (ft)	2	2	0	0	0	0
Control Delay (s)	21.3	13.9	11.2	0.0	9.2	0.0
Lane LOS	C	B	B		A	
Approach Delay (s)	21.3	13.9	0.0		0.0	
Approach LOS	C	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	67.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	12	0	75	0	549	8	54	819	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	13	0	80	0	584	9	57	871	0
Pedestrians											9	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1659	1579	871	1574	1574	597	871			593		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1659	1579	871	1574	1574	597	871			593		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	85	100	84	100			94		
cM capacity (veh/h)	62	103	350	85	103	499	774			983		

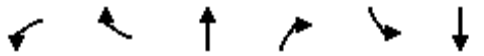
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	93	0	593	57	871
Volume Left	0	13	0	0	57	0
Volume Right	0	80	0	9	0	0
cSH	1700	299	1700	1700	983	1700
Volume to Capacity	0.00	0.31	0.00	0.35	0.06	0.51
Queue Length 95th (ft)	0	32	0	0	5	0
Control Delay (s)	0.0	22.4	0.0	0.0	8.9	0.0
Lane LOS	A	C			A	
Approach Delay (s)	0.0	22.4	0.0		0.5	
Approach LOS	A	C				

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	0	0	11	0	601	9	10	803	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	1	0	0	11	0	620	9	10	828	1
Pedestrians		1			4							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1481	1483	829	1478	1479	628	830			633		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1481	1483	829	1478	1479	628	830			633		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			99		
cM capacity (veh/h)	100	123	370	102	124	481	801			947		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1	11	0	629	839
Volume Left	0	0	0	0	10
Volume Right	1	11	0	9	1
cSH	370	481	1700	1700	947
Volume to Capacity	0.00	0.02	0.00	0.37	0.01
Queue Length 95th (ft)	0	2	0	0	1
Control Delay (s)	14.8	12.7	0.0	0.0	0.3
Lane LOS	B	B			A
Approach Delay (s)	14.8	12.7	0.0		0.3
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	60.3%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	59	16	588	13	16	789
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	61	16	606	13	16	813
Pedestrians	4					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1463	618			624	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1463	618			624	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	56	97			98	
cM capacity (veh/h)	139	487			954	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	77	620	830
Volume Left	61	0	16
Volume Right	16	13	0
cSH	164	1700	954
Volume to Capacity	0.47	0.36	0.02
Queue Length 95th (ft)	56	0	1
Control Delay (s)	45.3	0.0	0.5
Lane LOS	E		A
Approach Delay (s)	45.3	0.0	0.5
Approach LOS	E		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	8	613	0	7	918
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.96	0.96	0.98	0.98
Hourly flow rate (vph)	0	8	639	0	7	937
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1590	639			639	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1590	639			639	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			99	
cM capacity (veh/h)	118	476			945	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	8	639	7	937
Volume Left	0	0	7	0
Volume Right	8	0	0	0
cSH	476	1700	945	1700
Volume to Capacity	0.02	0.38	0.01	0.55
Queue Length 95th (ft)	1	0	1	0
Control Delay (s)	12.7	0.0	8.8	0.0
Lane LOS	B		A	
Approach Delay (s)	12.7	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	4	7	0	26	6	591	5	24	881	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	4	7	0	27	6	603	5	24	899	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1592	1571	902	1570	1571	606	904			608		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1592	1571	902	1570	1571	606	904			608		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	92	100	95	99			97		
cM capacity (veh/h)	80	107	336	86	107	497	752			970		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	34	6	608	24	904
Volume Left	0	7	6	0	24	0
Volume Right	4	27	0	5	0	5
cSH	336	248	752	1700	970	1700
Volume to Capacity	0.01	0.14	0.01	0.36	0.03	0.53
Queue Length 95th (ft)	1	12	1	0	2	0
Control Delay (s)	15.8	21.8	9.8	0.0	8.8	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	15.8	21.8	0.1		0.2	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	0	22	26	1	20	17	582	39	18	878	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	5	0	22	27	1	20	17	594	40	18	896	13
Pedestrians		1			2							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1590	1611	904	1606	1597	616	910			636		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1590	1611	904	1606	1597	616	910			636		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	93	65	99	96	98			98		
cM capacity (veh/h)	80	100	335	76	102	490	748			946		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	48	17	634	18	909
Volume Left	5	27	17	0	18	0
Volume Right	22	20	0	40	0	13
cSH	210	120	748	1700	946	1700
Volume to Capacity	0.13	0.40	0.02	0.37	0.02	0.53
Queue Length 95th (ft)	11	42	2	0	1	0
Control Delay (s)	24.7	53.7	9.9	0.0	8.9	0.0
Lane LOS	C	F	A		A	
Approach Delay (s)	24.7	53.7	0.3		0.2	
Approach LOS	C	F				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	60.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	0	29	16	2	9	13	590	17	11	947	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	9	0	31	16	2	9	13	608	18	11	976	8
Pedestrians		3									1	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1652	1659	983	1674	1654	618	988			626		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1652	1659	983	1674	1654	618	988			626		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	90	75	98	98	98			99		
cM capacity (veh/h)	74	94	301	66	95	489	698			956		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	40	28	13	626	11	985
Volume Left	9	16	13	0	11	0
Volume Right	31	9	0	18	0	8
cSH	180	96	698	1700	956	1700
Volume to Capacity	0.22	0.29	0.02	0.37	0.01	0.58
Queue Length 95th (ft)	20	27	1	0	1	0
Control Delay (s)	30.5	57.1	10.3	0.0	8.8	0.0
Lane LOS	D	F	B		A	
Approach Delay (s)	30.5	57.1	0.2		0.1	
Approach LOS	D	F				

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	60.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	3	5	10	3	5	9	613	30	11	952	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	10	3	5	10	3	5	9	626	31	11	971	12
Pedestrians					4			4			1	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1652	1678	982	1668	1669	646	984			660		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1652	1678	982	1668	1669	646	984			660		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	97	98	86	97	99	99			99		
cM capacity (veh/h)	74	92	301	71	93	470	702			925		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	18	9	656	11	984
Volume Left	10	10	9	0	11	0
Volume Right	5	5	0	31	0	12
cSH	98	98	702	1700	925	1700
Volume to Capacity	0.19	0.19	0.01	0.39	0.01	0.58
Queue Length 95th (ft)	16	16	1	0	1	0
Control Delay (s)	50.1	49.8	10.2	0.0	8.9	0.0
Lane LOS	F	E	B		A	
Approach Delay (s)	50.1	49.8	0.1		0.1	
Approach LOS	F	E				

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	62.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1	28	6	3	9	37	616	9	4	869	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	1	30	7	3	10	40	670	10	4	945	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1742	1740	972	1739	1762	674	999			679		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1742	1740	972	1739	1762	674	999			679		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	24	99	90	89	96	98	94			100		
cM capacity (veh/h)	61	81	306	58	79	454	693			913		

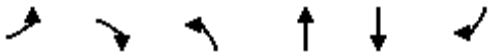
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	20	40	679	4	999
Volume Left	47	7	40	0	4	0
Volume Right	30	10	0	10	0	54
cSH	89	112	693	1700	913	1700
Volume to Capacity	0.87	0.18	0.06	0.40	0.00	0.59
Queue Length 95th (ft)	119	15	5	0	0	0
Control Delay (s)	146.0	44.0	10.5	0.0	9.0	0.0
Lane LOS	F	E	B		A	
Approach Delay (s)	146.0	44.0	0.6		0.0	
Approach LOS	F	E				

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	11	6	681	16	0	936
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	12	6	732	17	0	1006
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1747	741			749	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1747	741			749	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	98			100	
cM capacity (veh/h)	95	416			860	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	749	1006
Volume Left	12	0	0
Volume Right	6	17	0
cSH	130	1700	860
Volume to Capacity	0.14	0.44	0.00
Queue Length 95th (ft)	12	0	0
Control Delay (s)	37.1	0.0	0.0
Lane LOS	E		
Approach Delay (s)	37.1	0.0	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	24	16	686	909	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	30	26	17	730	967	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1366	967	967			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1366	967	967			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	90	98			
cM capacity (veh/h)	135	254	708			

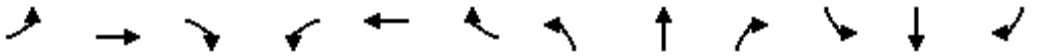
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	30	26	17	365	365	967	67
Volume Left	30	0	17	0	0	0	0
Volume Right	0	26	0	0	0	0	67
cSH	135	254	708	1700	1700	1700	1700
Volume to Capacity	0.22	0.10	0.02	0.21	0.21	0.57	0.04
Queue Length 95th (ft)	20	8	2	0	0	0	0
Control Delay (s)	39.1	20.7	10.2	0.0	0.0	0.0	0.0
Lane LOS	E	C	B				
Approach Delay (s)	30.6		0.2			0.0	
Approach LOS	D						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	19	45	661	30	57	874
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	20	48	711	32	61	940
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1789	727			743	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1789	727			743	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	75	89			93	
cM capacity (veh/h)	83	424			864	

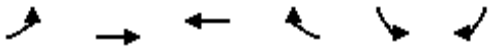
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	20	48	743	61	940
Volume Left	20	0	0	61	0
Volume Right	0	48	32	0	0
cSH	83	424	1700	864	1700
Volume to Capacity	0.25	0.11	0.44	0.07	0.55
Queue Length 95th (ft)	22	10	0	6	0
Control Delay (s)	62.2	14.6	0.0	9.5	0.0
Lane LOS	F	B		A	
Approach Delay (s)	28.7		0.0	0.6	
Approach LOS	D				

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	145	163	13	91	119	295	433	47	278	470	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1827	1583		1724		3433	3487		1770	3539	1583
Flt Permitted		0.74	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1386	1583		1691		3433	3487		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	158	177	14	99	129	321	471	51	302	511	107
RTOR Reduction (vph)	0	0	97	0	43	0	0	10	0	0	0	70
Lane Group Flow (vph)	0	259	80	0	199	0	321	512	0	302	511	37
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								2
Actuated Green, G (s)		18.1	18.1		18.1		11.2	17.1		16.3	22.2	22.2
Effective Green, g (s)		18.1	18.1		18.1		11.2	17.1		16.3	22.2	22.2
Actuated g/C Ratio		0.28	0.28		0.28		0.17	0.27		0.25	0.34	0.34
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		388	444		474		596	924		447	1218	544
v/s Ratio Prot							0.09	c0.15		c0.17	0.14	
v/s Ratio Perm		c0.19	0.05		0.12							0.02
v/c Ratio		0.67	0.18		0.42		0.54	0.55		0.68	0.42	0.07
Uniform Delay, d1		20.5	17.6		18.9		24.3	20.4		21.7	16.2	14.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.4	0.1		0.2		0.5	0.9		3.2	0.3	0.1
Delay (s)		23.9	17.6		19.1		24.8	21.3		24.9	16.5	14.3
Level of Service		C	B		B		C	C		C	B	B
Approach Delay (s)		21.4			19.1			22.6			19.0	
Approach LOS		C			B			C			B	

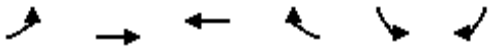
Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	64.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	794	15	25	336	235	760
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	3.0	3.0	3.0	5.5	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	854	16	27	361	253	817
RTOR Reduction (vph)	0	0	0	164	0	366
Lane Group Flow (vph)	854	16	27	197	253	451
Turn Type	Prot	NA	NA	custom	NA	custom
Protected Phases	2!	5		4		6
Permitted Phases			4		6!	
Actuated Green, G (s)	35.0	0.9	12.9	12.9	31.1	31.1
Effective Green, g (s)	35.0	0.9	12.9	12.9	31.1	31.1
Actuated g/C Ratio	0.62	0.02	0.23	0.23	0.55	0.55
Clearance Time (s)	5.5	3.0	3.0	3.0	5.5	5.5
Vehicle Extension (s)	2.4	2.5	2.0	2.0	2.4	2.4
Lane Grp Cap (vph)	1098	29	426	362	976	872
v/s Ratio Prot	c0.48	0.01		c0.12		0.28
v/s Ratio Perm			0.01		0.14	
v/c Ratio	0.78	0.55	0.06	0.54	0.26	0.52
Uniform Delay, d1	7.8	27.5	17.0	19.2	6.6	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	16.9	0.0	0.9	0.1	0.4
Delay (s)	11.2	44.5	17.0	20.1	6.7	8.3
Level of Service	B	D	B	C	A	A
Approach Delay (s)		11.8	19.8		7.9	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	11.5
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

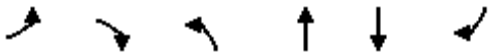
! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	115	178	305	4	4	186
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	120	185	318	4	4	194
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked					0.93	
vC, conflicting volume	333				756	331
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333				701	331
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				99	72
cM capacity (veh/h)	1215				337	704

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	305	322	198
Volume Left	120	0	4
Volume Right	0	4	194
cSH	1215	1700	688
Volume to Capacity	0.10	0.19	0.29
Queue Length 95th (ft)	8	0	30
Control Delay (s)	3.8	0.0	12.3
Lane LOS	A		B
Approach Delay (s)	3.8	0.0	12.3
Approach LOS			B

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	20	28	986	1106	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	15	22	31	1084	1215	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2373	1228	1241			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2373	1228	1241			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	90	95			
cM capacity (veh/h)	36	217	561			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	37	31	1084	1241
Volume Left	15	31	0	0
Volume Right	22	0	0	25
cSH	71	561	1700	1700
Volume to Capacity	0.53	0.05	0.64	0.73
Queue Length 95th (ft)	55	4	0	0
Control Delay (s)	102.2	11.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	102.2	0.3		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	0	38	17	0	28	32	981	19	22	1096	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	7	0	40	18	0	29	33	1022	20	23	1142	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2312	2303	1148	2326	2299	1032	1155			1042		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2312	2303	1148	2326	2299	1032	1155			1042		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	84	13	100	90	94			97		
cM capacity (veh/h)	22	35	242	20	35	283	605			668		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	47	33	1042	23	1155
Volume Left	7	18	33	0	23	0
Volume Right	40	29	0	20	0	14
cSH	96	48	605	1700	668	1700
Volume to Capacity	0.49	0.97	0.06	0.61	0.03	0.68
Queue Length 95th (ft)	53	103	4	0	3	0
Control Delay (s)	74.5	254.8	11.3	0.0	10.6	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	74.5	254.8	0.4		0.2	
Approach LOS	F	F				

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	70.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1	14	1	0	5	4	1050	12	8	1108	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	1	15	1	0	5	4	1105	13	8	1166	9
Pedestrians					1						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2308	2315	1171	2319	2314	1114	1176			1119		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2308	2315	1171	2319	2314	1114	1176			1119		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	97	94	96	100	98	99			99		
cM capacity (veh/h)	26	37	235	24	37	253	594			624		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	18	6	4	1118	8	1176
Volume Left	2	1	4	0	8	0
Volume Right	15	5	0	13	0	9
cSH	104	97	594	1700	624	1700
Volume to Capacity	0.17	0.07	0.01	0.66	0.01	0.69
Queue Length 95th (ft)	15	5	1	0	1	0
Control Delay (s)	46.9	44.7	11.1	0.0	10.9	0.0
Lane LOS	E	E	B		B	
Approach Delay (s)	46.9	44.7	0.0		0.1	
Approach LOS	E	E				

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	69.2%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	7	0	50	0	451	8	128	609	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	7	0	51	0	460	8	131	621	0
Pedestrians											4	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1398	1351	621	1347	1347	468	621			468		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1398	1351	621	1347	1347	468	621			468		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	100	91	100			88		
cM capacity (veh/h)	98	132	487	116	133	593	959			1093		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	58	0	468	131	621
Volume Left	0	7	0	0	131	0
Volume Right	0	51	0	8	0	0
cSH	1700	395	1700	1700	1093	1700
Volume to Capacity	0.00	0.15	0.00	0.28	0.12	0.37
Queue Length 95th (ft)	0	13	0	0	10	0
Control Delay (s)	0.0	15.7	0.0	0.0	8.7	0.0
Lane LOS	A	C			A	
Approach Delay (s)	0.0	15.7	0.0		1.5	
Approach LOS	A	C				

