COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: February 10, 2021

TO: Planning Commission

FROM: Planning Staff

SUBJECT: INFORMATIONAL ITEM: Briefing on Connect the Coastside, the San Mateo County Midcoast Comprehensive Transportation Management Plan

County File Number: PLN 2014-00430 (County of San Mateo)

INTRODUCTION

This is an informational report on Connect the Coastside, the San Mateo County Midcoast Comprehensive Transportation Management Plan ("CTC" or "Plan"). Connect the Coastside is a long range plan to help improve safety and mobility for Coastside residents, businesses and visitors. The initial stimulus for Connect the Coastside came from San Mateo County Local Coastal Program ("LCP") Policy 2.53, which calls for preparation of a comprehensive transportation management plan to address the cumulative impacts of Midcoast development through various strategies, including the expansion of public transit, consideration of mandatory lot mergers and an in-lieu fee traffic mitigation program.

The County of San Mateo Planning and Building Department has managed Connect the Coastside since 2014. Planning and Building has worked in collaboration with a team of consultants (DKS Associates as lead), community stakeholders, other County Departments, and agency partners on the Plan. Connect the Coastside was developed through an extensive public engagement process, building upon previous and current planning efforts, including the Highway 1 Safety and Mobility Study (Phases 1 and 2). Developing the Plan involved assessment of existing development and transportation conditions, projected future development and associated transportation system impacts, and solutions to address the impacts.

Planning and Building released a draft of Connect the Coastside in January 2020 and gathered stakeholder input on the draft through September 2020. Staff revised the January 2020 draft based on stakeholder input and released a Final Administrative Draft in January 2021. The Plan includes infrastructure, policy, and planning recommendations that seek to:

- Improve existing traffic conditions and public safety
- Expand transportation choices for residents and visitors
- Encourage environmentally-friendly transportation 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

RECOMMENDATION

Receive staff's presentation on the Connect the Coastside Final Administrative Draft and provide input regarding next steps.

BACKGROUND

Report Prepared By: Chanda Singh, Senior Transportation Planner, 650\363-1853

Applicant: County of San Mateo Planning and Building Department

Owner: Unincorporated Midcoast

Location: Study Area includes land area south of Tom Lantos Tunnels (Devil's Slide), extending to the southern terminus of the City of Half Moon Bay, including areas west and east of Highway 1 (to Interstate 280), as well as land areas proximate to Highway 92, from Highway 1 to Interstate 280.

Chronology:

Date	Action
August 8, 2012	Coastal Commission certifies Midcoast LCP Update, including new LCP Policy 2.53 calling for the development of a Comprehensive Transportation Management Plan.
May 20, 2014	Board of Supervisors approves contract with DKS to prepare the Comprehensive Transportation Management Plan.
May 29, 2014	Project Initiated: Scope of Work finalized and data collection commenced
August 27, 2014	Project introduction and status update to the Midcoast Community Council.
September 30, 2014	Draft Buildout Analysis and Traffic Projections Report presented at Technical Advisory Committee (TAC) Meeting #1.
October 22, 2014	Presentation to Midcoast Community Council on draft Buildout Analysis and Traffic Projections Report.
November 10, 2014	Public workshop at Half Moon Bay Brewery.
December 10, 2014	Project status report to Planning Commission.
March 4, 2015	Hybrid Transportation Alternative presented to Technical Advisory Committee (TAC).
April 8, 2015	Midcoast Community Council briefing.
April 15, 2015	Public Workshop #2 – Evaluation of Alternatives.
April 21, 2015	Half Moon Bay City Council Update.
July 7, 2015	Amendment to agreement with DKS to allow for additional analysis and public outreach regarding development forecast and transportation alternatives.
September 9, 2015	Draft Development Forecast and Alternative Transportation Standards presented to TAC.

October 14, 2015	Presentation to Midcoast Community Council.
October 20, 2015	Presentation to Half Moon Bay City Council.
October 22, 2015	Public Workshop #3 – Land Use Forecast and Alternative Transportation Standards.
November 4, 2015	Project status report to Planning Commission.
February 17, 2016	Draft Identification and Evaluation of Recommended Transportation and Land Use Alternative to Address Deficiencies presented to TAC.
March 14, 2016	Presentation to Half Moon Bay City Council.
March 23, 2016	Presentation to Midcoast Community Council.
April 7, 2016	Public Workshop #4 – Identification and Evaluation of Recommended Transportation and Land Use Alternative.
May 16, 2017	Board of Supervisors meeting to amend agreement with DKS Associates for preparation of the Comprehensive Transportation Management Plan.
August 2, 2017	Charrette with Caltrans, Midcoast Community Council member to review Cypress Avenue roundabout design
November 14, 2018	Midcoast Community Council Study Session.
September 16, 2019	Presentation of preliminary Connect the Coastside Draft to Technical Advisory Committee.
January 8, 2020	Presentation to the Midcoast Community Council.
January 15, 2020	Connect the Coastside Draft released to the public.
April 8, 2020	Presentation to the Midcoast Community Council.
May 30, 2020	Public Virtual Conversation #1-Overview of Connect the Coastside.
June 15, 2020	Public Virtual Conversation #2-Plan Recommendations for Moss Beach and Montara.
June 30, 2020	Public Virtual Conversation #3-Plan Recommendations for El Granada, Princeton, and Miramar.
July 7, 2020	Youth Focus Group #1 with Youth Leadership Institute (YLI).

July 8, 2020	Presentation to the Midcoast Community Council.
August 2020	Spanish language outreach including recorded presentation, Facebook event, and paper, online, and phone surveys.
August 20, 2020	Response to May and June Virtual Meeting Inquiries Report.
September 16, 2020	Youth Focus Group #2 with Ayudando Latinos A Soñar (ALAS).
September 16, 2020	Connect the Coastside 2020 Outreach Summary Report.
September 23, 2020	Presentation to Midcoast Community Council.
October 20, 2020	Moss Beach Transportation Improvement Evaluation meeting with Caltrans and other agency partners.
January 20, 2021	Connect the Coastside Final Administrative Draft released to the public.
January 27, 2021	Presentation to Midcoast Community Council.

DISCUSSION

History

In August 2012, the California Coastal Commission approved the LCP Midcoast Update, which included a new LCP Policy that calls for the development of a transportation management plan. Local Coastal Program Policy 2.53 reads as follows:

> *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 Connect the Coastside project kicked-off in May 2014, and from 2014 to 2016 the project team produced several reports that:

- Projected future development on the Midcoast
- Analyzed current and future transportation deficiencies
- Explored potential transportation improvements for walking, biking, driving and riding transit

This first phase of the project included extensive community engagement efforts, such as a dedicated project website, a virtual workshop, public presentations, public workshops, and email updates. In 2017 and 2018, the project went on hiatus while a detailed analysis was conducted for proposed roundabouts on Highway 1.

The Connect the Coastside project restarted in late 2018 with work to prepare a complete draft of Connect the Coastside, and the Public Working Draft of the Plan was released in January 2020. In the Spring, Summer, and Fall of 2020, the project team gathered extensive input and feedback from the Midcoast community on the Public Working Draft. The project team then updated the Plan based on that feedback and released a Final Administrative Draft in January 2021 for review by the community and key decision makers.

Public Engagement

Community engagement was a critical part of the planning process to ensure that the Plan reflected the needs of the community and to provide oversight for the assumptions, results of analysis, and final recommendations in the Plan. The project team used a variety of methods to connect with the community and hear priorities. The community was engaged by:

- Establishing and regularly updating a project webpage, available in English and Spanish (https://planning.smcgov.org/connect-coastside), with comment form
- Email and social media updates on Nextdoor.com and Facebook (English and Spanish)
- Distributing Connect the Coastside project factsheets (English and Spanish)

- Recorded presentations and video clips (English and Spanish)
- Online and paper surveys (English and Spanish)
- One-on-one calls to gather feedback (Spanish)
- Seven workshops and community meetings (in-person and online)
- Public meeting presentations, including Midcoast Community Council, San Mateo County Planning Commission, San Mateo County Board of Supervisors, and Half Moon Bay City Council
- Community group presentations, including youth in partnership with Youth Leadership institute (YLI) and Ayudando Latinos A Soñar (ALAS)
- Six Technical Advisory Committee meetings with members from key agencies and institutions, including Caltrans, SamTrans, Half Moon Bay, and others

For more information on community engagement see Chapter 2 of the Final Administrative draft.

Feedback

Community feedback was instrumental in shaping Connect the Coastside. In general, the community was supportive of projects that create safer places to walk, bike, and make it easier to take transit. Community members and agency stakeholders requested improvements such as the Multimodal Parallel Trail, additional marked pedestrian crossings of Highway 1, Safe Routes to School, bicycle lanes, and more frequent transit service. In addition, community feedback shaped the development of new transportation performance standards that avoid widening Highway 1 and prioritize multimodal improvements. More information on the 2020 outreach efforts and community feedback can be found in the 2020 Outreach Summary Report.

Summary of Recommendations

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 infrastructure improvements, policies, and program solutions recommended in Connect the Coastside address the present and future mobility needs of Coastside communities. Near-term projects will increase transportation choices for residents, workers and visitors. Bikeways, trail improvements and pedestrian crossings will make it easier and safer for people to walk, bicycle, skateboard, and use other non-motorized transportation devices. Investments in bus stops and expanded weekend bus service will help reduce traffic and encourage people to take public transit, especially when visiting the coast. 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.

For further information on the recommendations in Connect the Coastside please see Chapter 7 of the Final Administrative Draft.

<u>NEXT STEPS</u>

The following chronology lists anticipated actions, which includes expected project culmination in summer 2021:

Date	Action
February 24, 2021	Midcoast Community Council meeting
May 2021	Final Draft Plan and CEQA analysis released
May 2021	Midcoast Community Council and Half Moon Bay meetings
June 2021	Planning Commission meeting for consideration of Final Draft Plan
July 2021	Board of Supervisors meeting for consideration of Final Draft Plan

ATTACHMENTS

A. Connect the Coastside - Executive Summary
B. Connect the Coastside - Final Administrative Draft (January 2021)
C. Connect the Coastside – Appendices

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT A

Connect the Coastside

San Mateo County Midcoast
Comprehensive Transportation Management Plan
Executive Summary

Final Administrative Draft – January 2021

COUNTY OF SAN MATEO

SUMMARY

Connect the Coastside (CTC or the Plan) is the San Mateo County Midcoast Comprehensive Transportation Management Plan, which will help improve safety and mobility for Coastside residents, businesses and visitors. The Plan focuses on the Midcoast areas surrounding Highway 1 and Highway 92, including the unincorporated communities of Montara, Moss Beach, El Granada, Princeton and Miramar (See Map 1). Connect the Coastside identifies a diverse range of transportation improvements and land use policies that address the present and future mobility needs of Coastside communities.

The vision of Connect the Coastside is to 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. The goals of Connect the Coastside are:

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

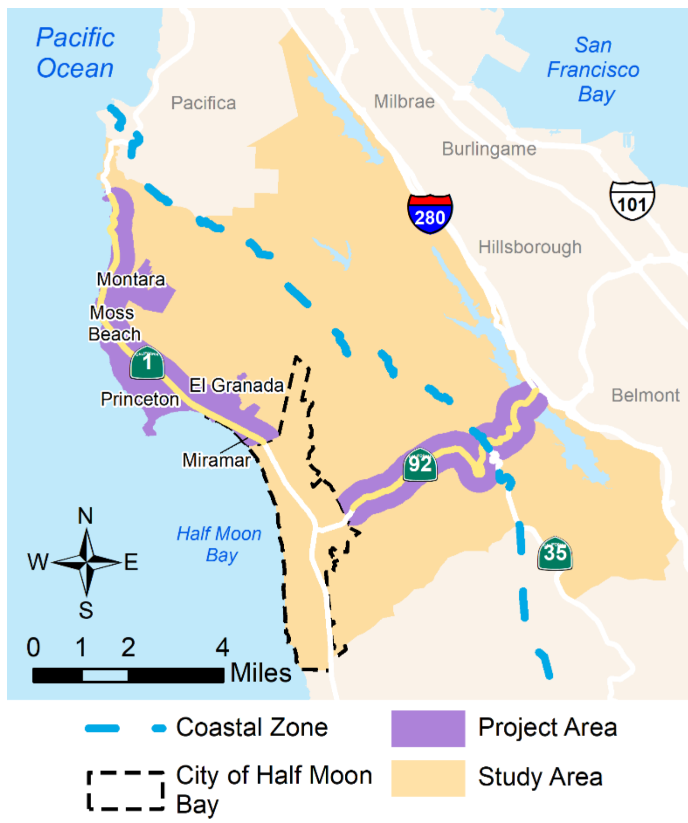
Goal 2: Lessen the cumulative traffic impacts from future development on the Midcoast.

Goal 3: Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles, reduce roadway traffic, promote environmental sustainability, and ensure people of all ages and abilities can travel.

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

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

Map 1 Connect the Coastside Project & Study Area



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 extensive public engagement process - thank you to all who contributed to the Plan's development and helped shape the future of transportation on the Midcoast. 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. The full text of Connect the Coastside is available on the San Mateo County Planning and Building website at: https://planning.smcgov.org/connect-coastside

BACKGROUND

In 2011, the San Mateo County Board of Supervisors adopted substantial amendments to its Local Coastal Program (LCP) 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 through various strategies, including the expansion of public transit, consideration of mandatory lot mergers and an in-lieu fee traffic mitigation program.

Local Coastal Program Policy 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.

In response, the San Mateo County Planning and Building Department launched the Connect the Coastside planning effort. Connect the Coastside was developed from late 2014 through early 2021 and involved:

- Engaging community and agency stakeholders
- Collecting traffic and land use data to understand existing transportation conditions
- Projecting land use and development to identify potential future transportation conditions
- Identifying physical improvements and other recommendations to address transportation impacts due to both future development and existing conditions.

Connect the Coastside is the Comprehensive Transportation Management Plan that addresses Policy 2.53 of the LCP.

COMMUNITY ENGAGEMENT

Community engagement was a critical part of the planning process to ensure that the plan reflected the needs of the community and oversight for the assumptions, results of analysis, and final recommendations in the Plan. The project team used a variety of methods to connect with the community and hear priorities. The community was engaged by:

- Establishing and regularly updating a project webpage, available in English and Spanish (https://planning.smcgov.org/connect-coastside), with comment form
- Email and social media updates on Nextdoor.com and Facebook (English and Spanish)
- Distributing Connect the Coastside project factsheets (English and Spanish)
- Recorded presentations and video clips (English and Spanish)
- Online and paper surveys (English and Spanish)
- One-on-one calls to gather feedback (Spanish)
- Seven workshops and community meetings (in-person and online)
- Public meeting presentations, including Midcoast Community Council, San Mateo County Planning Commission, San Mateo County Board of Supervisors, and Half Moon Bay City Council
- Community group presentations, including youth in partnership with Youth Leadership institute (YLI) and Ayudando Latinos A Soñar (ALAS)
- Six Technical Advisory Committee meetings with members from key agencies and institutions, including Caltrans, SamTrans, Half Moon Bay, and others

Hearing from the community was instrumental in shaping Connect the Coastside. In general, the community was supportive of projects that create safer places to walk, bike, and make it easier to take transit. Community members and agency stakeholders requested improvements such as the Multimodal Parallel Trail, additional marked pedestrian crossings of Highway 1, Safe Routes to School, bicycle lanes, and more frequent transit service. In addition, community feedback shaped the development of new transportation performance standards that avoid widening Highway 1 and prioritize multimodal improvements.

SUMMARY OF RECOMMENDATIONS

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

1. Increasing transportation choices
2. Making travel safer for pedestrians and cyclists
3. Improving traffic flow at bottlenecks
4. Increasing use of public transit

The transportation infrastructure improvements, policies, and program solutions outlined in Connect the Coastside address the present and future mobility needs of Coastside communities. Near-term projects will increase transportation choices for residents, workers and visitors. Bikeways, trail improvements and pedestrian crossings will make it easier and safer for people to walk, bike and roll. Investments in bus stops and expanded weekend bus service will help reduce traffic and encourage people to take public transit, especially when visiting the coast. 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.

Infrastructure Improvements

Final improvements were selected based on their community desire, feasibility, cost, ability to address deficiencies, consistency with the Local Coastal Program, and environmental considerations. Table 1: Connect the Coastside Recommended Infrastructure Projects summarizes key projects. Project area maps are included on page 10.