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	50.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	1	0	0	10	0	447	16	0	643	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	1	0	0	11	0	476	17	0	684	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1170	1177	684	1169	1168	484	684			493		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1170	1177	684	1169	1168	484	684			493		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			100		
cM capacity (veh/h)	167	191	449	170	193	583	909			1071		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	1	11	0	493	684
Volume Left	0	0	0	0	0
Volume Right	1	11	0	17	0
cSH	449	583	1700	1700	1700
Volume to Capacity	0.00	0.02	0.00	0.29	0.40
Queue Length 95th (ft)	0	1	0	0	0
Control Delay (s)	13.0	11.3	0.0	0.0	0.0
Lane LOS	B	B			
Approach Delay (s)	13.0	11.3	0.0		0.0
Approach LOS	B	B			

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	43.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	88	14	439	12	12	630
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	93	15	462	13	13	663
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1157	468			475	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1157	468			475	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	98			99	
cM capacity (veh/h)	215	595			1087	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	107	475	676
Volume Left	93	0	13
Volume Right	15	13	0
cSH	235	1700	1087
Volume to Capacity	0.46	0.28	0.01
Queue Length 95th (ft)	55	0	1
Control Delay (s)	32.5	0.0	0.3
Lane LOS	D		A
Approach Delay (s)	32.5	0.0	0.3
Approach LOS	D		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	4	566	0	12	721
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	4	590	0	12	751
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1366	590			590	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1366	590			590	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			99	
cM capacity (veh/h)	160	508			986	

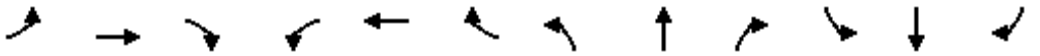
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	4	590	12	751
Volume Left	0	0	12	0
Volume Right	4	0	0	0
cSH	508	1700	986	1700
Volume to Capacity	0.01	0.35	0.01	0.44
Queue Length 95th (ft)	1	0	1	0
Control Delay (s)	12.1	0.0	8.7	0.0
Lane LOS	B		A	
Approach Delay (s)	12.1	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	6	8	2	14	9	541	7	44	677	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	0	6	8	2	15	9	569	7	46	713	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1412	1403	715	1404	1402	573	717			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1412	1403	715	1404	1402	573	717			577		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	92	98	97	99			95		
cM capacity (veh/h)	106	132	431	110	132	519	884			997		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	25	9	577	46	717
Volume Left	2	8	9	0	46	0
Volume Right	6	15	0	7	0	4
cSH	244	209	884	1700	997	1700
Volume to Capacity	0.03	0.12	0.01	0.34	0.05	0.42
Queue Length 95th (ft)	3	10	1	0	4	0
Control Delay (s)	20.3	24.5	9.1	0.0	8.8	0.0
Lane LOS	C	C	A		A	
Approach Delay (s)	20.3	24.5	0.1		0.5	
Approach LOS	C	C				

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	46.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	12	37	2	16	14	561	45	14	660	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	0	13	39	2	17	15	591	47	15	695	7
Pedestrians					4						7	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1373	1399	698	1385	1379	625	702			642		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1373	1399	698	1385	1379	625	702			642		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	97	66	98	96	98			98		
cM capacity (veh/h)	114	136	440	114	139	480	895			940		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	16	58	15	638	15	702
Volume Left	3	39	15	0	15	0
Volume Right	13	17	0	47	0	7
cSH	279	148	895	1700	940	1700
Volume to Capacity	0.06	0.39	0.02	0.38	0.02	0.41
Queue Length 95th (ft)	4	42	1	0	1	0
Control Delay (s)	18.7	44.4	9.1	0.0	8.9	0.0
Lane LOS	C	E	A		A	
Approach Delay (s)	18.7	44.4	0.2		0.2	
Approach LOS	C	E				

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	51.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	2	15	19	1	11	15	599	26	9	676	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	9	2	16	20	1	12	16	644	28	10	727	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1440	1455	732	1454	1446	658	737			672		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1440	1455	732	1454	1446	658	737			672		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	98	96	80	99	97	98			99		
cM capacity (veh/h)	105	126	421	100	128	464	869			919		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	27	33	16	672	10	737
Volume Left	9	20	16	0	10	0
Volume Right	16	12	0	28	0	10
cSH	196	140	869	1700	919	1700
Volume to Capacity	0.14	0.24	0.02	0.40	0.01	0.43
Queue Length 95th (ft)	12	22	1	0	1	0
Control Delay (s)	26.3	38.5	9.2	0.0	9.0	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	26.3	38.5	0.2		0.1	
Approach LOS	D	E				

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	2	15	21	1	5	7	635	32	7	695	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	8	2	16	22	1	5	7	668	34	7	732	6
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1439	1467	736	1463	1454	685	739			702		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1439	1467	736	1463	1454	685	739			702		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	98	96	78	99	99	99			99		
cM capacity (veh/h)	107	125	419	100	128	448	867			895		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	26	28	7	702	7	738
Volume Left	8	22	7	0	7	0
Volume Right	16	5	0	34	0	6
cSH	198	118	867	1700	895	1700
Volume to Capacity	0.13	0.24	0.01	0.41	0.01	0.43
Queue Length 95th (ft)	11	22	1	0	1	0
Control Delay (s)	26.0	45.0	9.2	0.0	9.1	0.0
Lane LOS	D	E	A		A	
Approach Delay (s)	26.0	45.0	0.1		0.1	
Approach LOS	D	E				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	46.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	1	1	55	7	26	7	602	68	35	696	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	1	1	60	8	28	8	654	74	38	757	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1540	1582	762	1541	1551	691	768			728		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1540	1582	762	1541	1551	691	768			728		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	85	99	100	33	93	94	99			96		
cM capacity (veh/h)	80	103	405	89	108	444	846			875		

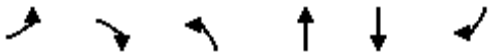
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	14	96	8	728	38	768
Volume Left	12	60	8	0	38	0
Volume Right	1	28	0	74	0	12
cSH	87	119	846	1700	875	1700
Volume to Capacity	0.16	0.80	0.01	0.43	0.04	0.45
Queue Length 95th (ft)	14	118	1	0	3	0
Control Delay (s)	54.3	104.6	9.3	0.0	9.3	0.0
Lane LOS	F	F	A		A	
Approach Delay (s)	54.3	104.6	0.1		0.4	
Approach LOS	F	F				

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	0	637	26	0	694
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	22	0	685	28	0	746
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1445	699			713	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1445	699			713	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	100			100	
cM capacity (veh/h)	145	440			887	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	22	713	746
Volume Left	22	0	0
Volume Right	0	28	0
cSH	145	1700	887
Volume to Capacity	0.15	0.42	0.00
Queue Length 95th (ft)	13	0	0
Control Delay (s)	34.1	0.0	0.0
Lane LOS	D		
Approach Delay (s)	34.1	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	15	12	663	676	48
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	29	16	13	713	727	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1109	727	727			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1109	727	727			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	96	99			
cM capacity (veh/h)	201	366	872			

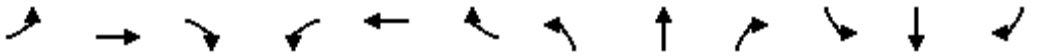
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	29	16	13	356	356	727	52
Volume Left	29	0	13	0	0	0	0
Volume Right	0	16	0	0	0	0	52
cSH	201	366	872	1700	1700	1700	1700
Volume to Capacity	0.14	0.04	0.01	0.21	0.21	0.43	0.03
Queue Length 95th (ft)	12	3	1	0	0	0	0
Control Delay (s)	26.0	15.3	9.2	0.0	0.0	0.0	0.0
Lane LOS	D	C	A				
Approach Delay (s)	22.1		0.2			0.0	
Approach LOS	C						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	30	619	56	66	620
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	20	33	680	62	73	681
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1537	711			742	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1537	711			742	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	92			92	
cM capacity (veh/h)	117	433			865	

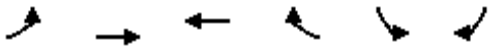
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	20	33	742	73	681
Volume Left	20	0	0	73	0
Volume Right	0	33	62	0	0
cSH	117	433	1700	865	1700
Volume to Capacity	0.17	0.08	0.44	0.08	0.40
Queue Length 95th (ft)	15	6	0	7	0
Control Delay (s)	42.0	14.0	0.0	9.5	0.0
Lane LOS	E	B		A	
Approach Delay (s)	24.5		0.0	0.9	
Approach LOS	C				

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	74	78	46	78	188	137	467	26	198	617	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.92		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1820	1583		1699		3433	3511		1770	3539	1583
Flt Permitted		0.65	1.00		0.94		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1219	1583		1603		3433	3511		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	80	85	50	85	204	149	508	28	215	671	71
RTOR Reduction (vph)	0	0	63	0	58	0	0	4	0	0	0	42
Lane Group Flow (vph)	0	152	22	0	281	0	149	532	0	215	671	29
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								2
Actuated Green, G (s)		15.2	15.2		15.2		6.0	17.8		12.4	24.2	24.2
Effective Green, g (s)		15.2	15.2		15.2		6.0	17.8		12.4	24.2	24.2
Actuated g/C Ratio		0.26	0.26		0.26		0.10	0.30		0.21	0.41	0.41
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		317	412		417		352	1070		375	1466	655
v/s Ratio Prot							0.04	0.15		c0.12	c0.19	
v/s Ratio Perm		0.12	0.01		c0.18							0.02
v/c Ratio		0.48	0.05		0.67		0.42	0.50		0.57	0.46	0.04
Uniform Delay, d1		18.3	16.2		19.4		24.6	16.6		20.6	12.4	10.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.0		3.4		0.3	0.5		1.3	0.3	0.0
Delay (s)		18.7	16.2		22.7		24.9	17.1		21.9	12.7	10.2
Level of Service		B	B		C		C	B		C	B	B
Approach Delay (s)		17.8			22.7			18.8			14.6	
Approach LOS		B			C			B			B	

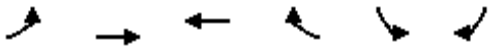
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	34	658	834	394	232	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	5.5	5.5	5.5	3.0	3.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1496
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1496
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	708	897	424	249	23
RTOR Reduction (vph)	0	0	0	167	0	18
Lane Group Flow (vph)	37	708	897	257	249	5
Confl. Peds. (#/hr)						23
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.1	58.1	51.0	51.0	17.5	17.5
Effective Green, g (s)	4.1	58.1	51.0	51.0	17.5	17.5
Actuated g/C Ratio	0.05	0.69	0.61	0.61	0.21	0.21
Clearance Time (s)	3.0	5.5	5.5	5.5	3.0	3.0
Vehicle Extension (s)	2.5	2.4	2.4	2.4	2.0	2.0
Lane Grp Cap (vph)	86	1287	1129	959	368	311
v/s Ratio Prot	0.02	c0.38	c0.48		c0.14	
v/s Ratio Perm				0.16		0.00
v/c Ratio	0.43	0.55	0.79	0.27	0.68	0.02
Uniform Delay, d1	38.9	6.5	12.6	7.8	30.7	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.4	3.8	0.1	3.8	0.0
Delay (s)	41.4	6.9	16.4	7.9	34.5	26.5
Level of Service	D	A	B	A	C	C
Approach Delay (s)		8.6	13.6		33.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

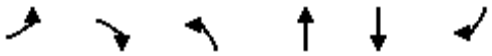
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	118	308	160	2	4	86
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	133	346	180	2	4	97
Pedestrians			1		5	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked						
vC, conflicting volume	187				798	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	187				798	186
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				99	89
cM capacity (veh/h)	1382				319	853

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	479	182	101
Volume Left	133	0	4
Volume Right	0	2	97
cSH	1382	1700	794
Volume to Capacity	0.10	0.11	0.13
Queue Length 95th (ft)	8	0	11
Control Delay (s)	2.9	0.0	10.2
Lane LOS	A		B
Approach Delay (s)	2.9	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	13	24	1211	863	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	15	14	25	1275	908	31
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2249	924	939			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2249	924	939			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	67	96	97			
cM capacity (veh/h)	44	327	730			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	28	25	1275	939
Volume Left	15	25	0	0
Volume Right	14	0	0	31
cSH	76	730	1700	1700
Volume to Capacity	0.37	0.03	0.75	0.55
Queue Length 95th (ft)	36	3	0	0
Control Delay (s)	78.5	10.1	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	78.5	0.2		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	24	6	0	18	20	1197	30	15	852	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	0	25	6	0	19	21	1247	31	16	888	8
Pedestrians		1									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2233	2244	893	2248	2232	1264	897			1278		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2233	2244	893	2248	2232	1264	897			1278		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	93	76	100	91	97			97		
cM capacity (veh/h)	26	40	340	26	40	206	756			543		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	25	21	1278	16	896
Volume Left	3	6	21	0	16	0
Volume Right	25	19	0	31	0	8
cSH	146	76	756	1700	543	1700
Volume to Capacity	0.19	0.33	0.03	0.75	0.03	0.53
Queue Length 95th (ft)	17	31	2	0	2	0
Control Delay (s)	35.3	73.9	9.9	0.0	11.8	0.0
Lane LOS	E	F	A		B	
Approach Delay (s)	35.3	73.9	0.2		0.2	
Approach LOS	E	F				

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	75.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	0	1	0	0	4	0	1293	2	5	869	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	1	0	0	4	0	1405	2	5	945	3
Pedestrians					1						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2368	2366	946	2364	2366	1409	948			1409		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2368	2366	946	2364	2366	1409	948			1409		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	97	100			99		
cM capacity (veh/h)	23	35	317	24	35	170	724			484		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	2	4	0	1408	5	948
Volume Left	1	0	0	0	5	0
Volume Right	1	4	0	2	0	3
cSH	44	170	1700	1700	484	1700
Volume to Capacity	0.05	0.03	0.00	0.83	0.01	0.56
Queue Length 95th (ft)	4	2	0	0	1	0
Control Delay (s)	91.7	26.8	0.0	0.0	12.5	0.0
Lane LOS	F	D			B	
Approach Delay (s)	91.7	26.8	0.0		0.1	
Approach LOS	F	D				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	78.5%	ICU Level of Service	D	
Analysis Period (min)	15			

SR-1 Buildout Conditions Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	26	0	164	0	872	13	50	777	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	27	0	173	0	918	14	53	818	0
Pedestrians											3	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2017	1855	818	1848	1848	928	818			932		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2017	1855	818	1848	1848	928	818			932		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	49	100	47	100			93		
cM capacity (veh/h)	19	69	376	54	69	324	810			735		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	200	0	932	53	818
Volume Left	0	27	0	0	53	0
Volume Right	0	173	0	14	0	0
cSH	1700	193	1700	1700	735	1700
Volume to Capacity	0.00	1.04	0.00	0.55	0.07	0.48
Queue Length 95th (ft)	0	228	0	0	6	0
Control Delay (s)	0.0	126.3	0.0	0.0	10.3	0.0
Lane LOS	A	F			B	
Approach Delay (s)	0.0	126.3	0.0		0.6	
Approach LOS	A	F				

Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	69	0	808	26	0	796	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	0	0	0	72	0	842	27	0	829	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1743	1698	829	1684	1684	855	829			869		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1743	1698	829	1684	1684	855	829			869		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	80	100			100		
cM capacity (veh/h)	54	92	370	75	94	358	802			776		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	0	72	0	869	829
Volume Left	0	0	0	0	0
Volume Right	0	72	0	27	0
cSH	1700	358	1700	1700	1700
Volume to Capacity	0.00	0.20	0.00	0.51	0.49
Queue Length 95th (ft)	0	18	0	0	0
Control Delay (s)	0.0	17.6	0.0	0.0	0.0
Lane LOS	A	C			
Approach Delay (s)	0.0	17.6	0.0		0.0
Approach LOS	A	C			

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	55.0%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	116	19	823	19	7	783
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	117	19	831	19	7	791
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1646	841			851	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1646	841			851	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	95			99	
cM capacity (veh/h)	108	365			788	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	136	851	798
Volume Left	117	0	7
Volume Right	19	19	0
cSH	120	1700	788
Volume to Capacity	1.13	0.50	0.01
Queue Length 95th (ft)	206	0	1
Control Delay (s)	192.4	0.0	0.2
Lane LOS	F		A
Approach Delay (s)	192.4	0.0	0.2
Approach LOS	F		

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	28	847	0	14	1009
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	30	901	0	15	1073
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2004	901			901	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2004	901			901	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	91			98	
cM capacity (veh/h)	64	337			754	