Table 1: Connect the Coastside Recommended Infrastructure Projects

Number	Project Name	Brief Description	Community
R1	Highway 1 Shoulder Treatment	Construct consistent shoulder treatment of curb and gutter in "Village" and “Fringe” in designated areas of Highway 1	All
R2	Highway 1 Side Street Stop Signs	Install stop signs and pavement markings at all side streets of SR-1 where missing	All
R3	Gray Whale Cove Turn and Acceleration Lanes	Install left-turn bay with painted island to provide storage area for left-turn movements in and out of Gray Whale Cove parking lot (from southbound Highway 1) and acceleration lane to turn left out of parking lot and continue southbound on Highway 1	North of Montara
R4	Highway 1 Turn and Acceleration Lanes at 8th Street	Modify striping to create left-turn lane into 8th St from Highway 1 southbound and acceleration lane out of 8th St to continue Highway 1 southbound	Montara
R5	16th St / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of single-lane roundabout	Moss Beach
R6	California Ave / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of single-lane roundabout	Moss Beach
R7	Cypress Ave / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of multi-lane roundabout	Moss Beach
R8	Main Street Traffic Calming and Bicycle/Pedestrian Connectivity	Pedestrian access, traffic calming and bicycle improvements in Central Montara between 7th and 11th Streets, including: curb extensions, sidewalks, marked crossings, mini traffic circle, and bike route.	Montara
R9	Carlos Street Realignment to 16th Street	Realign northern terminus of Carlos Street at Highway 1 to connect to 16th Street.	Moss Beach
R10	Carlos Street Traffic Calming	Striping, signage, and completion of missing sidewalk, with conversion to one-way southbound with parking reoriented facing south on Carlos Street to accommodate the Parallel Trail and calm traffic in central Moss Beach	Moss Beach
R11	Highway 92 / Highway 35 (East, Lower) Intersection Improvements	Intersection improvements to facilitate pedestrian and bicycle crossings and improve signal timing	Highway 92
R12	Highway 92 / Highway 35 (West, Upper) Intersection Control	Add traffic signal and crossing improvements to facilitate connections for trail users and turning movements for motorists.	Highway 92
R13	Highway 92 Truck Signs	"Trucks Use Right Lane" signage along Highway 92	Highway 92
R14	Highway 92 Left-turn Pockets	Provide left-turn pockets at local businesses on Highway 92	Highway 92
Pe1	New and Improved Crossings of Highways 1 and 92	Improve existing and add new pedestrian crossings on Highways 1 and 92 including marked crossings with flashing beacons, overcrossing of Highway 1 / south of Carlos St, and improve Highway 1 / Coronado St	All
Pe2	Highway 1 Multimodal Parallel Trail	Connected walking and bicycling facilities along the east side of Highway 1 through connected Class I Path, sidewalks, and Class III Bike Route, with marked crossings of intersecting streets with the path	All

Pe3	Midcoast Alignment Completion of California Coastal Trail	Recommended California Coastal Trail alignment and improvements in the Midcoast including: wayfinding signage, Class I Path, Class III Bike Route, trails, and paths.	All
Pe4	Highway 1 Sidewalks in Moss Beach and Montara	Add sidewalks in central Montara and Moss Beach in front of businesses located on Highway 1 and marked crossings of side streets intersection with Highway 1	Montara, Moss Beach
Pe5	Central Moss Beach Bicycle and Pedestrian Improvements	Add sidewalk on west side where missing on Etheldore St (north of California Ave) and California Ave (south of Etheldore) to connect to existing sidewalks, and add Class III Bike Route on California Ave from Etheldore St to Highway 1	Moss Beach
Pe6	Montara Safe Routes to School	Various improvements to make it easier to walk and bike to Farallone View Elementary School, including sidewalks, Class III Bike Routes, improved crossings, and stop signs	Montara
Pe7	El Granada Safe Routes to School	Various improvements to make it easier to walk and bike to El Granada Elementary School and the Wilkinson School, including sidewalks, Class III Bike Routes, traffic calming, and improved crossings.	El Granada
Pe8	Capistrano Road (South) Intersection Improvements	Improve intersection for pedestrian access including high visibility crosswalks, refuge islands and guide signs	El Granada, Princeton
B1	Highway 1 Bikeway	Bikeway designation on Highway 1 of Class II Bike Lanes	All
B2	Airport Street Bikeway and Princeton Connections	Bicycle and pedestrian connections from Moss Beach to Princeton via Cypress and Airport St.	Princeton
B3	Capistrano Road Bikeway	Bikeway designations on Capistrano Road, including Class III Bike Route with paved shoulders, Class III Bike Route with sharrows, and Class II Bike Lanes.	Princeton
B4	Highway 92 Bikeway	Bikeway designation on Highway 92 of Class III and widening shoulders where feasible	Highway 92
B5	Bicycle Parking	Install short-term bicycle parking at key destinations throughout the Midcoast	All
T1	Transit Stop Improvements	Ensure all bus stops have ADA accessible pad, with additional amenities at higher use stations including benches, shelters, and lighting	All
T2	Recreational Shuttle	Recreational weekend shuttles that run from 1) Hillsdale Caltrain Station to the Midcoast via Highway 92, continuing north to Gray Whale Cove and returning, and 2) Colma BART to Highways 1 and 92 intersection and returning	All
T3	Increased Midcoast Bus Service	Additional bus service on the Route 17 and new express bus service during peak hours between the Midcoast and Colma BART	All
Pa1	Upper Gray Whale Cove Parking Lot Improvements	Improve parking lot with pervious concrete to improve drainage and increase parking use	North of Montara
Pa2	Wayfinding	Install wayfinding signage to help orient drivers to navigate the Midcoast, including to find parking	All

Plans and Policies

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

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, lot retirement program and transportation impact mitigation fee program are strategies that can reduce future development potential, or in the case of fees, provide a funding source for in Connect the Coastside's transportation improvements.

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 transportation impact mitigation fee 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. In addition to helping fund improvements proposed by this Plan, a fee program would serve as a potential check on development. Enacting the fee will require a future nexus study, which will involve finalizing a list of projects and associated costs needed to mitigate the impacts of future growth.

Other recommendations in Connect the Coastside include:

- Engaging in future planning efforts to address sea level rise and impacts to existing transportation infrastructure
- Reducing vehicle use through support for Safe Routes to Schools programs
- Lowering speed limits on Highway 1
- Ensuring future detailed planning and design phases for specific projects address emergency response and evacuation, environmental concerns, and engage community
- Updating transportation performance standards to better support multimodal projects, including in the Local Coastal Program and County Traffic Impact Analysis requirements
- Regularly reporting on Connect the Coastside's implementation to the Board of Supervisors

IMPLEMENTATION

The proposals in Connect the Coastside were evaluated and found to be consistent with the San Mateo County General Plan and Local Coastal Program. Implementation of Connect the Coastside relies on active partnerships between the County, Caltrans, SamTrans, and other partners that own, manage, or have a stake in land on the coastside and could provide funding for improvements.

Most of the roadway improvements and significant segments of the Multimodal Parallel 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.

Following Connect the Coastside's approval by the Board of Supervisors, County staff anticipates taking early action to begin:

- Engaging in a nexus study to establish the Transportation Impact Mitigation Fee
- Initiating the lot merger program
- Seeking funding to implement bicycle parking throughout the Midcoast
- Seeking funding to begin design for Phase 2 of the Multimodal Parallel Trail
- Continuing efforts and seeking funding for planning related to sea level rise and coastal erosion

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, and meet Local Coastal Program Policy 2.53. 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. Connect the Coastside is available for review at: https://planning.smcgov.org/connect-coastside

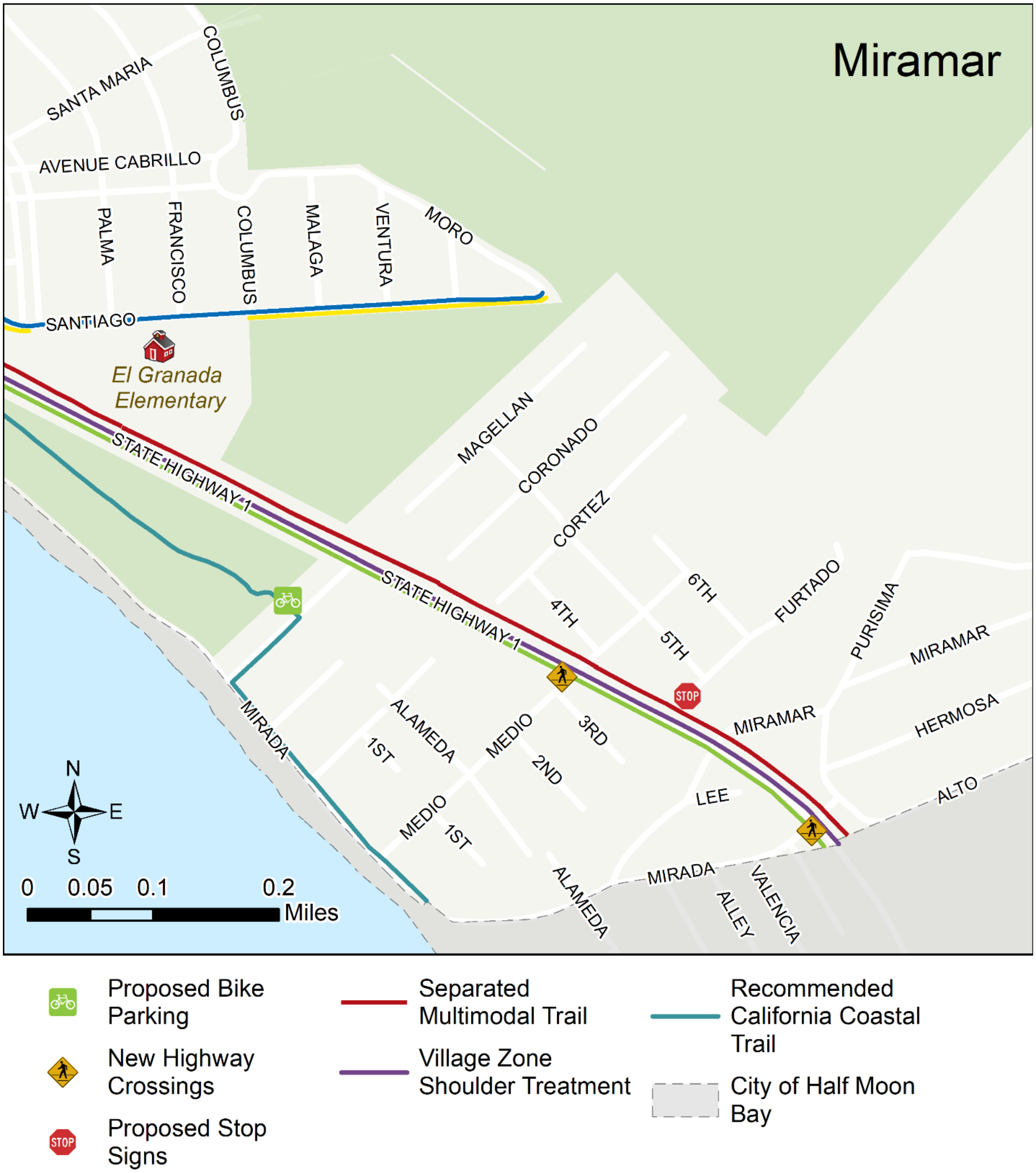
PROJECT AREA MAPS

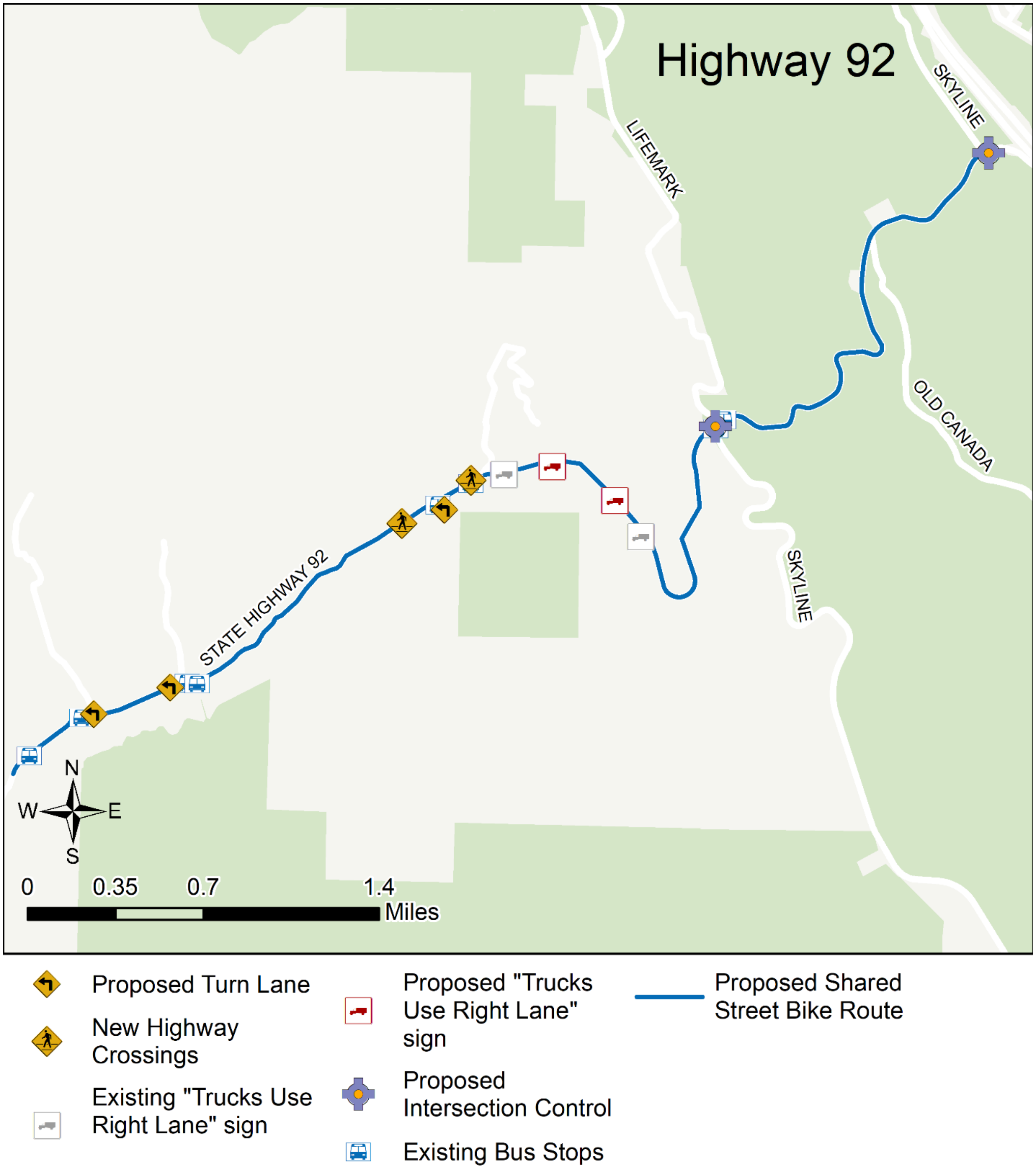
Montara
Pacific Ocean
Montara State Beach
STATE HIGHWAY 1
KANOFF AVE
2ND ST
4TH ST
FARALLONE AVE
3RD ST
4TH ST
MAIN ST
Post Office
Farallone View Elementary
3RD ST
5TH ST
9TH ST
9TH ST
9TH ST
EAST AVE
7TH ST
6TH ST
AUDUBON AVE
LE CONTE AVE
8TH ST
10TH ST
11TH ST
12TH ST
13TH ST
14TH ST
14TH ST
16TH ST
AUDUBON AVE
BIRCH ST
Point Montara Lighthouse
N
W
E
S
0 0.05 0.1 0.2
Miles
STOP
Proposed Turn Lane
Proposed Bike Parking
Improved & New Crossing
Proposed Wayfinding Signage
Intersection Improvements
Proposed Intersection Control
Proposed Stop Signs
Proposed Striped Bike Lane
Shared Street Bike Route
Separated Multimodal Trail
Sidewalk
Traffic Calming
Road Realignment
Fringe Zone Shoulder Treatment
Village Zone Shoulder Treatment


Moss Beach
CARLOS
VALLEMAR
16TH
LINCOLN
ECHO
SIERRA
PEARL
BUENA VISTA
LINDA VISTA
TIERRA ALTA
KELMORE
STETSON
VERMONT
STATE HIGHWAY 1
Post Office
SUNSHINE VALLEY
LANCASTER
WIENKE
WAVE
LANCASTER
TERRACE
Seton Medical Center
LAGUNA
NEVADA
CALIFORNIA
VIRGINIA
VERMONT
BEACH
LAKE
PEARL
ETHELDORE
MARINE
CYPRESS
PINE
Fitzgerald Marine Reserve
PARK
N
W
E
S
0 0.05 0.1 0.2
Miles
Proposed Bike Parking
Improved & New Highway Crossings
Proposed Wayfinding Signage
Proposed Intersection Control
Bus Stop Improvements
Existing Bus Stops
Proposed Stop Signs
Proposed Sidewalks
Carlos St Improvements
Fringe Zone Shoulder Treatment
Village Zone Shoulder Treatment
Multimodal Trail
Shared Street Bike Route
Proposed Striped Bike Lane
Recommended California Coastal Trail Alignment


Princeton
CULEBRA
DERECHO
Pillar Ridge
CODO
BARRANCA
AIRPORT
STATE HIGHWAY 1
SHELTER COVE
BRIDGEPORT
HARBOUR
DOELGER
MADRONA
PALM BEACH
CORAL REEF
ALCATRAZ
SONORA
PRESIDIO
MADRID
SEVILLA
CORNELL
CALIFORNIA
YALE
HARVARD
STANFORD
VASSAR
PRINCETON
WEST POINT
Pillar Point Harbor
N
W
E
S
0
0.125
0.25
0.5
Miles
Parking Study
Proposed Bike Parking
Improved & New Highway Crossings
Proposed Wayfinding Signage
Intersection Improvements
Bus Stop Improvements
Existing Bus Stops
Separated Multimodal Trail
Proposed Striped Bike Lane
Shared Street Bikeway
Fringe Zone Shoulder Treatment
Village Zone Shoulder Treatment
Recommended California Coastal Trail