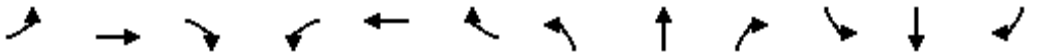
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	30	901	15	1073
Volume Left	0	0	15	0
Volume Right	30	0	0	0
cSH	337	1700	754	1700
Volume to Capacity	0.09	0.53	0.02	0.63
Queue Length 95th (ft)	7	0	2	0
Control Delay (s)	16.7	0.0	9.9	0.0
Lane LOS	C		A	
Approach Delay (s)	16.7	0.0	0.1	
Approach LOS	C			

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	5	0	35	0	803	1	15	1010	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	0	5	0	36	0	836	1	16	1052	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1956	1921	1052	1920	1920	837	1052			838		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1956	1921	1052	1920	1920	837	1052			838		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	100	90	100			98		
cM capacity (veh/h)	43	66	275	50	66	367	662			797		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	42	0	838	16	1052
Volume Left	0	5	0	0	16	0
Volume Right	0	36	0	1	0	0
cSH	1700	205	1700	1700	797	1700
Volume to Capacity	0.00	0.20	0.00	0.49	0.02	0.62
Queue Length 95th (ft)	0	18	0	0	1	0
Control Delay (s)	0.0	27.0	0.0	0.0	9.6	0.0
Lane LOS	A	D			A	
Approach Delay (s)	0.0	27.0	0.0		0.1	
Approach LOS	A	D				

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	63.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	19	49	0	15	14	752	43	15	992	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	1	20	53	0	16	15	809	46	16	1067	0
Pedestrians											2	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1956	1984	1067	1982	1961	834	1067			855		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1956	1984	1067	1982	1961	834	1067			855		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	76	98	92	0	100	96	98			98		
cM capacity (veh/h)	44	59	270	41	61	368	653			785		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	32	69	15	855	16	1067
Volume Left	11	53	15	0	16	0
Volume Right	20	16	0	46	0	0
cSH	96	51	653	1700	785	1700
Volume to Capacity	0.34	1.34	0.02	0.50	0.02	0.63
Queue Length 95th (ft)	33	157	2	0	2	0
Control Delay (s)	60.6	373.0	10.6	0.0	9.7	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	60.6	373.0	0.2		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	13.6			
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	15	10	2	3	21	798	5	2	1033	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	3	0	16	11	2	3	22	840	5	2	1087	8
Pedestrians		1						1				
Lane Width (ft)		12.0						12.0				
Walking Speed (ft/s)		4.0						4.0				
Percent Blockage		0						0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1985	1986	1094	1995	1988	843	1097			845		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1985	1986	1094	1995	1988	843	1097			845		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	94	74	96	99	97			100		
cM capacity (veh/h)	43	59	260	41	59	364	636			791		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	19	16	22	845	2	1096
Volume Left	3	11	22	0	2	0
Volume Right	16	3	0	5	0	8
cSH	141	52	636	1700	791	1700
Volume to Capacity	0.13	0.30	0.03	0.50	0.00	0.64
Queue Length 95th (ft)	11	26	3	0	0	0
Control Delay (s)	34.5	101.1	10.9	0.0	9.6	0.0
Lane LOS	D	F	B		A	
Approach Delay (s)	34.5	101.1	0.3		0.0	
Approach LOS	D	F				

Intersection Summary				
Average Delay	1.3			
Intersection Capacity Utilization	65.2%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	3	18	35	2	5	3	793	24	3	1033	24
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	3	19	37	2	5	3	835	25	3	1087	25
Pedestrians					1			1				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					4.0			4.0				
Percent Blockage					0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1954	1974	1101	1970	1974	848	1113			861		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1954	1974	1101	1970	1974	848	1113			861		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	95	93	11	97	99	99			100		
cM capacity (veh/h)	46	62	258	41	62	361	628			780		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	38	44	3	860	3	1113
Volume Left	16	37	3	0	3	0
Volume Right	19	5	0	25	0	25
cSH	81	47	628	1700	780	1700
Volume to Capacity	0.47	0.94	0.01	0.51	0.00	0.65
Queue Length 95th (ft)	49	97	0	0	0	0
Control Delay (s)	84.0	248.5	10.8	0.0	9.6	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	84.0	248.5	0.0		0.0	
Approach LOS	F	F				

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	77	2	23	23	3	9	20	756	9	10	1058	49
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	2	25	25	3	10	22	822	10	11	1150	53
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2075	2073	1177	2068	2095	827	1203			832		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2075	2073	1177	2068	2095	827	1203			832		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	89	25	93	97	96			99		
cM capacity (veh/h)	35	51	233	33	50	372	580			801		

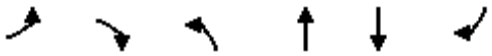
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	111	38	22	832	11	1203
Volume Left	84	25	22	0	11	0
Volume Right	25	10	0	10	0	53
cSH	44	45	580	1700	801	1700
Volume to Capacity	2.54	0.85	0.04	0.49	0.01	0.71
Queue Length 95th (ft)	297	84	3	0	1	0
Control Delay (s)	894.7	228.6	11.4	0.0	9.6	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	894.7	228.6	0.3		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	48.8			
Intersection Capacity Utilization	72.4%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	13	0	727	0	18	1016
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	14	0	799	0	20	1116
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1955	799			799	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1955	799			799	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	100			98	
cM capacity (veh/h)	69	386			824	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	14	799	1136
Volume Left	14	0	20
Volume Right	0	0	0
cSH	69	1700	824
Volume to Capacity	0.21	0.47	0.02
Queue Length 95th (ft)	18	0	2
Control Delay (s)	70.8	0.0	0.8
Lane LOS	F		A
Approach Delay (s)	70.8	0.0	0.8
Approach LOS	F		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	16	2	6	518	519	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	2	7	563	564	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	859	564	564			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	859	564	564			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	100	99			
cM capacity (veh/h)	294	469	1004			

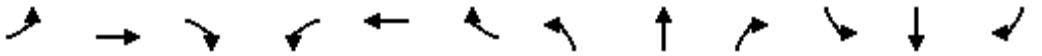
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	17	2	7	282	282	564	35
Volume Left	17	0	7	0	0	0	0
Volume Right	0	2	0	0	0	0	35
cSH	294	469	1004	1700	1700	1700	1700
Volume to Capacity	0.06	0.00	0.01	0.17	0.17	0.33	0.02
Queue Length 95th (ft)	5	0	0	0	0	0	0
Control Delay (s)	18.0	12.7	8.6	0.0	0.0	0.0	0.0
Lane LOS	C	B	A				
Approach Delay (s)	17.4		0.1			0.0	
Approach LOS	C						

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	51	55	595	25	25	962
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	55	59	640	27	27	1034
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1741	653			667	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1741	653			667	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	41	87			97	
cM capacity (veh/h)	93	467			923	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	55	59	667	27	1034
Volume Left	55	0	0	27	0
Volume Right	0	59	27	0	0
cSH	93	467	1700	923	1700
Volume to Capacity	0.59	0.13	0.39	0.03	0.61
Queue Length 95th (ft)	69	11	0	2	0
Control Delay (s)	89.1	13.8	0.0	9.0	0.0
Lane LOS	F	B		A	
Approach Delay (s)	50.0		0.0	0.2	
Approach LOS	F				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		



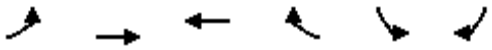
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	138	181	122	109	196	158	445	48	126	763	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1855	1583		1723		3433	3488		1770	3539	1583
Flt Permitted		0.96	1.00		0.86		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1791	1583		1499		3433	3488		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	150	197	133	118	213	172	484	52	137	829	50
RTOR Reduction (vph)	0	0	119	0	19	0	0	9	0	0	0	34
Lane Group Flow (vph)	0	163	78	0	445	0	172	527	0	137	829	16
Turn Type	Perm	NA	Perm		NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8									2
Actuated Green, G (s)		30.3	30.3		30.3		8.4	23.1		10.5	25.2	25.2
Effective Green, g (s)		30.3	30.3		30.3		8.4	23.1		10.5	25.2	25.2
Actuated g/C Ratio		0.39	0.39		0.39		0.11	0.30		0.14	0.33	0.33
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		705	623		590		374	1047		241	1159	518
v/s Ratio Prot							0.05	0.15		c0.08	c0.23	
v/s Ratio Perm		0.09	0.05		c0.30							0.01
v/c Ratio		0.23	0.12		0.75		0.46	0.50		0.57	0.72	0.03
Uniform Delay, d1		15.5	14.8		20.1		32.1	22.2		31.1	22.7	17.6
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.1	0.0		4.9		0.3	0.5		1.8	2.3	0.0
Delay (s)		15.6	14.9		24.9		32.4	22.7		32.9	25.0	17.6
Level of Service		B	B		C		C	C		C	C	B
Approach Delay (s)		15.2			24.9			25.1			25.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	489	19	649	225	55	1138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1543	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1543	1863	1583	1770	1863
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	537	21	713	247	60	1251
RTOR Reduction (vph)	0	12	0	118	0	0
Lane Group Flow (vph)	537	9	713	129	60	1251
Confl. Peds. (#/hr)		3				
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	30.1	30.1	53.1	53.1	7.3	63.4
Effective Green, g (s)	30.1	30.1	53.1	53.1	7.3	63.4
Actuated g/C Ratio	0.30	0.30	0.52	0.52	0.07	0.62
Clearance Time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0	2.0	2.4	2.4	2.5	2.4
Lane Grp Cap (vph)	522	455	969	824	126	1157
v/s Ratio Prot	c0.30		0.38		0.03	c0.67
v/s Ratio Perm		0.01		0.08		
v/c Ratio	1.03	0.02	0.74	0.16	0.48	1.08
Uniform Delay, d1	36.0	25.5	19.0	12.8	45.5	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.9	0.0	2.7	0.1	2.1	51.3
Delay (s)	82.9	25.5	21.7	12.8	47.6	70.6
Level of Service	F	C	C	B	D	E
Approach Delay (s)	80.7		19.4			69.6
Approach LOS	F		B			E

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	102.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

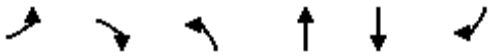
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	38	255	401	0	0	123
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	50	336	528	0	0	162
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked						
vC, conflicting volume	528				963	528
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	528				963	528
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	71
cM capacity (veh/h)	1039				270	551

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	386	528	162
Volume Left	50	0	0
Volume Right	0	0	162
cSH	1039	1700	551
Volume to Capacity	0.05	0.31	0.29
Queue Length 95th (ft)	4	0	30
Control Delay (s)	1.6	0.0	14.2
Lane LOS	A		B
Approach Delay (s)	1.6	0.0	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	3	9	934	1561	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	3	10	1038	1734	24
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2805	1748	1760			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2805	1748	1760			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	55	97	97			
cM capacity (veh/h)	20	107	355			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	12	10	1038	1759
Volume Left	9	10	0	0
Volume Right	3	0	0	24
cSH	25	355	1700	1700
Volume to Capacity	0.49	0.03	0.61	1.03
Queue Length 95th (ft)	37	2	0	0
Control Delay (s)	243.7	15.4	0.0	0.0
Lane LOS	F	C		
Approach Delay (s)	243.7	0.1		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	34	28	0	14	12	867	11	12	1587	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	3	0	37	31	0	15	13	953	12	13	1744	7
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2769	2765	1747	2793	2762	960	1751			965		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2769	2765	1747	2793	2762	960	1751			965		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	100	65	0	100	95	96			98		
cM capacity (veh/h)	11	18	107	7	18	311	358			714		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	41	46	13	965	13	1751
Volume Left	3	31	13	0	13	0
Volume Right	37	15	0	12	0	7
cSH	63	11	358	1700	714	1700
Volume to Capacity	0.64	4.19	0.04	0.57	0.02	1.03
Queue Length 95th (ft)	68	Err	3	0	1	0
Control Delay (s)	132.7	Err	15.4	0.0	10.1	0.0
Lane LOS	F	F	C		B	
Approach Delay (s)	132.7	Err	0.2		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	165.2			
Intersection Capacity Utilization	99.8%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	7	0	0	11	1	895	0	3	1645	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	0	8	0	0	12	1	984	0	3	1808	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2816	2804	1812	2808	2808	984	1815			984		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2816	2804	1812	2808	2808	984	1815			984		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	92	100	100	96	100			100		
cM capacity (veh/h)	11	18	98	11	18	302	338			702		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	8	12	1	984	3	1815
Volume Left	0	0	1	0	3	0
Volume Right	8	12	0	0	0	8
cSH	98	302	338	1700	702	1700
Volume to Capacity	0.08	0.04	0.00	0.58	0.00	1.07
Queue Length 95th (ft)	6	3	0	0	0	0
Control Delay (s)	45.0	17.4	15.7	0.0	10.2	0.0
Lane LOS	E	C	C		B	
Approach Delay (s)	45.0	17.4	0.0		0.0	
Approach LOS	E	C				

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	97.0%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	121	0	865	11	78	1360	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	21	0	129	0	920	12	83	1447	0
Pedestrians											9	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2671	2545	1447	2539	2539	935	1447			932		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2671	2545	1447	2539	2539	935	1447			932		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	100	60	100			89		
cM capacity (veh/h)	8	24	161	17	24	319	468			734		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	150	0	932	83	1447
Volume Left	0	21	0	0	83	0
Volume Right	0	129	0	12	0	0
cSH	1700	89	1700	1700	734	1700
Volume to Capacity	0.00	1.68	0.00	0.55	0.11	0.85
Queue Length 95th (ft)	0	305	0	0	10	0
Control Delay (s)	0.0	429.3	0.0	0.0	10.5	0.0
Lane LOS	A	F			B	
Approach Delay (s)	0.0	429.3	0.0		0.6	
Approach LOS	A	F				

Intersection Summary				
Average Delay	25.0			
Intersection Capacity Utilization	88.7%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	61	0	863	31	13	1344	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	0	0	63	0	890	32	13	1386	0
Pedestrians		1			4							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2366	2339	1387	2322	2323	910	1387			926		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2366	2339	1387	2322	2323	910	1387			926		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	81	100			98		
cM capacity (veh/h)	19	36	175	26	37	332	493			736		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	0	63	0	922	1399
Volume Left	0	0	0	0	13
Volume Right	0	63	0	32	0
cSH	1700	332	1700	1700	736
Volume to Capacity	0.00	0.19	0.00	0.54	0.02
Queue Length 95th (ft)	0	17	0	0	1
Control Delay (s)	0.0	18.4	0.0	0.0	1.1
Lane LOS	A	C			A
Approach Delay (s)	0.0	18.4	0.0		1.1
Approach LOS	A	C			

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	84.4%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	74	19	885	16	21	1325
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	76	20	912	16	22	1366
Pedestrians	4					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2334	926			933	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2334	926			933	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			97	
cM capacity (veh/h)	39	325			731	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	96	929	1388
Volume Left	76	0	22
Volume Right	20	16	0
cSH	48	1700	731
Volume to Capacity	2.01	0.55	0.03
Queue Length 95th (ft)	243	0	2
Control Delay (s)	653.3	0.0	1.7
Lane LOS	F		A
Approach Delay (s)	653.3	0.0	1.7
Approach LOS	F		

Intersection Summary			
Average Delay	26.9		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	21	909	0	17	1462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.96	0.96	0.98	0.98
Hourly flow rate (vph)	0	21	947	0	17	1492
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2473	947			947	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2473	947			947	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			98	
cM capacity (veh/h)	32	317			725	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	21	947	17	1492
Volume Left	0	0	17	0
Volume Right	21	0	0	0
cSH	317	1700	725	1700
Volume to Capacity	0.07	0.56	0.02	0.88
Queue Length 95th (ft)	5	0	2	0
Control Delay (s)	17.2	0.0	10.1	0.0
Lane LOS	C		B	
Approach Delay (s)	17.2	0.0	0.1	
Approach LOS	C			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	4	0	33	0	880	3	29	1444	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	4	0	34	0	898	3	30	1473	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2464	2434	1473	2432	2432	899	1473			901		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2464	2434	1473	2432	2432	899	1473			901		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	81	100	90	100			96		
cM capacity (veh/h)	18	31	156	21	31	337	457			754		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	38	0	901	30	1473
Volume Left	0	4	0	0	30	0
Volume Right	0	34	0	3	0	0
cSH	1700	129	1700	1700	754	1700
Volume to Capacity	0.00	0.29	0.00	0.53	0.04	0.87
Queue Length 95th (ft)	0	28	0	0	3	0
Control Delay (s)	0.0	44.0	0.0	0.0	10.0	0.0
Lane LOS	A	E			A	
Approach Delay (s)	0.0	44.0	0.0		0.2	
Approach LOS	A	E				