El Granada
AVENUE GRANADA
ALMERIA
MONTECITO
PALOMA
ESCALONA
FERDINAND
SAN JUAN
VALLEJO
DOLORES
DEL MONTE
ISABELLA
SAN CARLOS
AVENUE DEL ORO
AVENUE PORTOLA
EL GRANADA
CARMEL
VALLEJO
SONORA
VALENCIA
AVENUE BALBOA
PALMA
COLUMBUS
KATHRYN
THE ALAMEDA
AVENUE ALHAMBRA
CORONADO
ISABELLA
THE ALAMEDA
SANTA MARIA
Post Office
OBISPO
PALMA
FRANCISCO
COLUMBUS
Sam's Chowder House
Surfer's Beach
El Granada Elementary
STATE HIGHWAY 1
Half Moon Bay
N
W
E
S
0
0.1
0.2
0.4
Miles
Parking Study
Proposed Bike Parking
Improved & New Highway Crossings
Proposed Wayfinding Signage
Intersection Improvements
Bus Stop Improvements
Existing Bus Stops
Proposed Separated Multimodal Trail
Village Zone Shoulder Treatment
Proposed Striped Bike Lane
Proposed Shared Street Bike Route
Proposed Sidewalk
City of Half Moon Bay


Miramar
SANTA MARIA
COLUMBUS
AVENUE CABRILLO
PALMA
FRANCISCO
COLUMBUS
MALAGA
VENTURA
MORO
SANTIAGO
El Granada Elementary
STATE HIGHWAY 1
MAGELLAN
CORONADO
CORTEZ
6TH
FURTADO
PURISIMA
MIRAMAR
4TH
5TH
MIRAMAR
HERMOSA
ALAMEDA
MEDIO
3RD
1ST
2ND
MIRADA
LEE
ALTO
MEDIO
1ST
ALAMEDA
MIRADA
ALLEY
VALENCIA
N
W
E
S
0 0.05 0.1 0.2
Miles
Proposed Bike Parking
New Highway Crossings
Proposed Stop Signs
Separated Multimodal Trail
Village Zone Shoulder Treatment
Recommended California Coastal Trail
City of Half Moon Bay


Highway 92
SKYLINE
LIFEMARK
OLD CANADA
SKYLINE
STATE HIGHWAY 92
N
W
E
S
0
0.35
0.7
1.4
Miles
Proposed Turn Lane
New Highway Crossings
Existing "Trucks Use Right Lane" sign
Proposed "Trucks Use Right Lane" sign
Proposed Intersection Control
Existing Bus Stops
Proposed Shared Street Bike Route

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

Connect the Coastside

San Mateo County Midcoast
Comprehensive Transportation Management Plan

Final Administrative Draft – January 2021

COUNTY OF SAN MATEO

AUTHORS AND CONTRIBUTORS

San Mateo County

Planning and Building Department
Steve Monowitz
Joe LaClair
Chanda Singh
Katie Faulkner
Rob Bartoli
James Hinkamp
Janneth Lujan
Michael Schaller
Katy Moylan
Ryan Reynolds

Office of Supervisor Don Horsely, District 3
Supervisor Don Horsely
Chris Hunter
Brae Hunter
Carrie Dallman
Lena Silberman

Office of Sustainability
Jessica Stanfill Mullin
Jackie Nuñez
Joel Slavit
Julia Malmo-Laycock

County Manager's Office
Peggy Jensen
Ellie Dallman

Health Department
Greg Smith

Parks Department
Nicholas Calderon
Sam Herzberg

Sheriff's Office
Saul Lopez

Department of Public Works
Khoa Vo
Ann Stillman
Joe LoCoco
Julie Casagrande
Diana Shu
Hanieh Houshmandi
Harry Yip

Consultants

DKS Associates
Josh Pilachowski
Aditi Meshram
Erin Vaca
Bill Loudon
Bobby Siddhu

Dyett-Bhatia Associates
Rajeev Bhatia
Peter Winch
Katharine Pan

Flint Strategies
Kendall Flint

Nelson\Nygaard
H. Lo
Colin Burgett
Francesca Napolitan

Schechter Consulting
Debbie Schechter

Common Knowledge
Susan Clark
William Cooley

Circle Point
Rochelle Germano

Advisors

Mohammad Suleiman, Caltrans District 4
Saif Mamoon, Caltrans District 4
Lance Hall, Caltrans District 4
Whitney Lawrence III, Caltrans District 4
Kelsey Pettis, Caltrans
Elliot Goodrich, Caltrans District 4
Josephine Hsai, Caltrans District 4
Sergio Ruiz, Caltrans District 4
Stephen Conteh, Caltrans District 4
Dan Wilkins, Town of Truckee
Jill Ekas, City of Half Moon Bay
Brittney Cozzolino, City of Half Moon Bay
Jennifer Chong, City of Half Moon Bay
Jim Allen, California Highway Patrol
Manuel Banuelos, California Highway Patrol
David Dickson, Coastside County Water District
Chuck Duffy, Granada Community Services District
Clemens Heldmaier, Montara Sanitary and Water District
Mike Williams, Mid-Peninsula Regional Open Space District
Gretchen Lausten, Mid-Peninsula Regional Open Space District
John Moren, San Mateo County Harbor District
John Hoang, City/County Association of Governments of San Mateo County
Sabrina Brennan, Coastside Bicycle Coalition
Maria Timofeyeva, Commute.org
Christy Wegener, SamTrans
Daniel Shockley, SamTrans
Alex Lam, SamTrans
Millie Tolleson, SamTrans
Joe Hurley, San Mateo County Transportation Authority
Dr. Sean McPhetridge, Cabrillo Unified School District
Carlene Foldenauer, Cabrillo Unified School District
Amy Brees, Golden Gate National Recreation Area
Darren Brown, Golden Gate National Recreation Area
Krystlyn Giedt, Half Moon Bay Coastside Chamber of Commerce
Daniel Olstein, Peninsula Open Space Trust
Jess Brown, San Mateo County Farms Bureau
David Olson, Midcoast Community Council
Len Erickson, Midcoast Community Council
Claire Toutant, Midcoast Community Council
Chris Spohrer, California State Parks
Sheila Branon, California State Parks

Engagement Partners

Midcoast Community Council
Ayudandos Latinos A Sonar (ALAS)
Youth Leadership Institute
Coastside Hope
Peninsula Conflict Resolution Center
Pillar Ridge Manufactured Homes

TABLE OF CONTENTS

FIGURES

TABLES

MAPS

1.Introduction

BACKGROUND

Connect the Coastside serves as the San Mateo County Midcoast Comprehensive Transportation Management Plan (Plan or CTMP). Connect the Coastside aims to improve the safety and mobility for Midcoast residents, businesses and visitors by recommending a suite of projects, policies, and programs to address current and future transportation conditions.

San Mateo County's Local Coastal Program (LCP) Policy 1.23 provides, in part, that the County shall "...limit the maximum number of new dwelling units built in the urban Midcoast to 40 units each calendar year until...A comprehensive transportation management plan, as described in Policy 2.53, is incorporated into the LCP." In addition, LCP policy 2.53 describes the required content of a comprehensive transportation management plan to address the cumulative traffic impacts of residential development on the San Mateo County Midcoast. Although the County plans to continue limiting the maximum number of dwelling units to 40 units each calendar year, the County has prepared this comprehensive transportation management plan for the San Mateo County Midcoast to address the mobility needs of Midcoast residents and visitors, to protect coastal resources and public access, and to improve the livability for Midcoast residents.

Since 2014, San Mateo County's Planning and Building Department has worked in collaboration with a team of consultants, community stakeholders, and agency partners on the Plan. Connect the Coastside was developed through an extensive public engagement process, building upon previous and current planning efforts, including the Highway 1 Safety and Mobility Study (Phases 1 and 2).

LCP POLICY 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 scope of the project included:

- Collecting data on existing transportation conditions
- Projecting future development
- Analyzing current and future transportation conditions
- Recommending projects, programs, and policies based on the findings

The figure below provides a snapshot of Connect the Coastside's development process, including the interim deliverables that informed and are referenced in the Plan, which are also available on Connect the Coastside's webpage: https://planning.smcgov.org/connect-coastside

Figure 1: Connect the Coastside Development Timeline and Interim Deliverables

The California Coastal Act and the County's certified Local Coastal Program direct 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 informs the County's implementation of the public works and land use components of the Local Coastal Program and outlines the actions and partnerships that will be necessary to achieve recommended improvements. This Plan will support the County's efforts to pursue funding for priority projects and to prepare San Mateo County Midcoast communities to meet future transportation needs.

The Plan's recommendations seek to:

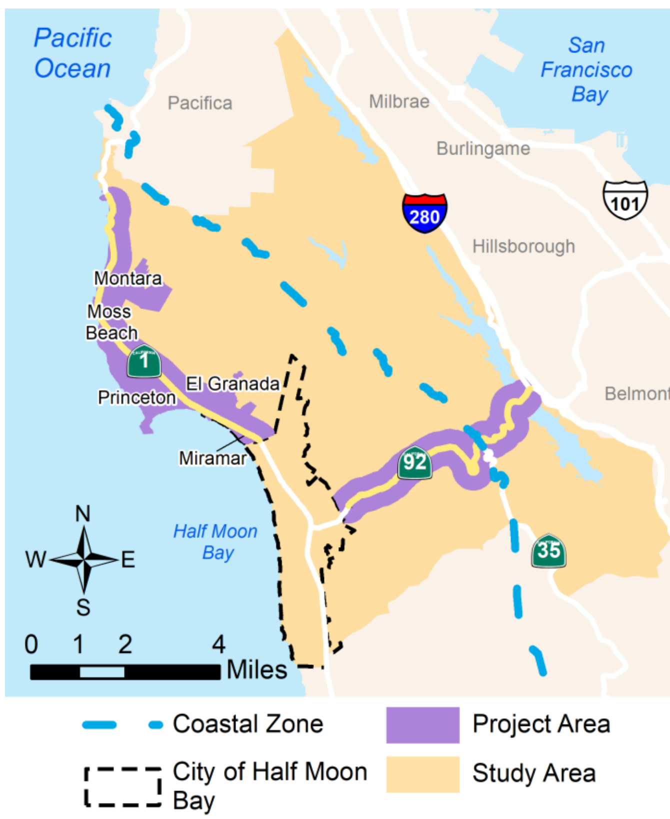
- Improve existing traffic conditions and public safety
- Expand transportation choices for residents and visitors
- Encourage environmentally-friendly transportation options that reduce car trips, such as walking, biking and public transit
- Respect the character of Midcoast communities and protect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

PLANNING AREA

Connect the Coastside's **project area** 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 Local Coastal Program. This includes the unincorporated communities of Montara, Moss Beach, El Granada, Princeton and Miramar. The Plan's project area also includes Highway 92 between Half Moon Bay and Interstate 280. Connect the Coastside's recommendations are focused within the project area.

The impacts of development and regional growth affect conditions in the Midcoast; therefore, the Plan's **study area** is larger and includes the City of Half Moon Bay and rural areas surrounding the study area. Future growth and development within the study area were considered in the traffic impacts analysis.

Map 1: Connect the Coastside Project and Study Areas



SAN MATEO COUNTY MIDCOAST COMMUNITY

SETTING

The San Mateo County Midcoast is a unique locale of low-density neighborhoods and eclectic commercial areas surrounded by open spaces with the vast Pacific Ocean to the west and the Santa Cruz Mountains to the east, setting these communities apart from the metropolitan Bay Area. The Midcoast is comprised of five distinct communities - **Miramar, El Granada, Princeton Moss Beach and Montara**, each with defining characteristics, but united by common features of developed areas interspersed with open space and agricultural lands, infusing the Midcoast with a rural character despite its suburban settlement pattern. Important natural resources and habitats in the Midcoast can be found in the Fitzgerald Marine Reserve and several federal, state and county parks and beaches. Because of these characteristics, the Midcoast is an extremely popular recreational destination for Bay Area residents and visitors.

Highway 1 has served as the primary vehicular Midcoast access route since its construction in 1934. Highways 1 and 92 form a "T" in Half Moon Bay, the neighboring city to the south of the Midcoast, and these two-lane highways provide the only access to the Midcoast from north, south and east. These two highways also serve as the only arterial roadways in the Midcoast and are critical to Midcoast mobility for most trips made by auto or transit, including emergency evacuations. As the Bay Area population has grown, the increasing popularity of the Midcoast as a place of residence or employment and as a recreational destination has brought into stark relief the limitations of Highways 1 and 92 to meet the increasing demands for commute, shopping, recreational and other automobile and transit trips.

Highways 1 and 92 are generally two-lane roads with left-turn pockets, acceleration lanes, and right-turn lanes at some intersections. Conditions vary from rural, undeveloped surroundings, where traffic movement is typically free, to more urbanized settings in the village areas, with cross traffic, parking, driveway access, and periods of congestion during school and work commute times. There are periods of gridlock on weekends with good weather and during annual events at Half Moon Bay Airport, Pillar Point Harbor and the City of Half Moon Bay.

On Highway 1, visitors park in designated lots and informally along the highway shoulder for trail and beach access. Through bicyclists make their way along the coast using the highway shoulder, which is narrow in topographically-constrained segments. Pedestrian and bicycle activity is prevalent in the community areas and at locations with access to beaches, surfing, hiking and trail-biking routes. Mass transit, originally provided by the railroad, is now limited to a few bus trips each day.

Posted speed limits on Highway 1 vary from 45 miles per hour (mph) heading south from Devil's Slide through Montara, to 50 mph south of Montara through Moss Beach, to 55 mph south of Moss Beach past Half Moon Bay Airport. At the northern end of the study area, a new tunnel and bridges opened in 2012, bypassing the portion of the Highway 1 roadway at Devil's Slide. The bypassed portion was transferred to the County and converted to a public scenic area, and hiking and biking trail. Heading south, Gray Whale Cove State Beach and Montara State Beach are popular destinations and activity generators between Devil's Slide and Montara. Rancho Corral de Tierra east of Highway 1 is managed by the National Park Service and attracts limited recreational visitation to this area. Future plans for improved access are being developed and could increase recreational visitors.

In Montara, residential neighborhoods are accessed by the highway and concentrated on the east side. Point Montara Lighthouse, J.V. Fitzgerald Marine Reserve, and Seal Cove are popular destinations and activity generators in Moss Beach, where large neighborhoods flank both sides of Highway 1. Montara and Moss Beach commercial areas are small and concentrated along the east side of Highway 1.

El Granada is the largest Midcoast community with residential neighborhoods sprawling over the hillsides in a unique, formal plan laid out by Daniel Burnham. El Granada's small commercial districts are concentrated along Avenue Alhambra, one at Capistrano Road and another centered around Avenue Portola. Popular and heavily-used Surfer's Beach lies offshore of El Granada and in conjunction with nearby commercial attractions, generates high parking demand largely met by informal parking along Highway 1, in Caltrans unimproved right of way and undeveloped lands of the Granada Community Services District.

Princeton has the greatest concentration of commercial activity in the Midcoast with several popular restaurants, shops, a large hotel, Half Moon Bay Airport and Pillar Point Harbor, home to a small commercial fishing fleet and hosting international surf competitions at Mavericks offshore. Miramar, which adjoins Half Moon Bay in the southern Midcoast is characterized by neighborhoods straddling Highway 1 and a small but popular commercial area on Mirada Road. The most popular segment of the California Coastal Trail in the Midcoast traverses Miramar Surf Beach Park, connecting south to Half Moon Bay segments and extending north to El Granada and Princeton, creating a premier coastal recreational experience.

Between Half Moon Bay and Interstate 280, Highway 92 winds through the Coast Range as a narrow, mainly undivided two and three lane highway with a switchback turn. The east-bound uphill portion has a 1.5-mile-long long passing lane beginning 500 feet east of Pilarcitos Creek Road, ending just before the summit and the upper Highways 35/92 intersection. The unincorporated areas on the western slope and valley bottom support a mix of commercial and agricultural uses, many of which host seasonal events that attract thousands of visitors to the area, creating congestion and unsafe pedestrian conditions. The eastern slope facing I-280 is undeveloped and consists of San Francisco Public Utility Commission watershed lands forested with a mix of trees planted decades ago.

DEMOGRAPHICS

Residents of the Midcoast are primarily homeowners, with residents of Moss Beach tending to be younger, with a higher percentage speaking a language other than English at home as compared to Montara and El Granada. Most residents work outside of the Midcoast or telecommute. The primary local industries are agriculture, commercial fishing, and hospitality.