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	86.0%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	0	33	38	1	28	22	829	49	24	1408	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	7	0	34	39	1	29	22	846	50	24	1437	18
Pedestrians		1			2							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		4.0			4.0							
Percent Blockage		0			0							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2416	2439	1447	2437	2423	873	1456			898		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2416	2439	1447	2437	2423	873	1456			898		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	100	79	0	97	92	95			97		
cM capacity (veh/h)	19	29	161	16	30	349	464			755		

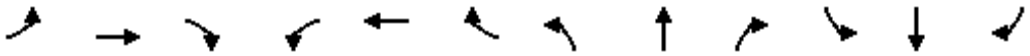
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	41	68	22	896	24	1455
Volume Left	7	39	22	0	24	0
Volume Right	34	29	0	50	0	18
cSH	69	27	464	1700	755	1700
Volume to Capacity	0.59	2.53	0.05	0.53	0.03	0.86
Queue Length 95th (ft)	63	207	4	0	3	0
Control Delay (s)	113.8	1004.6	13.2	0.0	9.9	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	113.8	1004.6	0.3		0.2	
Approach LOS	F	F				

Intersection Summary				
Average Delay	29.5			
Intersection Capacity Utilization	91.8%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	0	35	18	3	10	23	846	18	13	1491	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	10	0	38	19	3	10	24	872	19	13	1537	15
Pedestrians		3									1	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2507	2513	1548	2530	2511	882	1556			891		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2507	2513	1548	2530	2511	882	1556			891		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	40	100	73	0	88	97	94			98		
cM capacity (veh/h)	16	26	140	13	26	345	424			761		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	32	24	891	13	1553
Volume Left	10	19	24	0	13	0
Volume Right	38	10	0	19	0	15
cSH	54	20	424	1700	761	1700
Volume to Capacity	0.87	1.60	0.06	0.52	0.02	0.91
Queue Length 95th (ft)	95	107	4	0	1	0
Control Delay (s)	207.2	704.9	14.0	0.0	9.8	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	207.2	704.9	0.4		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	12.8			
Intersection Capacity Utilization	90.6%	ICU Level of Service	E	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	3	7	14	5	6	16	868	33	13	1496	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	14	3	7	14	5	6	16	886	34	13	1527	22
Pedestrians					4			4			1	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2492	2520	1542	2505	2515	908	1549			923		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2492	2520	1542	2505	2515	908	1549			923		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	10	88	95	10	81	98	96			98		
cM capacity (veh/h)	16	26	141	16	27	332	428			737		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	24	26	16	919	13	1549
Volume Left	14	14	16	0	13	0
Volume Right	7	6	0	34	0	22
cSH	23	23	428	1700	737	1700
Volume to Capacity	1.07	1.11	0.04	0.54	0.02	0.91
Queue Length 95th (ft)	78	81	3	0	1	0
Control Delay (s)	454.8	467.4	13.7	0.0	10.0	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	454.8	467.4	0.2		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	91.3%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	56	2	40	11	4	16	36	859	15	7	1399	52
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	61	2	43	12	4	17	39	934	16	8	1521	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2596	2592	1549	2601	2612	942	1577			950		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2596	2592	1549	2601	2612	942	1577			950		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	90	69	0	80	95	91			99		
cM capacity (veh/h)	12	22	140	10	22	319	417			723		

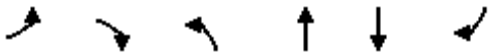
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	107	34	39	950	8	1577
Volume Left	61	12	39	0	8	0
Volume Right	43	17	0	16	0	57
cSH	20	23	417	1700	723	1700
Volume to Capacity	5.36	1.48	0.09	0.56	0.01	0.93
Queue Length 95th (ft)	Err	108	8	0	1	0
Control Delay (s)	Err	616.2	14.5	0.0	10.0	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	Err	616.2	0.6		0.0	
Approach LOS	F	F				

Intersection Summary				
Average Delay	400.3			
Intersection Capacity Utilization	92.7%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	21	871	18	0	1423
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	23	937	19	0	1530
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2476	946			956	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2476	946			956	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			100	
cM capacity (veh/h)	33	317			719	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	23	956	1530
Volume Left	0	0	0
Volume Right	23	19	0
cSH	317	1700	719
Volume to Capacity	0.07	0.56	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	17.2	0.0	0.0
Lane LOS	C		
Approach Delay (s)	17.2	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	24	16	686	909	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	30	26	17	730	967	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1366	967	967			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1366	967	967			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	90	98			
cM capacity (veh/h)	135	254	708			

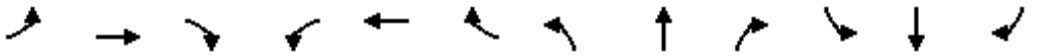
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	30	26	17	365	365	967	67
Volume Left	30	0	17	0	0	0	0
Volume Right	0	26	0	0	0	0	67
cSH	135	254	708	1700	1700	1700	1700
Volume to Capacity	0.22	0.10	0.02	0.21	0.21	0.57	0.04
Queue Length 95th (ft)	20	8	2	0	0	0	0
Control Delay (s)	39.1	20.7	10.2	0.0	0.0	0.0	0.0
Lane LOS	E	C	B				
Approach Delay (s)	30.6		0.2			0.0	
Approach LOS	D						

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	28	54	809	33	66	1335
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	30	58	870	35	71	1435
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2465	888			905	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2465	888			905	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	83			91	
cM capacity (veh/h)	30	343			751	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	30	58	905	71	1435
Volume Left	30	0	0	71	0
Volume Right	0	58	35	0	0
cSH	30	343	1700	751	1700
Volume to Capacity	1.00	0.17	0.53	0.09	0.84
Queue Length 95th (ft)	84	15	0	8	0
Control Delay (s)	354.1	17.6	0.0	10.3	0.0
Lane LOS	F	C		B	
Approach Delay (s)	132.5		0.0	0.5	
Approach LOS	F				

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		



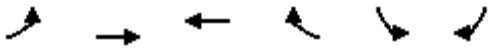
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	163	266	25	135	173	357	511	51	338	821	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1825	1583		1726		3433	3491		1770	3539	1583
Flt Permitted		0.56	1.00		0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1042	1583		1667		3433	3491		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	177	289	27	147	188	388	555	55	367	892	142
RTOR Reduction (vph)	0	0	134	0	39	0	0	8	0	0	0	90
Lane Group Flow (vph)	0	300	155	0	323	0	388	602	0	367	892	52
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								2
Actuated Green, G (s)		23.5	23.5		23.5		13.8	21.9		20.8	28.9	28.9
Effective Green, g (s)		23.5	23.5		23.5		13.8	21.9		20.8	28.9	28.9
Actuated g/C Ratio		0.30	0.30		0.30		0.17	0.28		0.26	0.36	0.36
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		309	469		494		598	965		464	1291	577
v/s Ratio Prot							0.11	0.17		c0.21	c0.25	
v/s Ratio Perm		c0.29	0.10		0.19							0.03
v/c Ratio		0.97	0.33		0.65		0.65	0.62		0.79	0.69	0.09
Uniform Delay, d1		27.5	21.7		24.3		30.4	25.0		27.2	21.4	16.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		42.9	0.2		2.4		1.8	1.4		8.4	1.7	0.1
Delay (s)		70.5	21.9		26.7		32.3	26.5		35.5	23.1	16.6
Level of Service		E	C		C		C	C		D	C	B
Approach Delay (s)		46.6			26.7			28.7			25.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	389	26	945	266	21	1300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1484	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1484	1863	1583	1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	418	28	1016	286	23	1398
RTOR Reduction (vph)	0	20	0	119	0	0
Lane Group Flow (vph)	418	8	1016	167	23	1398
Confl. Peds. (#/hr)		23				
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	28.4	28.4	60.3	60.3	2.9	66.2
Effective Green, g (s)	28.4	28.4	60.3	60.3	2.9	66.2
Actuated g/C Ratio	0.28	0.28	0.58	0.58	0.03	0.64
Clearance Time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0	2.0	2.4	2.4	2.5	2.4
Lane Grp Cap (vph)	487	408	1089	925	49	1196
v/s Ratio Prot	c0.24		0.55		0.01	c0.75
v/s Ratio Perm		0.01		0.11		
v/c Ratio	0.86	0.02	0.93	0.18	0.47	1.17
Uniform Delay, d1	35.4	27.2	19.6	9.9	49.3	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	0.0	13.9	0.1	5.1	85.3
Delay (s)	48.9	27.2	33.5	10.0	54.4	103.7
Level of Service	D	C	C	A	D	F
Approach Delay (s)	47.6		28.3			102.9
Approach LOS	D		C			F

Intersection Summary			
HCM 2000 Control Delay	64.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	11.5
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

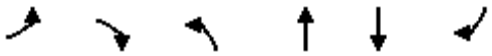
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	133	216	360	0	0	211
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	139	225	375	0	0	220
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked						
vC, conflicting volume	386				888	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	386				888	386
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	88				100	66
cM capacity (veh/h)	1162				274	656

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	364	375	220
Volume Left	139	0	0
Volume Right	0	0	220
cSH	1162	1700	656
Volume to Capacity	0.12	0.22	0.34
Queue Length 95th (ft)	10	0	37
Control Delay (s)	4.0	0.0	13.2
Lane LOS	A		B
Approach Delay (s)	4.0	0.0	13.2
Approach LOS			B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	22	27	1205	1665	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	15	24	30	1324	1830	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3227	1843	1857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3227	1843	1857			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	74	91			
cM capacity (veh/h)	10	93	325			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	40	30	1324	1857
Volume Left	15	30	0	0
Volume Right	24	0	0	27
cSH	21	325	1700	1700
Volume to Capacity	1.84	0.09	0.78	1.09
Queue Length 95th (ft)	129	7	0	0
Control Delay (s)	781.6	17.2	0.0	0.0
Lane LOS	F	C		
Approach Delay (s)	781.6	0.4		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	0	44	25	0	37	34	1191	23	30	1644	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	7	0	46	26	0	39	35	1241	24	31	1712	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3133	3119	1721	3144	3115	1253	1729			1265		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3133	3119	1721	3144	3115	1253	1729			1265		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	59	0	100	82	90			94		
cM capacity (veh/h)	5	10	111	3	10	210	365			550		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	53	65	35	1265	31	1729
Volume Left	7	26	35	0	31	0
Volume Right	46	39	0	24	0	17
cSH	28	8	365	1700	550	1700
Volume to Capacity	1.92	7.82	0.10	0.74	0.06	1.02
Queue Length 95th (ft)	158	Err	8	0	5	0
Control Delay (s)	736.4	Err	15.9	0.0	11.9	0.0
Lane LOS	F	F	C		B	
Approach Delay (s)	736.4	Err	0.4		0.2	
Approach LOS	F	F				

Intersection Summary				
Average Delay	215.8			
Intersection Capacity Utilization	102.5%	ICU Level of Service	G	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1	16	1	0	6	4	1268	12	9	1667	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	1	17	1	0	6	4	1335	13	9	1755	11
Pedestrians					1						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3129	3136	1760	3142	3135	1343	1765			1348		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3129	3136	1760	3142	3135	1343	1765			1348		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	90	84	79	100	97	99			98		
cM capacity (veh/h)	6	11	105	5	11	185	353			510		

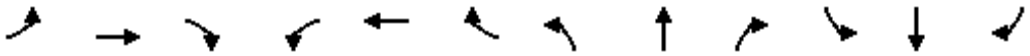
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	20	7	4	1347	9	1765
Volume Left	2	1	4	0	9	0
Volume Right	17	6	0	13	0	11
cSH	34	30	353	1700	510	1700
Volume to Capacity	0.59	0.24	0.01	0.79	0.02	1.04
Queue Length 95th (ft)	50	19	1	0	1	0
Control Delay (s)	210.9	159.7	15.3	0.0	12.2	0.0
Lane LOS	F	F	C		B	
Approach Delay (s)	210.9	159.7	0.0		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	98.7%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	14	0	96	0	768	9	154	1149	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	14	0	98	0	784	9	157	1172	0
Pedestrians											4	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2372	2280	1172	2275	2275	792	1172			793		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2372	2280	1172	2275	2275	792	1172			793		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	41	100	75	100			81		
cM capacity (veh/h)	15	32	234	24	32	388	596			828		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	112	0	793	157	1172
Volume Left	0	14	0	0	157	0
Volume Right	0	98	0	9	0	0
cSH	1700	133	1700	1700	828	1700
Volume to Capacity	0.00	0.84	0.00	0.47	0.19	0.69
Queue Length 95th (ft)	0	133	0	0	17	0
Control Delay (s)	0.0	103.8	0.0	0.0	10.4	0.0
Lane LOS	A	F			B	
Approach Delay (s)	0.0	103.8	0.0		1.2	
Approach LOS	A	F				

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	81.7%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	60	0	707	41	0	1186	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	0	0	64	0	752	44	0	1262	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2078	2057	1262	2036	2036	774	1262			796		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2078	2057	1262	2036	2036	774	1262			796		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	84	100			100		
cM capacity (veh/h)	33	55	207	42	57	398	551			826		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total	0	64	0	796	1262
Volume Left	0	0	0	0	0
Volume Right	0	64	0	44	0
cSH	1700	398	1700	1700	1700
Volume to Capacity	0.00	0.16	0.00	0.47	0.74
Queue Length 95th (ft)	0	14	0	0	0
Control Delay (s)	0.0	15.7	0.0	0.0	0.0
Lane LOS	A	C			
Approach Delay (s)	0.0	15.7	0.0		0.0
Approach LOS	A	C			

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	65.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	104	16	737	16	17	1165
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	109	17	776	17	18	1226
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2046	784			793	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2046	784			793	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	96			98	
cM capacity (veh/h)	60	393			828	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	126	793	1244
Volume Left	109	0	18
Volume Right	17	17	0
cSH	68	1700	828
Volume to Capacity	1.86	0.47	0.02
Queue Length 95th (ft)	286	0	2
Control Delay (s)	537.8	0.0	0.9
Lane LOS	F		A
Approach Delay (s)	537.8	0.0	0.9
Approach LOS	F		

Intersection Summary			
Average Delay	31.9		
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	17	862	0	22	1265
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	18	898	0	23	1318
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2261	898			898	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2261	898			898	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			97	
cM capacity (veh/h)	44	338			756	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	18	898	23	1318
Volume Left	0	0	23	0
Volume Right	18	0	0	0
cSH	338	1700	756	1700
Volume to Capacity	0.05	0.53	0.03	0.78
Queue Length 95th (ft)	4	0	2	0
Control Delay (s)	16.2	0.0	9.9	0.0
Lane LOS	C		A	
Approach Delay (s)	16.2	0.0	0.2	
Approach LOS	C			

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	7	0	21	0	833	4	50	1239	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	7	0	22	0	877	4	53	1304	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2308	2291	1304	2288	2288	879	1304			881		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2308	2291	1304	2288	2288	879	1304			881		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	72	100	94	100			93		
cM capacity (veh/h)	24	37	196	26	37	347	531			767		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	0	29	0	881	53	1304
Volume Left	0	7	0	0	53	0
Volume Right	0	22	0	4	0	0
cSH	1700	86	1700	1700	767	1700
Volume to Capacity	0.00	0.34	0.00	0.52	0.07	0.77
Queue Length 95th (ft)	0	33	0	0	6	0
Control Delay (s)	0.0	67.7	0.0	0.0	10.0	0.0
Lane LOS	A	F			B	
Approach Delay (s)	0.0	67.7	0.0		0.4	
Approach LOS	A	F				