Table 1: Midcoast Residents Demographics

Community	Population	Median Age	Median Household Income	Percent Renters	Percent Homeowners	Percentage Who Speak Language Other than English at Home
Montara	2,504	58.9	$93,167	17.6%	82.4%	7.4%
Moss Beach	3,604	42.9	$108,860	25.1%	74.9%	25.1%
El Granada	6,102	46.8	$158,939	16.5%	83.5%	14.5%

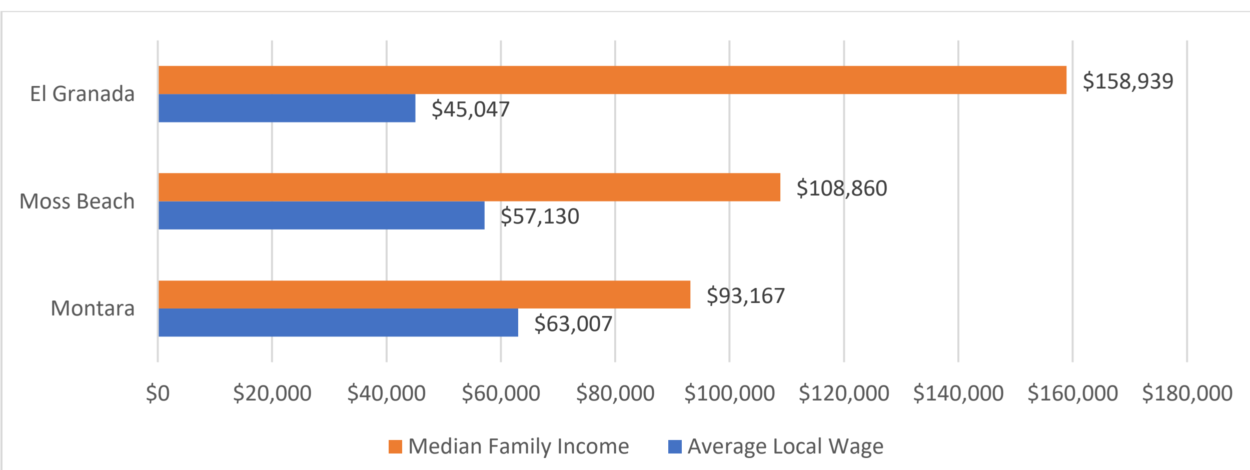
Source: U.S. Census Bureau, 2019: American Community Survey 5-year estimates
Note: Data for Princeton and Miramar is combined with Half Moon Bay and unavailable separately

Table 2: Midcoast Number of Businesses and Employees

Community	Businesses	Employees
Montara	57	275
Moss Beach	48	353
El Granada	66	426

Jobs on the Midcoast tend to pay less money, on average, than the median family income in each community. This means that those who work locally, especially single-income households, may have a harder time paying for living expenses or may be forced to live elsewhere and commute to work.

Figure 2: Midcoast Wages v. Family Income



Travel Behaviors

Most Midcoast residents commute to work by driving alone in a vehicle, with average commute times from 32.7 minutes (Moss Beach), 33.2 minutes (El Granada) to 39.3 minutes (Montara). Percentage of residents regularly working from home (telecommute) were 9.9% (Montara), 11.2% (El Granada), and 15.5% (Moss Beach), which can help reduce traffic impacts.

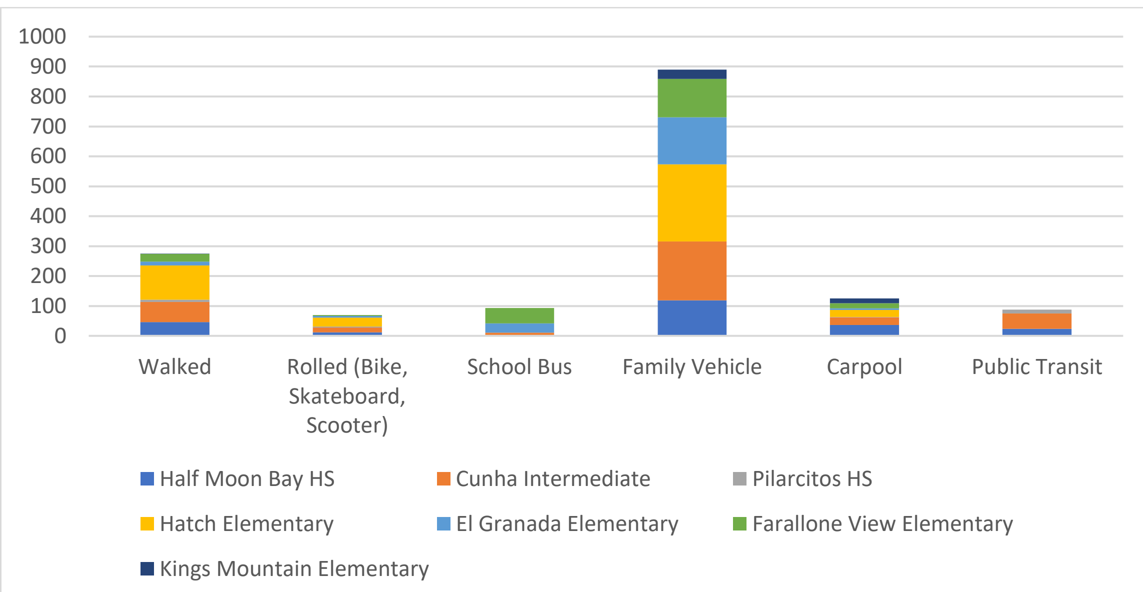
Table 3: Midcoast Commute to Work Mode

Community	Driving Alone (Car, Truck or Van)	Carpool	Transit	Walk	Bike	Other (Taxi or Motorcycle)
Montara	80.1%	-	9.9%	-	-	-
Moss Beach	58.3%	13.7%	5.8%	1.9%	4.9%	-
El Granada	78.1%	6.8%	1.0%	2.6%	-	0.3%

Source: U.S. Census Bureau, 2019: American Community Survey 5-year estimates subject tables
Note: Data for Princeton and Miramar is combined with Half Moon Bay and unavailable separately

Cabrillo Unified School District conducts a student and parent survey of students as part of its Safe Routes to School program to understand how students travel.[1] The student travel mode survey results from Fall 2019/2020 are shown below. Overall, most students travel to school by car (64%) with about 24% using an active mode (walking or rolling).

Figure 3: Cabrillo Unified School District SRTS Student Travel Mode Survey Results - Fall 2019/2020

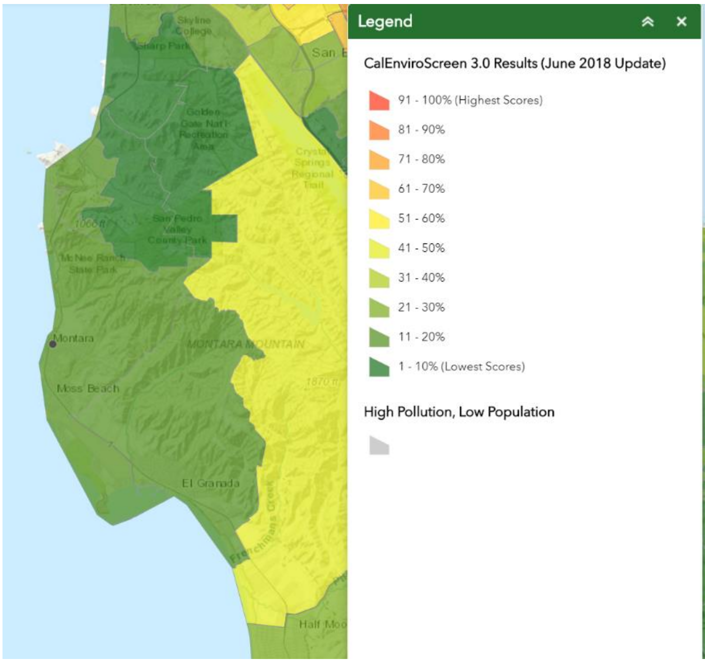


Notes:
(1) Source: Carlene Foldenauer, SRTS Coordinator, Cabrillo Unified School District
(2) Students in intermediate and high school travel to Half Moon Bay
(3) Tallies do not represent full student population; overall, about half were surveyed
(4) Results represent average number of students tallied over two days

[1]Cabrillo Unified School District Safe Routes to School (https://www.cabrillo.k12.ca.us/our_community/safe_routes_to_school)

OTHER

Map 2: CalEnviroScreen 3.0 Results for Midcoast Area



CalEnviroScreen is a tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. The scores are mapped so that different communities can be compared. An area with a high score is one that experiences a much higher pollution burden than areas with low scores. The Midcoast is considered to be less affected than most California communities, ranking in the 10-15% category.
https://oehha.ca.gov/calenviroscreen

The **California Healthy Places Index** (HPI) combines 25 community characteristics into a single indexed HPI score. HPI scores for each census tract can be compared across the state to paint an overall picture of health and well-being in each neighborhood in California, with light and dark green areas indicating places with healthier community conditions compared to places symbolized in light and dark blue. This tract has healthier community conditions than 89.8% of other California census tracts. Source: https://map.healthyplacesindex.org/

Map 3: Montara Healthy Places Index (Score 89.8 Percentile)

OPPORTUNITIES AND CHALLENGES

The Midcoast has opportunities and challenges that will affect how well the mobility needs of the community can be met.