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	75.2%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	0	22	52	2	21	20	809	55	20	1189	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	5	0	23	55	2	22	21	852	58	21	1252	12
Pedestrians					4						7	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2223	2255	1257	2243	2232	892	1263			913		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2223	2255	1257	2243	2232	892	1263			913		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	89	0	95	93	96			97		
cM capacity (veh/h)	26	38	209	25	40	338	550			744		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	79	21	909	21	1263
Volume Left	5	55	21	0	21	0
Volume Right	23	22	0	58	0	12
cSH	91	34	550	1700	744	1700
Volume to Capacity	0.31	2.30	0.04	0.53	0.03	0.74
Queue Length 95th (ft)	30	223	3	0	2	0
Control Delay (s)	61.6	843.2	11.8	0.0	10.0	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	61.6	843.2	0.3		0.2	
Approach LOS	F	F				

Intersection Summary				
Average Delay	29.6			
Intersection Capacity Utilization	81.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	2	20	22	1	11	25	856	27	11	1219	17
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	11	2	22	24	1	12	27	920	29	12	1311	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2330	2347	1320	2346	2341	935	1329			949		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2330	2347	1320	2346	2341	935	1329			949		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	94	89	0	97	96	95			98		
cM capacity (veh/h)	23	34	192	20	34	322	519			723		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	37	27	949	12	1329
Volume Left	11	24	27	0	12	0
Volume Right	22	12	0	29	0	18
cSH	54	30	519	1700	723	1700
Volume to Capacity	0.64	1.24	0.05	0.56	0.02	0.78
Queue Length 95th (ft)	65	104	4	0	1	0
Control Delay (s)	152.5	446.9	12.3	0.0	10.1	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	152.5	446.9	0.3		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	75.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	2	20	27	2	6	16	891	35	9	1236	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	2	21	28	2	6	17	938	37	9	1301	16
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		4.0										
Percent Blockage		0										
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2308	2337	1310	2332	2327	956	1318			975		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2308	2337	1310	2332	2327	956	1318			975		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	94	89	0	94	98	97			99		
cM capacity (veh/h)	24	35	194	21	35	313	524			708		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	37	17	975	9	1317
Volume Left	11	28	17	0	9	0
Volume Right	21	6	0	37	0	16
cSH	56	26	524	1700	708	1700
Volume to Capacity	0.60	1.42	0.03	0.57	0.01	0.77
Queue Length 95th (ft)	61	112	2	0	1	0
Control Delay (s)	139.8	551.6	12.1	0.0	10.2	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	139.8	551.6	0.2		0.1	
Approach LOS	F	F				

Intersection Summary				
Average Delay	10.6			
Intersection Capacity Utilization	76.9%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	2	3	67	5	28	7	844	71	42	1226	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	2	3	73	5	30	8	917	77	46	1333	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2397	2441	1340	2399	2409	956	1347			995		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2397	2441	1340	2399	2409	956	1347			995		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	92	98	0	82	90	99			93		
cM capacity (veh/h)	17	29	187	20	30	313	511			696		

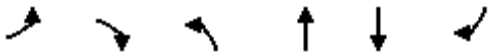
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	40	109	8	995	46	1347
Volume Left	35	73	8	0	46	0
Volume Right	3	30	0	77	0	14
cSH	19	28	511	1700	696	1700
Volume to Capacity	2.14	3.90	0.01	0.59	0.07	0.79
Queue Length 95th (ft)	136	Err	1	0	5	0
Control Delay (s)	954.9	Err	12.1	0.0	10.5	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	954.9	Err	0.1		0.3	
Approach LOS	F	F				

Intersection Summary				
Average Delay	442.6			
Intersection Capacity Utilization	77.6%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	22	0	836	27	0	1176
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	24	0	899	29	0	1265
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2178	913			928	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2178	913			928	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	53	100			100	
cM capacity (veh/h)	51	331			737	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	24	928	1265
Volume Left	24	0	0
Volume Right	0	29	0
cSH	51	1700	737
Volume to Capacity	0.47	0.55	0.00
Queue Length 95th (ft)	43	0	0
Control Delay (s)	126.6	0.0	0.0
Lane LOS	F		
Approach Delay (s)	126.6	0.0	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	15	12	663	676	48
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	29	16	13	713	727	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1109	727	727			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1109	727	727			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	96	99			
cM capacity (veh/h)	201	366	872			

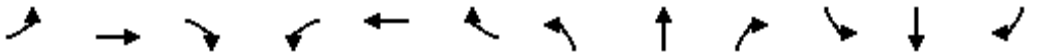
Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	29	16	13	356	356	727	52
Volume Left	29	0	13	0	0	0	0
Volume Right	0	16	0	0	0	0	52
cSH	201	366	872	1700	1700	1700	1700
Volume to Capacity	0.14	0.04	0.01	0.21	0.21	0.43	0.03
Queue Length 95th (ft)	12	3	1	0	0	0	0
Control Delay (s)	26.0	15.3	9.2	0.0	0.0	0.0	0.0
Lane LOS	D	C	A				
Approach Delay (s)	22.1		0.2			0.0	
Approach LOS	C						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	29	37	770	59	76	1078
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	32	41	846	65	84	1185
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2230	879			911	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2230	879			911	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	24	88			89	
cM capacity (veh/h)	42	347			748	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	32	41	911	84	1185
Volume Left	32	0	0	84	0
Volume Right	0	41	65	0	0
cSH	42	347	1700	748	1700
Volume to Capacity	0.76	0.12	0.54	0.11	0.70
Queue Length 95th (ft)	72	10	0	9	0
Control Delay (s)	217.2	16.8	0.0	10.4	0.0
Lane LOS	F	C		B	
Approach Delay (s)	104.8		0.0	0.7	
Approach LOS	F				

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		



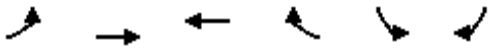
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	107	145	75	118	234	196	548	31	244	989	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Lane Util. Factor		1.00	1.00		1.00		0.97	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1820	1583		1710		3433	3511		1770	3539	1583
Flt Permitted		0.57	1.00		0.90		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1069	1583		1558		3433	3511		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	116	158	82	128	254	213	596	34	265	1075	105
RTOR Reduction (vph)	0	0	93	0	41	0	0	4	0	0	0	65
Lane Group Flow (vph)	0	220	65	0	423	0	213	626	0	265	1075	40
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4								2
Actuated Green, G (s)		29.3	29.3		29.3		9.7	25.5		16.5	32.3	32.3
Effective Green, g (s)		29.3	29.3		29.3		9.7	25.5		16.5	32.3	32.3
Actuated g/C Ratio		0.35	0.35		0.35		0.12	0.30		0.20	0.38	0.38
Clearance Time (s)		3.5	3.5		3.5		3.0	6.5		3.0	6.5	6.5
Vehicle Extension (s)		2.0	2.0		2.0		2.0	4.0		2.0	4.0	4.0
Lane Grp Cap (vph)		371	550		541		395	1062		346	1355	606
v/s Ratio Prot							0.06	0.18		c0.15	c0.30	
v/s Ratio Perm		0.21	0.04		c0.27							0.03
v/c Ratio		0.59	0.12		0.78		0.54	0.59		0.77	0.79	0.07
Uniform Delay, d1		22.6	18.7		24.6		35.2	25.0		32.1	23.0	16.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.7	0.0		6.7		0.7	1.0		8.8	3.5	0.1
Delay (s)		24.3	18.8		31.3		35.9	26.0		40.9	26.5	16.5
Level of Service		C	B		C		D	C		D	C	B
Approach Delay (s)		22.0			31.3			28.5			28.4	
Approach LOS		C			C			C			C	

Intersection Summary					
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.81				
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	13.0		
Intersection Capacity Utilization	76.4%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	285	22	1020	420	46	1161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1486	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1486	1863	1583	1770	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	306	24	1097	452	49	1248
RTOR Reduction (vph)	0	19	0	177	0	0
Lane Group Flow (vph)	306	5	1097	275	49	1248
Confl. Peds. (#/hr)		23				
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	4		6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	21.2	21.2	60.7	60.7	6.5	70.2
Effective Green, g (s)	21.2	21.2	60.7	60.7	6.5	70.2
Actuated g/C Ratio	0.21	0.21	0.61	0.61	0.07	0.70
Clearance Time (s)	3.0	3.0	5.5	5.5	3.0	5.5
Vehicle Extension (s)	2.0	2.0	2.4	2.4	2.5	2.4
Lane Grp Cap (vph)	375	315	1131	961	115	1309
v/s Ratio Prot	c0.17		0.59		0.03	c0.67
v/s Ratio Perm		0.00		0.17		
v/c Ratio	0.82	0.02	0.97	0.29	0.43	0.95
Uniform Delay, d1	37.5	31.1	18.7	9.3	44.9	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.2	0.0	19.6	0.1	1.8	15.0
Delay (s)	49.7	31.1	38.3	9.4	46.8	28.4
Level of Service	D	C	D	A	D	C
Approach Delay (s)	48.3		29.9			29.1
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	11.5
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

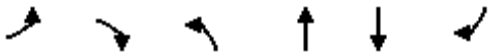
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	133	349	213	0	0	110
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	149	392	239	0	0	124
Pedestrians			1		5	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		151				
pX, platoon unblocked						
vC, conflicting volume	244				936	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	244				936	244
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	89				100	84
cM capacity (veh/h)	1316				259	791

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	542	239	124
Volume Left	149	0	0
Volume Right	0	0	124
cSH	1316	1700	791
Volume to Capacity	0.11	0.14	0.16
Queue Length 95th (ft)	10	0	14
Control Delay (s)	3.1	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	3.1	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	14	15	22	1430	1422	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	15	16	23	1505	1497	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3066	1514	1532			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3066	1514	1532			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	89	95			
cM capacity (veh/h)	13	147	435			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	31	23	1505	1532
Volume Left	15	23	0	0
Volume Right	16	0	0	35
cSH	24	435	1700	1700
Volume to Capacity	1.25	0.05	0.89	0.90
Queue Length 95th (ft)	95	4	0	0
Control Delay (s)	501.9	13.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	501.9	0.2		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	0	30	11	0	29	22	1405	35	21	1402	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	3	0	31	11	0	30	23	1464	36	22	1460	11
Pedestrians		1									2	
Lane Width (ft)		12.0									12.0	
Walking Speed (ft/s)		4.0									4.0	
Percent Blockage		0									0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3052	3057	1467	3063	3044	1484	1473			1500		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3052	3057	1467	3063	3044	1484	1473			1500		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	45	100	80	0	100	80	95			95		
cM capacity (veh/h)	6	11	157	6	11	153	457			447		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	34	42	23	1500	22	1472
Volume Left	3	11	23	0	22	0
Volume Right	31	30	0	36	0	11
cSH	46	19	457	1700	447	1700
Volume to Capacity	0.75	2.25	0.05	0.88	0.05	0.87
Queue Length 95th (ft)	74	141	4	0	4	0
Control Delay (s)	198.9	1004.4	13.3	0.0	13.5	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	198.9	1004.4	0.2		0.2	
Approach LOS	F	F				

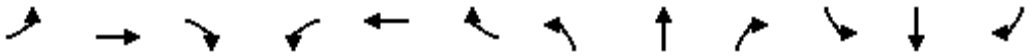
Intersection Summary				
Average Delay	15.9			
Intersection Capacity Utilization	88.6%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	0	2	0	0	6	0	1510	2	6	1429	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	2	0	0	7	0	1641	2	7	1553	4
Pedestrians					1						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3217	3213	1555	3212	3214	1644	1558			1644		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3217	3213	1555	3212	3214	1644	1558			1644		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	60	100	98	100	100	95	100			98		
cM capacity (veh/h)	5	10	139	6	10	123	425			393		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	7	0	1643	7	1558
Volume Left	2	0	0	0	7	0
Volume Right	2	7	0	2	0	4
cSH	10	123	1700	1700	393	1700
Volume to Capacity	0.42	0.05	0.00	0.97	0.02	0.92
Queue Length 95th (ft)	24	4	0	0	1	0
Control Delay (s)	506.0	36.0	0.0	0.0	14.3	0.0
Lane LOS	F	E			B	
Approach Delay (s)	506.0	36.0	0.0		0.1	
Approach LOS	F	E				

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	89.9%	ICU Level of Service	E	
Analysis Period (min)	15			

SR-92 Existing Conditions Report



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1234	1	2	464	22	2	0	1	12	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	1299	1	2	488	23	2	0	1	13	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	512			1300			1817	1836	1299	1814	1814	488
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	512			1300			1817	1836	1299	1814	1814	488
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	100	99	79	100	99
cM capacity (veh/h)	1054			533			59	75	197	60	77	579

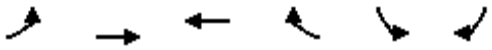
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	1300	491	23	3	17
Volume Left	11	0	2	0	2	13
Volume Right	0	1	0	23	1	4
cSH	1054	1700	533	1700	77	77
Volume to Capacity	0.01	0.76	0.00	0.01	0.04	0.22
Queue Length 95th (ft)	1	0	0	0	3	19
Control Delay (s)	8.5	0.0	0.1	0.0	53.7	64.7
Lane LOS	A		A		F	F
Approach Delay (s)	0.1		0.1		53.7	64.7
Approach LOS					F	F

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	81.7%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1184	27	58	443	17	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1208	28	59	452	17	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1208		1779	1208
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1208		1779	1208
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		79	82
cM capacity (veh/h)			577		81	223

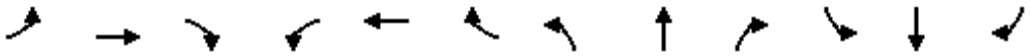
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1208	28	59	452	58
Volume Left	0	0	59	0	17
Volume Right	0	28	0	0	41
cSH	1700	1700	577	1700	272
Volume to Capacity	0.71	0.02	0.10	0.27	0.21
Queue Length 95th (ft)	0	0	9	0	20
Control Delay (s)	0.0	0.0	11.9	0.0	35.5
Lane LOS			B		E
Approach Delay (s)	0.0		1.4		35.5
Approach LOS					E

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	225	1067	436	16	45	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	1160	474	17	49	124
RTOR Reduction (vph)	0	0	0	10	0	76
Lane Group Flow (vph)	245	1160	474	7	49	48
Turn Type	Prot	NA	NA	Perm	NA	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	15.5	41.3	21.8	21.8	5.9	21.4
Effective Green, g (s)	15.5	41.3	21.8	21.8	5.9	21.4
Actuated g/C Ratio	0.28	0.75	0.39	0.39	0.11	0.39
Clearance Time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	497	1393	735	625	189	714
v/s Ratio Prot	0.14	c0.62	0.25		c0.03	0.01
v/s Ratio Perm				0.00		0.02
v/c Ratio	0.49	0.83	0.64	0.01	0.26	0.07
Uniform Delay, d1	16.6	4.6	13.6	10.1	22.6	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	4.2	1.5	0.0	0.3	0.0
Delay (s)	16.9	8.9	15.0	10.2	22.9	10.6
Level of Service	B	A	B	B	C	B
Approach Delay (s)		10.3	14.9		14.1	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	55.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	837	4	1	1047	5	0	0	2	2	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	910	4	1	1138	5	0	0	2	2	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1143			914			2074	2066	912	2061	2063	1138
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1143			914			2074	2066	912	2061	2063	1138
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	99	95	100	95
cM capacity (veh/h)	611			746			37	54	332	40	54	245

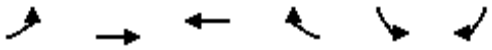
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	914	1139	5	2	15
Volume Left	4	0	1	0	0	2
Volume Right	0	4	0	5	2	13
cSH	611	1700	746	1700	332	141
Volume to Capacity	0.01	0.54	0.00	0.00	0.01	0.11
Queue Length 95th (ft)	1	0	0	0	0	9
Control Delay (s)	10.9	0.0	0.1	0.0	15.9	33.5
Lane LOS	B		A		C	D
Approach Delay (s)	0.1		0.1		15.9	33.5
Approach LOS					C	D

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	65.9%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	723	25	158	1186	53	185
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	786	27	172	1289	58	201
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			786		2418	786
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			786		2418	786
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			79		0	49
cM capacity (veh/h)			833		28	392

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	786	27	172	1289	259
Volume Left	0	0	172	0	58
Volume Right	0	27	0	0	201
cSH	1700	1700	833	1700	118
Volume to Capacity	0.46	0.02	0.21	0.76	2.20
Queue Length 95th (ft)	0	0	19	0	551
Control Delay (s)	0.0	0.0	10.4	0.0	626.9
Lane LOS			B		F
Approach Delay (s)	0.0		1.2		626.9
Approach LOS					F

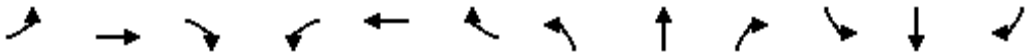
Intersection Summary			
Average Delay	64.7		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	99	833	1112	27	26	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1551	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	905	1209	29	28	282
RTOR Reduction (vph)	0	0	0	12	0	25
Lane Group Flow (vph)	108	905	1209	17	28	257
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	NA	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	10.1	72.4	58.3	58.3	16.8	26.9
Effective Green, g (s)	10.1	72.4	58.3	58.3	16.8	26.9
Actuated g/C Ratio	0.10	0.74	0.60	0.60	0.17	0.28
Clearance Time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	183	1387	1117	930	305	495
v/s Ratio Prot	0.06	c0.49	c0.65		0.02	c0.09
v/s Ratio Perm				0.01		0.07
v/c Ratio	0.59	0.65	1.08	0.02	0.09	0.52
Uniform Delay, d1	41.6	6.2	19.5	7.9	33.8	29.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	0.8	52.1	0.0	0.0	0.5
Delay (s)	44.9	7.0	71.6	7.9	33.8	30.2
Level of Service	D	A	E	A	C	C
Approach Delay (s)		11.0	70.1		30.5	
Approach LOS		B	E		C	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	97.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	770	4	3	1210	3	0	0	2	12	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	811	4	3	1274	3	0	0	2	13	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1277			815			2108	2098	813	2095	2097	1274
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1277			815			2108	2098	813	2095	2097	1274
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	67	100	93
cM capacity (veh/h)	544			813			35	52	379	38	52	204

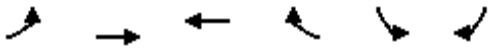
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1	815	1277	3	2	26
Volume Left	1	0	3	0	0	13
Volume Right	0	4	0	3	2	14
cSH	544	1700	813	1700	379	66
Volume to Capacity	0.00	0.48	0.00	0.00	0.01	0.40
Queue Length 95th (ft)	0	0	0	0	0	38
Control Delay (s)	11.6	0.0	0.2	0.0	14.6	92.6
Lane LOS	B		A		B	F
Approach Delay (s)	0.0		0.2		14.6	92.6
Approach LOS					B	F

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	770	19	97	1191	24	97
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	856	21	108	1323	27	108
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			856		2394	856
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			856		2394	856
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		17	70
cM capacity (veh/h)			784		32	358

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	856	21	108	1323	134
Volume Left	0	0	108	0	27
Volume Right	0	21	0	0	108
cSH	1700	1700	784	1700	161
Volume to Capacity	0.50	0.01	0.14	0.78	0.83
Queue Length 95th (ft)	0	0	12	0	141
Control Delay (s)	0.0	0.0	10.3	0.0	72.9
Lane LOS			B		F
Approach Delay (s)	0.0		0.8		72.9
Approach LOS					F

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

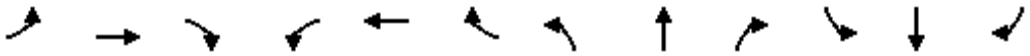


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	115	744	1046	24	30	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1551	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	120	775	1090	25	31	223
RTOR Reduction (vph)	0	0	0	9	0	37
Lane Group Flow (vph)	120	775	1090	16	31	186
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	NA	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	10.6	72.9	58.3	58.3	12.9	23.5
Effective Green, g (s)	10.6	72.9	58.3	58.3	12.9	23.5
Actuated g/C Ratio	0.11	0.78	0.62	0.62	0.14	0.25
Clearance Time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	200	1447	1157	964	243	455
v/s Ratio Prot	c0.07	0.42	c0.59		0.02	c0.06
v/s Ratio Perm				0.01		0.06
v/c Ratio	0.60	0.54	0.94	0.02	0.13	0.41
Uniform Delay, d1	39.6	4.0	16.2	6.8	35.5	29.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	0.2	14.5	0.0	0.1	0.2
Delay (s)	42.8	4.2	30.7	6.8	35.6	29.6
Level of Service	D	A	C	A	D	C
Approach Delay (s)		9.4	30.2		30.3	
Approach LOS		A	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	93.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SR-92 Buildout Conditions Report



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1315	0	0	3	774	1	0	2	14	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	2	1384	0	0	3	815	1	0	2	15	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	818			1384			1393	2206	1384	1394	1392	3
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818			1384			1393	2206	1384	1394	1392	3
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	87	100	100
cM capacity (veh/h)	810			495			119	44	176	117	142	1081

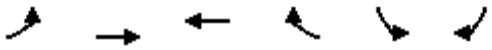
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	2	1384	3	815	3	16
Volume Left	2	0	0	0	1	15
Volume Right	0	0	0	815	2	1
cSH	810	1700	495	1700	152	125
Volume to Capacity	0.00	0.81	0.00	0.48	0.02	0.13
Queue Length 95th (ft)	0	0	0	0	2	11
Control Delay (s)	9.5	0.0	0.0	0.0	29.3	38.0
Lane LOS	A				D	E
Approach Delay (s)	0.0		0.0		29.3	38.0
Approach LOS					D	E

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	130.5%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1205	0	120	340	116	304
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	1230	0	122	347	118	310
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1230		1821	1230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1230		1821	1230
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		0	0
cM capacity (veh/h)			567		67	217

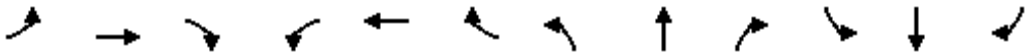
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1230	0	122	347	429
Volume Left	0	0	122	0	118
Volume Right	0	0	0	0	310
cSH	1700	1700	567	1700	182
Volume to Capacity	0.72	0.00	0.22	0.20	2.36
Queue Length 95th (ft)	0	0	20	0	885
Control Delay (s)	0.0	0.0	13.1	0.0	669.3
Lane LOS			B		F
Approach Delay (s)	0.0		3.4		669.3
Approach LOS					F

Intersection Summary			
Average Delay	135.6		
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	448	1081	0	1028	41	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5		5.0	3.5	3.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		0.85	1.00	0.85
Flt Protected	0.95	1.00		1.00	0.95	1.00
Satd. Flow (prot)	1770	1863		1583	1770	1583
Flt Permitted	0.95	1.00		1.00	0.95	1.00
Satd. Flow (perm)	1770	1863		1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	487	1175	0	1117	45	121
RTOR Reduction (vph)	0	0	0	239	0	78
Lane Group Flow (vph)	487	1175	0	878	45	43
Turn Type	Prot	NA		Perm	Prot	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	30.0	92.0		58.0	7.9	37.9
Effective Green, g (s)	30.0	92.0		58.0	7.9	37.9
Actuated g/C Ratio	0.28	0.85		0.54	0.07	0.35
Clearance Time (s)	3.5	4.5		5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	492	1588		850	129	607
v/s Ratio Prot	c0.28	0.63			c0.03	0.01
v/s Ratio Perm				c0.55		0.02
v/c Ratio	0.99	0.74		1.03	0.35	0.07
Uniform Delay, d1	38.8	3.2		25.0	47.6	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	37.4	1.6		39.8	0.6	0.0
Delay (s)	76.2	4.8		64.7	48.2	23.3
Level of Service	E	A		E	D	C
Approach Delay (s)		25.7	64.7		30.0	
Approach LOS		C	E		C	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	107.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	926	4	1	1350	5	0	0	2	2	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1007	4	1	1467	5	0	0	2	2	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1473			1011			2500	2492	1009	2487	2489	1467
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1473			1011			2500	2492	1009	2487	2489	1467
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	99	89	100	92
cM capacity (veh/h)	458			686			18	29	292	20	29	157

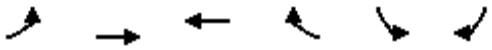
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	4	1011	1468	5	2	15
Volume Left	4	0	1	0	0	2
Volume Right	0	4	0	5	2	13
cSH	458	1700	686	1700	292	78
Volume to Capacity	0.01	0.59	0.00	0.00	0.01	0.19
Queue Length 95th (ft)	1	0	0	0	1	17
Control Delay (s)	12.9	0.0	0.1	0.0	17.4	61.6
Lane LOS	B		A		C	F
Approach Delay (s)	0.1		0.1		17.4	61.6
Approach LOS					C	F

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	81.8%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	765	70	482	1463	134	461
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	832	76	524	1590	146	501
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			832		3470	832
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			832		3470	832
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			35		0	0
cM capacity (veh/h)			801		3	369

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	832	76	524	1590	647
Volume Left	0	0	524	0	146
Volume Right	0	76	0	0	501
cSH	1700	1700	801	1700	11
Volume to Capacity	0.49	0.04	0.65	0.94	58.41
Queue Length 95th (ft)	0	0	124	0	Err
Control Delay (s)	0.0	0.0	17.6	0.0	Err
Lane LOS			C		F
Approach Delay (s)	0.0		4.4		Err
Approach LOS					F

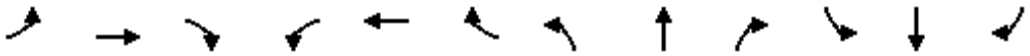
Intersection Summary			
Average Delay	1765.3		
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	312	865	1688	91	19	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1551	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	339	940	1835	99	21	279
RTOR Reduction (vph)	0	0	0	10	0	3
Lane Group Flow (vph)	339	940	1835	89	21	276
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	24.8	87.2	58.4	58.4	17.8	42.6
Effective Green, g (s)	24.8	87.2	58.4	58.4	17.8	42.6
Actuated g/C Ratio	0.22	0.77	0.52	0.52	0.16	0.38
Clearance Time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	388	1437	962	801	278	645
v/s Ratio Prot	c0.19	0.50	c0.99		0.01	c0.07
v/s Ratio Perm				0.06		0.11
v/c Ratio	0.87	0.65	1.91	0.11	0.08	0.43
Uniform Delay, d1	42.6	5.9	27.3	14.0	40.6	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.5	0.8	412.3	0.0	0.0	0.2
Delay (s)	61.1	6.8	439.6	14.0	40.6	26.3
Level of Service	E	A	F	B	D	C
Approach Delay (s)		21.2	417.8		27.3	
Approach LOS		C	F		C	

Intersection Summary			
HCM 2000 Control Delay	240.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	861	4	3	1511	3	0	0	2	11	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1	906	4	3	1591	3	0	0	2	12	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1594			911			2521	2511	908	2507	2509	1591
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1594			911			2521	2511	908	2507	2509	1591
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	39	100	90
cM capacity (veh/h)	411			748			17	28	333	19	28	132

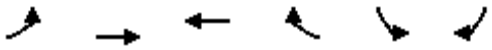
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1	911	1594	3	2	25
Volume Left	1	0	3	0	0	12
Volume Right	0	4	0	3	2	14
cSH	411	1700	748	1700	333	36
Volume to Capacity	0.00	0.54	0.00	0.00	0.01	0.71
Queue Length 95th (ft)	0	0	0	0	0	63
Control Delay (s)	13.8	0.0	0.7	0.0	15.9	232.9
Lane LOS	B		A		C	F
Approach Delay (s)	0.0		0.7		15.9	232.9
Approach LOS					C	F

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	96.6%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	802	74	411	1476	97	383
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	891	82	457	1640	108	426
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						8
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			891		3444	891
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			891		3444	891
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			40		0	0
cM capacity (veh/h)			761		3	341

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	891	82	457	1640	533
Volume Left	0	0	457	0	108
Volume Right	0	82	0	0	426
cSH	1700	1700	761	1700	15
Volume to Capacity	0.52	0.05	0.60	0.96	36.38
Queue Length 95th (ft)	0	0	102	0	Err
Control Delay (s)	0.0	0.0	16.6	0.0	Err
Lane LOS			C		F
Approach Delay (s)	0.0		3.6		Err
Approach LOS					F

Intersection Summary			
Average Delay	1482.1		
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	338	772	1627	77	22	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	1863	1551	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	352	804	1695	80	23	222
RTOR Reduction (vph)	0	0	0	8	0	5
Lane Group Flow (vph)	352	804	1695	72	23	217
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA	Perm	Prot	custom
Protected Phases	1	6	2		8	8
Permitted Phases				2		1
Actuated Green, G (s)	25.2	87.6	58.4	58.4	14.9	40.1
Effective Green, g (s)	25.2	87.6	58.4	58.4	14.9	40.1
Actuated g/C Ratio	0.23	0.79	0.53	0.53	0.13	0.36
Clearance Time (s)	3.5	4.5	5.0	5.0	3.5	3.5
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	403	1476	984	819	238	624
v/s Ratio Prot	c0.20	0.43	c0.91		0.01	c0.05
v/s Ratio Perm				0.05		0.09
v/c Ratio	0.87	0.54	1.72	0.09	0.10	0.35
Uniform Delay, d1	41.1	4.2	26.1	12.9	41.9	25.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.0	0.2	329.5	0.0	0.1	0.1
Delay (s)	59.1	4.4	355.5	12.9	42.0	25.8
Level of Service	E	A	F	B	D	C
Approach Delay (s)		21.0	340.1		27.3	
Approach LOS		C	F		C	

Intersection Summary			
HCM 2000 Control Delay	199.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	121.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Mitigated Buildout Analysis

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.6	8.9	0.1	28
	12	2.9	29.9	0.2	27
	13	0.9	8.1	0.1	26
	14	4.6	37.5	0.3	26
	15	2.4	18.5	0.1	26
	16	1.2	9.4	0.1	26
	17	1.1	8.6	0.1	26
	45	11.5	85.7	0.6	26
	19	7.0	51.1	0.4	26
	20	1.4	10.1	0.1	26
	21	6.3	45.7	0.3	26
	22	3.7	26.4	0.2	26
	23	2.1	15.1	0.1	26
	24	3.5	25.0	0.2	26
	25	3.7	26.1	0.2	26
	26	3.9	27.8	0.2	26
	27	3.7	26.5	0.2	26
Skyline Blvd (West)	48	4.6	15.4	0.1	30
	28	1.4	16.7	0.1	27
	29	1.2	11.7	0.1	26
	30	2.0	17.8	0.1	26
	31	1.3	10.8	0.1	26
	32	1.0	7.7	0.1	27
	33	3.2	25.1	0.2	26
	34	2.0	14.7	0.1	25
	35	2.6	19.5	0.1	26
	36	2.4	18.0	0.1	26
	37	4.4	31.9	0.2	26
	38	3.9	28.0	0.2	26
	39	3.4	24.5	0.2	26
	40	2.2	15.9	0.1	26
	46	4.9	33.9	0.2	26
SR-35 (East)	49	6.6	16.4	0.1	24
Total		107.8	768.4	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	3.4	16.9	0.1	24
	40	3.4	32.3	0.2	27
	39	1.9	15.7	0.1	26
	38	2.9	23.8	0.2	27
	37	3.4	27.5	0.2	26
	36	3.9	31.4	0.2	26
	35	2.3	18.1	0.1	26
	34	2.5	19.6	0.1	26
	33	1.8	14.2	0.1	26
	32	3.2	25.1	0.2	26
	31	1.0	8.0	0.1	26
	30	1.4	10.7	0.1	26
	29	2.3	17.9	0.1	26
	28	1.5	11.8	0.1	26
Skyline Blvd (West)	48	2.7	10.9	0.1	42
	27	0.3	15.6	0.1	30
	26	0.9	24.0	0.2	29
	25	1.5	25.2	0.2	28
	24	1.7	24.4	0.2	28
	23	1.8	23.1	0.2	28
	22	1.2	14.2	0.1	28
	21	2.2	25.0	0.2	27
	20	4.1	43.7	0.3	27
	19	1.0	9.7	0.1	27
	45	5.1	49.9	0.4	27
	17	8.9	83.1	0.6	27
	16	1.0	8.7	0.1	26
	15	1.0	9.0	0.1	27
	14	2.1	18.3	0.1	26
	13	4.2	37.1	0.3	27
	12	0.9	8.1	0.1	26
	11	3.7	30.6	0.2	26
Ox Mt Landfill Rd	47	2.4	7.1	0.1	47
Total		81.8	740.8	5.6	27

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.4	8.7	0.1	29
	12	2.2	29.2	0.2	28
	13	0.7	7.9	0.1	27
	14	3.8	36.7	0.3	27
	15	2.0	18.2	0.1	27
	16	1.1	9.2	0.1	26
	17	1.0	8.5	0.1	27
	45	10.3	84.6	0.6	27
	19	6.4	50.5	0.4	27
	20	1.3	10.0	0.1	26
	21	5.9	45.3	0.3	26
	22	3.4	26.2	0.2	26
	23	2.0	15.0	0.1	26
	24	3.3	24.8	0.2	26
	25	3.4	25.9	0.2	26
	26	3.7	27.6	0.2	26
	27	3.5	26.2	0.2	26
Skyline Blvd (West)	48	4.3	15.1	0.1	31
	28	1.2	16.4	0.1	28
	29	1.0	11.4	0.1	27
	30	1.7	17.4	0.1	27
	31	1.2	10.6	0.1	26
	32	0.9	7.6	0.1	27
	33	2.9	24.7	0.2	27
	34	1.8	14.6	0.1	26
	35	2.4	19.2	0.1	27
	36	2.3	17.8	0.1	26
	37	4.1	31.6	0.2	26
	38	3.7	27.8	0.2	26
	39	3.2	24.4	0.2	26
	40	2.1	15.7	0.1	26
	46	4.5	33.6	0.2	26
SR-35 (East)	49	7.3	16.9	0.1	24
Total		99.0	759.5	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	3.4	16.9	0.1	24
	40	3.3	32.4	0.2	27
	39	1.8	15.7	0.1	26
	38	2.9	23.8	0.2	26
	37	3.5	27.6	0.2	26
	36	4.0	31.6	0.2	26
	35	2.4	18.2	0.1	26
	34	2.6	19.7	0.1	26
	33	1.9	14.2	0.1	26
	32	3.3	25.2	0.2	26
	31	1.1	8.0	0.1	26
	30	1.4	10.7	0.1	26
	29	2.4	18.0	0.1	26
	28	1.6	11.9	0.1	26
Skyline Blvd (West)	48	5.9	17.2	0.1	26
	27	1.0	16.3	0.1	29
	26	2.1	25.2	0.2	27
	25	2.7	26.4	0.2	27
	24	2.9	25.5	0.2	27
	23	2.9	24.1	0.2	27
	22	1.8	14.8	0.1	26
	21	3.2	25.9	0.2	26
	20	5.7	45.1	0.3	26
	19	1.3	10.1	0.1	26
	45	6.7	51.3	0.4	26
	17	11.3	85.2	0.6	26
	16	1.2	8.9	0.1	26
	15	1.2	9.2	0.1	26
	14	2.5	18.7	0.1	26
	13	5.2	38.3	0.3	26
	12	1.1	8.3	0.1	26
	11	4.2	31.0	0.2	26
Ox Mt Landfill Rd	47	2.2	8.4	0.1	30
Total		101.0	764.0	5.6	26

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.4	8.7	0.1	29
	12	2.1	29.1	0.2	28
	13	0.7	7.9	0.1	27
	14	3.7	36.6	0.3	27
	15	2.0	18.2	0.1	27
	16	1.0	9.2	0.1	26
	17	1.0	8.5	0.1	27
	45	10.1	84.6	0.6	27
	19	6.3	50.5	0.4	27
	20	1.3	10.0	0.1	26
	21	5.8	45.2	0.3	26
	22	3.4	26.2	0.2	26
	23	2.0	15.0	0.1	26
	24	3.3	24.9	0.2	26
	25	3.4	26.0	0.2	26
	26	3.7	27.6	0.2	26
	27	3.5	26.2	0.2	26
Skyline Blvd (West)	48	4.7	16.0	0.1	29
	28	1.3	16.5	0.1	28
	29	1.0	11.5	0.1	27
	30	1.9	17.6	0.1	27
	31	1.2	10.7	0.1	26
	32	0.9	7.7	0.1	27
	33	3.1	24.9	0.2	26
	34	1.9	14.7	0.1	26
	35	2.5	19.4	0.1	26
	36	2.3	17.9	0.1	26
	37	4.2	31.7	0.2	26
	38	3.7	27.9	0.2	26
	39	3.3	24.4	0.2	26
	40	2.1	15.8	0.1	26
	46	4.6	33.6	0.2	26
SR-35 (East)	49	5.9	15.4	0.1	26
Total		98.0	759.9	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	3.4	16.9	0.1	24
	40	3.3	32.4	0.2	27
	39	1.8	15.7	0.1	26
	38	2.9	23.8	0.2	26
	37	3.4	27.6	0.2	26
	36	4.0	31.5	0.2	26
	35	2.3	18.1	0.1	26
	34	2.5	19.7	0.1	26
	33	1.9	14.2	0.1	26
	32	3.3	25.2	0.2	26
	31	1.1	8.0	0.1	26
	30	1.4	10.7	0.1	26
	29	2.4	18.0	0.1	26
	28	1.6	11.9	0.1	26
Skyline Blvd (West)	48	5.7	16.9	0.1	27
	27	1.1	16.4	0.1	28
	26	2.3	25.2	0.2	27
	25	2.8	26.4	0.2	27
	24	3.0	25.6	0.2	26
	23	2.9	24.2	0.2	26
	22	1.9	14.9	0.1	26
	21	3.3	26.1	0.2	26
	20	5.8	45.1	0.3	26
	19	1.3	10.1	0.1	26
	45	6.8	51.3	0.4	26
	17	11.5	85.9	0.6	26
	16	1.2	8.9	0.1	26
	15	1.3	9.2	0.1	26
	14	2.6	18.7	0.1	26
	13	5.2	38.2	0.3	26
	12	1.1	8.3	0.1	26
	11	4.3	31.1	0.2	26
Ox Mt Landfill Rd	47	2.8	9.3	0.1	27
Total		102.3	765.6	5.6	26

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.6	8.9	0.1	29
	12	2.8	29.8	0.2	27
	13	0.9	8.1	0.1	26
	14	4.5	37.5	0.3	27
	15	2.3	18.5	0.1	26
	16	1.2	9.4	0.1	26
	17	1.1	8.6	0.1	26
	45	11.4	85.5	0.6	26
	19	6.9	51.2	0.4	26
	20	1.4	10.2	0.1	26
	21	6.3	45.6	0.3	26
	22	3.7	26.4	0.2	26
	23	2.1	15.1	0.1	26
	24	3.5	25.1	0.2	26
	25	3.6	26.1	0.2	26
	26	3.9	27.8	0.2	26
	27	4.5	27.2	0.2	25
Skyline Blvd (West)	48	16.9	27.0	0.1	17
	28	6.9	26.4	0.1	17
	29	1.2	11.7	0.1	26
	30	1.9	17.7	0.1	27
	31	1.3	10.8	0.1	26
	32	1.0	7.7	0.1	27
	33	3.3	25.1	0.2	26
	34	2.0	14.7	0.1	25
	35	2.6	19.5	0.1	26
	36	2.4	18.0	0.1	26
	37	4.4	31.9	0.2	26
	38	3.9	28.1	0.2	26
	39	3.4	24.5	0.2	26
	40	2.2	15.9	0.1	26
	46	4.8	33.8	0.2	26
SR-35 (East)	49	8.4	17.7	0.1	23
Total		127.2	791.9	5.6	25

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	2.4	19.9	0.1	20
	40	2.5	31.5	0.2	28
	39	1.6	15.4	0.1	27
	38	2.6	23.5	0.2	27
	37	3.2	27.4	0.2	26
	36	3.8	31.4	0.2	26
	35	2.3	18.1	0.1	26
	34	2.5	19.6	0.1	26
	33	1.8	14.2	0.1	26
	32	3.2	25.1	0.2	26
	31	1.0	8.0	0.1	26
	30	1.4	10.7	0.1	26
	29	2.3	18.0	0.1	26
	28	1.5	11.8	0.1	26
Skyline Blvd (West)	48	3.9	11.6	0.1	39
	27	0.4	19.7	0.1	24
	26	0.9	24.0	0.2	29
	25	1.4	25.0	0.2	28
	24	1.7	24.3	0.2	28
	23	1.9	23.2	0.2	28
	22	1.2	14.3	0.1	27
	21	2.3	25.1	0.2	27
	20	4.3	43.7	0.3	27
	19	1.0	9.8	0.1	27
	45	5.4	50.2	0.4	27
	17	9.5	83.9	0.6	27
	16	1.0	8.7	0.1	26
	15	1.0	9.0	0.1	27
	14	2.2	18.4	0.1	26
	13	4.5	37.7	0.3	26
	12	1.0	8.2	0.1	26
	11	4.1	30.9	0.2	26
Ox Mt Landfill Rd	47	3.8	10.7	0.1	29
Total		83.7	753.0	5.6	27

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.4	8.7	0.1	29
	12	2.2	29.3	0.2	28
	13	0.7	8.0	0.1	27
	14	3.8	36.8	0.3	27
	15	2.0	18.3	0.1	26
	16	1.1	9.3	0.1	26
	17	1.0	8.5	0.1	27
	45	10.3	84.8	0.6	27
	19	6.4	50.6	0.4	26
	20	1.3	10.1	0.1	26
	21	5.8	45.3	0.3	26
	22	3.4	26.3	0.2	26
	23	2.0	15.0	0.1	26
	24	3.3	24.9	0.2	26
	25	3.4	25.9	0.2	26
	26	3.7	27.7	0.2	26
	27	3.6	26.4	0.2	26
Skyline Blvd (West)	48	15.4	25.6	0.1	18
	28	4.2	23.6	0.1	19
	29	0.9	11.4	0.1	27
	30	1.7	17.5	0.1	27
	31	1.2	10.7	0.1	26
	32	0.9	7.6	0.1	27
	33	3.0	24.9	0.2	26
	34	1.8	14.6	0.1	26
	35	2.5	19.3	0.1	27
	36	2.3	17.9	0.1	26
	37	4.2	31.7	0.2	26
	38	3.7	27.9	0.2	26
	39	3.3	24.4	0.2	26
	40	2.1	15.7	0.1	26
	46	4.6	33.6	0.2	26
SR-35 (East)	49	7.4	16.6	0.1	24
Total		113.5	779.0	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	5.8	23.3	0.1	17
	40	3.4	32.5	0.2	27
	39	1.9	15.8	0.1	26
	38	3.1	24.0	0.2	26
	37	3.7	27.9	0.2	26
	36	4.3	31.9	0.2	26
	35	2.5	18.4	0.1	25
	34	2.7	19.9	0.1	26
	33	2.0	14.4	0.1	26
	32	3.5	25.5	0.2	26
	31	1.1	8.1	0.1	25
	30	1.5	10.8	0.1	26
	29	2.7	18.3	0.1	26
	28	2.5	12.7	0.1	24
Skyline Blvd (West)	48	12.4	22.9	0.1	20
	27	1.9	21.3	0.1	22
	26	2.3	25.4	0.2	27
	25	3.0	26.6	0.2	27
	24	3.1	25.8	0.2	26
	23	3.1	24.4	0.2	26
	22	1.9	15.0	0.1	26
	21	3.4	26.3	0.2	26
	20	6.0	45.5	0.3	26
	19	1.4	10.1	0.1	26
	45	6.9	51.6	0.4	26
	17	11.8	86.1	0.6	26
	16	1.2	8.9	0.1	25
	15	1.3	9.2	0.1	26
	14	2.6	18.8	0.1	26
	13	5.3	38.4	0.3	26
	12	1.2	8.4	0.1	25
	11	4.3	31.1	0.2	26
Ox Mt Landfill Rd	47	2.2	8.4	0.1	30
Total		116.2	787.7	5.6	26

Arterial Level of Service: EB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	11	0.4	8.7	0.1	29
	12	2.1	29.1	0.2	28
	13	0.7	7.9	0.1	27
	14	3.6	36.6	0.3	27
	15	2.0	18.1	0.1	27
	16	1.0	9.2	0.1	26
	17	1.0	8.5	0.1	27
	45	10.0	84.3	0.6	27
	19	6.3	50.4	0.4	27
	20	1.3	10.0	0.1	26
	21	5.8	45.2	0.3	26
	22	3.4	26.1	0.2	26
	23	1.9	15.0	0.1	26
	24	3.2	24.8	0.2	26
	25	3.4	25.9	0.2	26
	26	3.7	27.7	0.2	26
	27	3.6	26.2	0.2	26
Skyline Blvd (West)	48	16.5	27.1	0.1	17
	28	3.7	23.2	0.1	20
	29	0.9	11.4	0.1	27
	30	1.7	17.4	0.1	27
	31	1.2	10.6	0.1	26
	32	0.9	7.6	0.1	27
	33	3.0	24.8	0.2	26
	34	1.8	14.6	0.1	26
	35	2.5	19.4	0.1	26
	36	2.3	17.9	0.1	26
	37	4.2	31.7	0.2	26
	38	3.8	27.9	0.2	26
	39	3.3	24.4	0.2	26
	40	2.1	15.8	0.1	26
	46	4.6	33.7	0.2	26
SR-35 (East)	49	7.1	16.1	0.1	25
Total		112.9	777.7	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	4.6	22.1	0.1	18
	40	3.3	32.4	0.2	27
	39	1.9	15.8	0.1	26
	38	3.1	24.1	0.2	26
	37	3.7	27.8	0.2	26
	36	4.3	31.9	0.2	26
	35	2.5	18.3	0.1	25
	34	2.7	19.9	0.1	26
	33	2.0	14.4	0.1	26
	32	3.5	25.4	0.2	26
	31	1.1	8.1	0.1	25
	30	1.5	10.8	0.1	26
	29	2.6	18.2	0.1	26
	28	2.3	12.6	0.1	25
Skyline Blvd (West)	48	12.1	22.8	0.1	20
	27	1.8	21.1	0.1	22
	26	2.3	25.4	0.2	27
	25	3.0	26.7	0.2	27
	24	3.2	25.8	0.2	26
	23	3.1	24.4	0.2	26
	22	1.9	15.0	0.1	26
	21	3.4	26.3	0.2	26
	20	6.1	45.5	0.3	26
	19	1.4	10.2	0.1	26
	45	7.0	51.5	0.4	26
	17	11.8	86.0	0.6	26
	16	1.2	8.9	0.1	25
	15	1.3	9.2	0.1	26
	14	2.6	18.8	0.1	26
	13	5.3	38.5	0.3	26
	12	1.2	8.4	0.1	25
	11	4.4	31.2	0.2	26
Ox Mt Landfill Rd	47	2.7	9.2	0.1	27
Total		115.2	786.7	5.6	26

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1331	0	0	456
Future Vol, veh/h	0	0	1331	0	0	456
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1447	0	0	496

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1943	1447	0	-	-	-
Stage 1	1447	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	71	161	-	0	0	-
Stage 1	216	-	-	0	0	-
Stage 2	612	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	71	161	-	-	-	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	216	-	-	-	-	-
Stage 2	612	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	1509	1103	0	0	0
Future Vol, veh/h	0	1509	1103	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1640	1199	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	2839	1199
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	1640	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	19	226
Stage 1	0	-	-	0	286	-
Stage 2	0	-	-	0	174	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	19	226
Mov Cap-2 Maneuver	-	-	-	-	19	-
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	174	-

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

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	1331	456	0	0	0
Future Vol, veh/h	0	1331	456	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1447	496	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1943	496
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	1447	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	71	574
Stage 1	0	-	-	0	612	-
Stage 2	0	-	-	0	216	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	71	574
Mov Cap-2 Maneuver	-	-	-	-	71	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	216	-

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

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

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1315	0	0	3	774	1	0	2	14	0	1
Future Vol, veh/h	2	1315	0	0	3	774	1	0	2	14	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	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	150	-	-	-	-	55	-	-	-	-	-	-
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	2	1384	0	0	3	815	1	0	2	15	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	818	0	0	1384	0	0	1799	2206	1384	1392	1391	3
Stage 1	-	-	-	-	-	-	1388	1388	-	3	3	-
Stage 2	-	-	-	-	-	-	411	818	-	1389	1388	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	810	-	-	495	-	-	62	44	176	119	142	1081
Stage 1	-	-	-	-	-	-	177	210	-	1020	893	-
Stage 2	-	-	-	-	-	-	618	390	-	176	210	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	495	-	-	62	44	176	117	142	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	44	-	117	142	-
Stage 1	-	-	-	-	-	-	177	210	-	1018	893	-
Stage 2	-	-	-	-	-	-	617	390	-	173	210	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	39	38.2
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	109	810	-	-	495	-	-	124
HCM Lane V/C Ratio	0.029	0.003	-	-	-	-	-	0.127
HCM Control Delay (s)	39	9.5	-	-	0	-	-	38.2
HCM Lane LOS	E	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Approach	EB	WB	NB
Entry Lanes	2	2	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1230	469	428
Demand Flow Rate, veh/h	1255	478	436
Vehicles Circulating, veh/h	124	120	1255
Vehicles Exiting, veh/h	474	1255	124
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.5	4.6	36.1
Approach LOS	A	A	E

Lane	Left	Right	Bypass	Left	Right	Left	Bypass
Designated Moves	LT	TR	R	LT	TR	L	R
Assumed Moves	LT	TR	R	LT	TR	L	R
RT Channelized			Free				Yield
Lane Util	0.470	0.530		0.471	0.529	1.000	
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.535	
Critical Headway, s	4.645	4.328	0	4.645	4.328	4.328	316
Entry Flow, veh/h	590	665	1938	225	253	120	384
Cap Entry Lane, veh/h	1204	1278	0.980	1209	1282	489	0.980
Entry HV Adj Factor	0.980	0.981	0	0.980	0.983	0.983	310
Flow Entry, veh/h	578	652	1900	220	249	118	376
Cap Entry, veh/h	1180	1253	0.000	1184	1260	480	0.824
V/C Ratio	0.490	0.520	0.0	0.186	0.197	0.246	45.6
Control Delay, s/veh	8.4	8.5	A	4.7	4.5	11.1	E
LOS	A	A	0	A	A	B	7
95th %tile Queue, veh	3	3		1	1	1	

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Approach	EB	WB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1662	1117	166
Demand Flow Rate, veh/h	1695	1140	169
Vehicles Circulating, veh/h	46	497	1100
Vehicles Exiting, veh/h	1223	1244	497
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.7	13.3	9.3
Approach LOS	B	B	A

Lane	Left	Right	Left	Right	Bypass	Left	Right
Designated Moves	LT	TR	LT	TR	R	L	TR
Assumed Moves	LT	TR	LT	TR	R	L	TR
RT Channelized					Yield		
Lane Util	0.470	0.530	0.470	0.530		0.272	0.728
Follow-Up Headway, s	2.667	2.535	2.667	2.535		2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	40	4.645	4.328
Entry Flow, veh/h	797	898	517	583	831	46	123
Cap Entry Lane, veh/h	1294	1366	855	931	0.980	491	557
Entry HV Adj Factor	0.980	0.981	0.980	0.980	39	0.978	0.984
Flow Entry, veh/h	781	881	507	572	815	45	121
Cap Entry, veh/h	1268	1339	838	912	0.048	480	548
V/C Ratio	0.616	0.658	0.605	0.626	4.9	0.094	0.221
Control Delay, s/veh	10.4	11.0	13.7	13.5	A	8.7	9.5
LOS	B	B	B	B	0	A	A
95th %tile Queue, veh	4	5	4	5		0	1

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	930	0	0	1597
Future Vol, veh/h	0	0	930	0	0	1597
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1011	0	0	1736

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2747	1011	0	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1736	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	22	291	-	0	0	-
Stage 1	352	-	-	0	0	-
Stage 2	156	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	22	291	-	-	-	-
Mov Cap-2 Maneuver	22	-	-	-	-	-
Stage 1	352	-	-	-	-	-
Stage 2	156	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	1226	1945	0	0	0
Future Vol, veh/h	0	1226	1945	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1333	2114	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	3447	2114
Stage 1	-	-	-	-	2114	-
Stage 2	-	-	-	-	1333	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	8	64
Stage 1	0	-	-	0	100	-
Stage 2	0	-	-	0	246	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	8	64
Mov Cap-2 Maneuver	-	-	-	-	8	-
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	246	-

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

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	930	1597	0	0	0
Future Vol, veh/h	0	930	1597	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1011	1736	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	2747	1736
Stage 1	-	-	-	-	1736	-
Stage 2	-	-	-	-	1011	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	22	108
Stage 1	0	-	-	0	156	-
Stage 2	0	-	-	0	352	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	22	108
Mov Cap-2 Maneuver	-	-	-	-	22	-
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	352	-

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

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	926	4	1	1350	5	0	0	2	2	0	12
Future Vol, veh/h	4	926	4	1	1350	5	0	0	2	2	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	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	150	-	-	-	-	55	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1007	4	1	1467	5	0	0	2	2	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1472	0	0	1011	0	0	2495	2491	1009	2487	2488	1467
Stage 1	-	-	-	-	-	-	1017	1017	-	1469	1469	-
Stage 2	-	-	-	-	-	-	1478	1474	-	1018	1019	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	458	-	-	686	-	-	20	29	292	20	29	157
Stage 1	-	-	-	-	-	-	287	315	-	159	192	-
Stage 2	-	-	-	-	-	-	157	191	-	286	314	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	458	-	-	686	-	-	18	29	292	20	29	157
Mov Cap-2 Maneuver	-	-	-	-	-	-	18	29	-	20	29	-
Stage 1	-	-	-	-	-	-	284	312	-	158	190	-
Stage 2	-	-	-	-	-	-	143	189	-	281	311	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	17.4	61.1
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	292	458	-	-	686	-	-	79
HCM Lane V/C Ratio	0.007	0.009	-	-	0.002	-	-	0.193
HCM Control Delay (s)	17.4	12.9	-	-	10.3	0	-	61.1
HCM Lane LOS	C	B	-	-	B	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.7

Intersection	
Intersection Delay, s/veh	23.0
Intersection LOS	C

Approach	EB	WB	NB
Entry Lanes	2	2	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	908	2114	647
Demand Flow Rate, veh/h	927	2156	660
Vehicles Circulating, veh/h	534	149	849
Vehicles Exiting, veh/h	1771	849	534
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.8	25.5	33.2
Approach LOS	A	D	D

Lane	Left	Right	Bypass	Left	Right	Left	Bypass
Designated Moves	LT	TR	R	LT	TR	L	R
Assumed Moves	LT	TR	R	LT	TR	L	R
RT Channelized			Free				Yield
Lane Util	0.470	0.530		0.470	0.530	1.000	
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.535	
Critical Headway, s	4.645	4.328	78	4.645	4.328	4.328	511
Entry Flow, veh/h	399	450	1938	1013	1143	149	580
Cap Entry Lane, veh/h	826	902	0.980	1177	1251	690	0.980
Entry HV Adj Factor	0.980	0.980	76	0.981	0.980	0.980	501
Flow Entry, veh/h	391	441	1900	994	1121	146	569
Cap Entry, veh/h	810	884	0.040	1154	1227	676	0.880
V/C Ratio	0.483	0.499	0.0	0.861	0.914	0.216	40.6
Control Delay, s/veh	10.9	10.6	A	22.9	27.9	7.9	E
LOS	B	B	0	C	D	A	10
95th %tile Queue, veh	3	3		12	15	1	

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Approach	EB	WB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1279	1934	300
Demand Flow Rate, veh/h	1305	1973	306
Vehicles Circulating, veh/h	21	346	1872
Vehicles Exiting, veh/h	2157	980	346
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.6	31.2	84.5
Approach LOS	A	D	F

Lane	Left	Right	Left	Right	Bypass	Left	Right
Designated Moves	LT	TR	LT	TR	R	L	TR
Assumed Moves	LT	TR	LT	TR	R	L	TR
RT Channelized					Yield		
Lane Util	0.470	0.530	0.470	0.530		0.069	0.931
Follow-Up Headway, s	2.667	2.535	2.667	2.535		2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	101	4.645	4.328
Entry Flow, veh/h	613	692	880	992	970	21	285
Cap Entry Lane, veh/h	1324	1395	982	1058	0.980	241	289
Entry HV Adj Factor	0.981	0.980	0.980	0.981	99	1.000	0.979
Flow Entry, veh/h	601	678	863	973	951	21	279
Cap Entry, veh/h	1299	1367	962	1038	0.104	241	283
V/C Ratio	0.463	0.496	0.896	0.937	4.7	0.087	0.986
Control Delay, s/veh	7.5	7.7	30.2	34.8	A	16.8	89.6
LOS	A	A	D	D	0	C	F
95th %tile Queue, veh	3	3	13	15		0	10

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	874	0	0	1573
Future Vol, veh/h	0	0	874	0	0	1573
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	950	0	0	1710

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2660	950	0	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	1710	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	25	315	-	0	0	-
Stage 1	376	-	-	0	0	-
Stage 2	160	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	25	315	-	-	-	-
Mov Cap-2 Maneuver	25	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	160	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	1185	1840	0	0	0
Future Vol, veh/h	0	1185	1840	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1288	2000	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	3288	2000
Stage 1	-	-	-	-	2000	-
Stage 2	-	-	-	-	1288	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	10	75
Stage 1	0	-	-	0	115	-
Stage 2	0	-	-	0	259	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	10	75
Mov Cap-2 Maneuver	-	-	-	-	10	-
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	259	-

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

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	874	1573	0	0	0
Future Vol, veh/h	0	874	1573	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	950	1710	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	2660	1710
Stage 1	-	-	-	-	1710	-
Stage 2	-	-	-	-	950	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	0	-	-	0	25	112
Stage 1	0	-	-	0	160	-
Stage 2	0	-	-	0	376	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	25	112
Mov Cap-2 Maneuver	-	-	-	-	25	-
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	376	-

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

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	861	4	3	1511	3	0	0	2	11	0	13
Future Vol, veh/h	1	861	4	3	1511	3	0	0	2	11	0	13
Conflicting Peds, #/hr	0	0	0	0	0	0	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	150	-	-	-	-	55	-	-	-	-	-	-
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	1	906	4	3	1591	3	0	0	2	12	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1594	0	0	910	0	0	2516	2510	908	2508	2509	1591
Stage 1	-	-	-	-	-	-	910	910	-	1597	1597	-
Stage 2	-	-	-	-	-	-	1606	1600	-	911	912	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	411	-	-	748	-	-	19	28	334	19	28	132
Stage 1	-	-	-	-	-	-	329	353	-	134	166	-
Stage 2	-	-	-	-	-	-	132	165	-	328	353	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	411	-	-	748	-	-	17	27	334	18	27	132
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	27	-	18	27	-
Stage 1	-	-	-	-	-	-	328	352	-	134	160	-
Stage 2	-	-	-	-	-	-	114	159	-	325	352	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	15.8	249.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	411	-	-	748	-	-	34
HCM Lane V/C Ratio	0.006	0.003	-	-	0.004	-	-	0.743
HCM Control Delay (s)	15.8	13.8	-	-	9.8	0	-	249.9
HCM Lane LOS	C	B	-	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	2.6

Intersection	
Intersection Delay, s/veh	18.9
Intersection LOS	C

Approach	EB	WB	NB
Entry Lanes	2	2	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	973	2097	534
Demand Flow Rate, veh/h	993	2139	545
Vehicles Circulating, veh/h	466	110	909
Vehicles Exiting, veh/h	1783	909	466
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.5	21.3	27.0
Approach LOS	A	C	D

Lane	Left	Right	Bypass	Left	Right	Left	Bypass
Designated Moves	LT	TR	R	LT	TR	L	R
Assumed Moves	LT	TR	R	LT	TR	L	R
RT Channelized			Free				Yield
Lane Util	0.470	0.530		0.470	0.530	1.000	
Follow-Up Headway, s	2.667	2.535		2.667	2.535	2.535	
Critical Headway, s	4.645	4.328	84	4.645	4.328	4.328	435
Entry Flow, veh/h	427	482	1938	1005	1134	110	546
Cap Entry Lane, veh/h	879	956	0.980	1220	1293	656	0.980
Entry HV Adj Factor	0.981	0.980	82	0.981	0.980	0.982	426
Flow Entry, veh/h	419	472	1900	986	1112	108	535
Cap Entry, veh/h	862	936	0.043	1196	1268	644	0.796
V/C Ratio	0.486	0.504	0.0	0.824	0.877	0.168	32.0
Control Delay, s/veh	10.5	10.2	A	19.3	23.0	7.6	D
LOS	B	B	0	C	C	A	8
95th %tile Queue, veh	3	3		10	13	1	

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Approach	EB	WB	SB
Entry Lanes	2	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	1156	1775	245
Demand Flow Rate, veh/h	1179	1811	249
Vehicles Circulating, veh/h	23	359	1729
Vehicles Exiting, veh/h	1955	843	359
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.9	24.3	34.4
Approach LOS	A	C	D

Lane	Left	Right	Left	Right	Bypass	Left	Right
Designated Moves	LT	TR	LT	TR	R	L	TR
Assumed Moves	LT	TR	LT	TR	R	L	TR
RT Channelized					Yield		
Lane Util	0.470	0.530	0.470	0.530		0.092	0.908
Follow-Up Headway, s	2.667	2.535	2.667	2.535		2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	82	4.645	4.328
Entry Flow, veh/h	554	625	813	916	957	23	226
Cap Entry Lane, veh/h	1322	1393	970	1047	0.980	275	327
Entry HV Adj Factor	0.981	0.980	0.980	0.981	80	1.000	0.982
Flow Entry, veh/h	543	613	797	898	938	23	222
Cap Entry, veh/h	1296	1365	951	1026	0.085	275	321
V/C Ratio	0.419	0.449	0.838	0.875	4.6	0.084	0.692
Control Delay, s/veh	6.9	7.0	24.0	26.4	A	14.7	36.5
LOS	A	A	C	D	0	B	E
95th %tile Queue, veh	2	2	10	12		0	5

Signal Warrant Analysis

Traffic Signal Warrant Analysis Workbook

1/13/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	Aditi Meshram
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	7/11/2019 - 7/11/2019
Day of the Week:	Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? Yes

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	California Ave
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**No**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**No**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Bicycle Signal Warrant (CA)	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

1/13/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	7/11/2019 - 7/11/2019
Day of the Week:	Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? Yes

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	California Ave
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

1/14/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	7/11/2019 - 7/11/2019
Day of the Week:	Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Cypress Ave
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

1/13/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	7/11/2019 - 7/11/2019
Day of the Week:	Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Cypress Ave
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**No**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**Yes**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

1/13/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	2/5/2014 - 2/6/2014
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	16th St
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**No**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**No**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

1/14/2020

STUDY AND ANALYSIS INFORMATION

Municipality:	Midcoast	**Analysis Date:**	7/8/2019
County:	San Mateo	**Conducted By:**	ADM
		Agency/Company Name:	DKS Associates

Analysis Information

Data Collection Date:	2/5/2014 - 2/6/2014
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	Highway 1
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	50	**MPH**

Minor Street Information

Minor Street Name and Route Number:	16th St
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**Yes**	**No**
Warrant 2, Four-Hour Vehicular Volume	**Yes**	**No**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Appendix D
List of Project Reports

Appendix D: List of Project Reports

The following reports were developed as part of the analysis and outreach process of the project. The documents are available for viewing on the Connect the Coastside website: https://planning.smcgov.org/connect-coastside

1. Buildout Analysis and Traffic Projects, November 2014
2. Evaluation of Transportation Alternatives to Address Buildout Deficiencies, April 2015
3. Development Forecast for the San Mateo County Comprehensive Transportation Management Plan, November 2015
4. Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies, March 2016

The website also contains copies of presentations given to the Technical Advisory Committee, Midcoast Council, and Half Moon Bay City Council

Appendix E
List of Referenced Reports

Appendix E: List of Referenced Reports

The following studies and reports were referenced as part of the Midcoast framework and background information and informed the analysis and conclusions of the projects. The documents are available for viewing on the Connect the Coastside website:
https://planning.smcgov.org/connect-coastside

1. Highway 1 Safety and Mobility Improvement Study Phase 1, April 2010
2. Highway 1 Safety and Mobility Improvement Study Phase 2, November 2011
3. San Mateo County Congestion Management Program, November 2011
4. County of San Mateo Local Coastal Program Policies, June 2013
5. San Mateo County Traffic Impact Study Requirements, September 2013
6. Plan Princeton Exiting Conditions Report, May 2014
7. Coastside Access Study, April 2015
8. Highway 1 Congestion & Safety Improvement Project, August 2015
9. SamTrans Coastside Plan, August 2018

Additionally, the following policy, engineering, and design references were used in the development of standards and improvements.

1. NACTO Urban Bikeway Design Guide, 2011
2. California Manual of Uniform Control Devices, 2012
3. Zoning Regulations, Section 6254.4 (11), Planning and Building Department, County of San Mateo