OPPORTUNITIES

Many Midcoast residents are engaged in local government and care passionately about the quality of life and future of the Midcoast, as evidenced by the Midcoast Community Council and engagement as part of this planning effort. Extensive past planning efforts have further developed community consensus around the type of mobility improvements Midcoast stakeholders want to see and community values. There is support for thinking about transportation differently and amplifying the need for active transportation, and a shared desire to not widen Highway 1. Many residents already use walking and bicycling for recreation and travel. There is also a shared community desire to reduce development and related impacts, with conservation and environmental considerations a widely-held value. As technology has evolved, so have transportation services and travel behaviors. A substantive number of residents (9 to 15%) already telecommute, helping to reduce the demand for peak-hour travel. Other transportation technologies, such as on-demand transit, could also make it easier to get around the Midcoast and travel to other areas.

CHALLENGES

The Midcoast faces challenges in realizing community goals and vision for transportation. Climate change has accelerated sea level rise, coastal erosion, and the number and severity of emergencies like wildfires. These changes impact the ability to evacuate and respond to emergencies, and the durability of transportation infrastructure. Some reinforcement projects and emergency work to repair and stabilize roads have proven to be short-term in their efficacy, signaling the need for additional comprehensive planning processes. In Sonoma County, Caltrans and partners are planning for the long-term realignment of Highway 1[2] due to consistent and more frequent damage due to erosion. The San Mateo County Office of Sustainability and Flood and Sea Level Rise Resiliency District have engaged in additional planning and modeling to understand the impacts and extent of sea level rise, flooding, and wildfire on Midcoast communities.

As it stands now, Highway 1 serves multiple uses (people traveling through, local access to neighborhood business district, and primary road for transit), and with little desire and opportunity to expand capacity, transportation solutions must be creative and encourage behavior change to make an impact. Regional pressures, such as the Bay Area population growth, have increased recreational demand and visitor traffic to the Midcoast. The COVID-19 pandemic has also created uncertainty about the future and what travel behavior changes may be here to stay, and technology (such as ability to telecommute and availability of rideshare

---

[2] Gleason Beach Roadway Realignment Project (https://gleasonbeachrealignment.org/) and https://www.latimes.com/california/story/2020-11-27/gleason-beach-managed-retreat

options like Uber or Lyft), have also changed the times at which people visit the Midcoast and how they get there.

Although there is a shared desire for increased transit services and use, ridership is currently low and development patterns are at the lower end of suburban-level density, making providing transit and service expansion expensive per rider. Because of constraints on Highways 1 and 92, buses are also stuck in traffic along with other vehicles, making express transit service more challenging to provide.

CalEnviroScreen is often used as a measure of disadvantaged community status to help prioritize State and Regional funding to areas of most need. Compared to the rest of the State and region, the Midcoast is not disadvantaged and will not compete as well for funding sources that prioritize investments in disadvantaged communities, making the funding strategy to implement recommendations in Connect the Coastside more complex.

Connect the Coastside attempts to build on the opportunities and strengths of the Midcoast to overcome the challenges that existing conditions create. Through ongoing, active community engagement, perseverance, and by leveraging the political will among decision makers, this Plan can lead to improved mobility conditions in the Midcoast in a way that protects the qualities of the place that make it so special and motivate residents to safeguard them.

Sea Level Rise and Erosion

In 2018 San Mateo County published a Sea Level Rise Vulnerability Assessment[3] for the County as part of the Sea Change SMC[4] initiative. The Assessment used three sea level rise scenarios to identify areas vulnerable to future flooding, and one scenario for coastal erosion projections to identify areas likely to be lost over time to erosion:

Table 4: Sea Change San Mateo County Sea Level Rise Scenarios

BASELINE SCENARIO	**1% annual chance flood (present-day extreme flood also known as 100 year flood)**
MID-LEVEL SCENARIO	1% annual chance flood + 3.3 feet of sea level rise
HIGH-END SCENARIO	1% annual chance flood + 6.6 feet of sea level rise
COASTAL EROSION	The projected extent of coastal erosion expected with 4.6 feet of sea level rise

These scenarios are visualized in the Sea Level Rise and Erosion Maps from the SMC Sea Level Rise Vulnerability Assessment below.

The County used sea level rise inundation data from the United States Geological Survey (USGS) and from Point Blue's Our Coast, Our Future tool, which still constitutes the best available sea level rise data for the County. The scenarios indicate the projected extent of flooding should the project area experience a 1% chance annual storm plus sea level rise. The erosion data are from

[3] Sea Change San Mateo County Vulnerability Assessment - https://seachangesmc.org/vulnerability-assessment/
[4] Sea Change San Mateo County - https://seachangesmc.org/

the Pacific Institute Study developed by Philip Williams and Associates, Ltd. in 2009. The erosion scenario illustrates potential future erosion with 4.5 feet of sea level rise and assumes no shoreline protective devices.

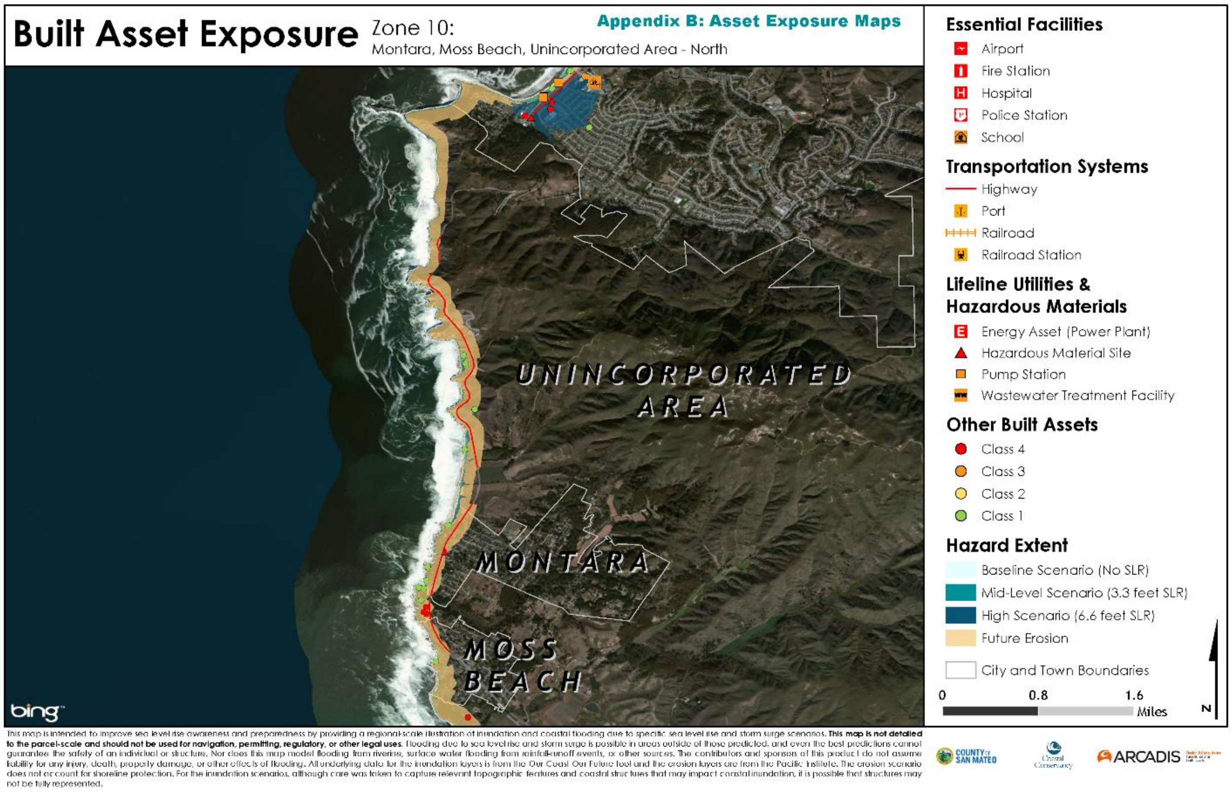
The Sea Change SMC report found that certain areas of the Midcoast were vulnerable to sea level rise and erosion. Areas of Montara, Moss Beach and Princeton were found to be risk of inundation under each of the three sea level rise scenarios. Areas of Montara, Moss Beach, Princeton, Mirada Road and State Route 1 at Surfer’s Beach are all at risk of erosion. Sea level rise and erosion have the potential to impact beaches, parks, trails, roads and natural habitats in the Midcoast area.

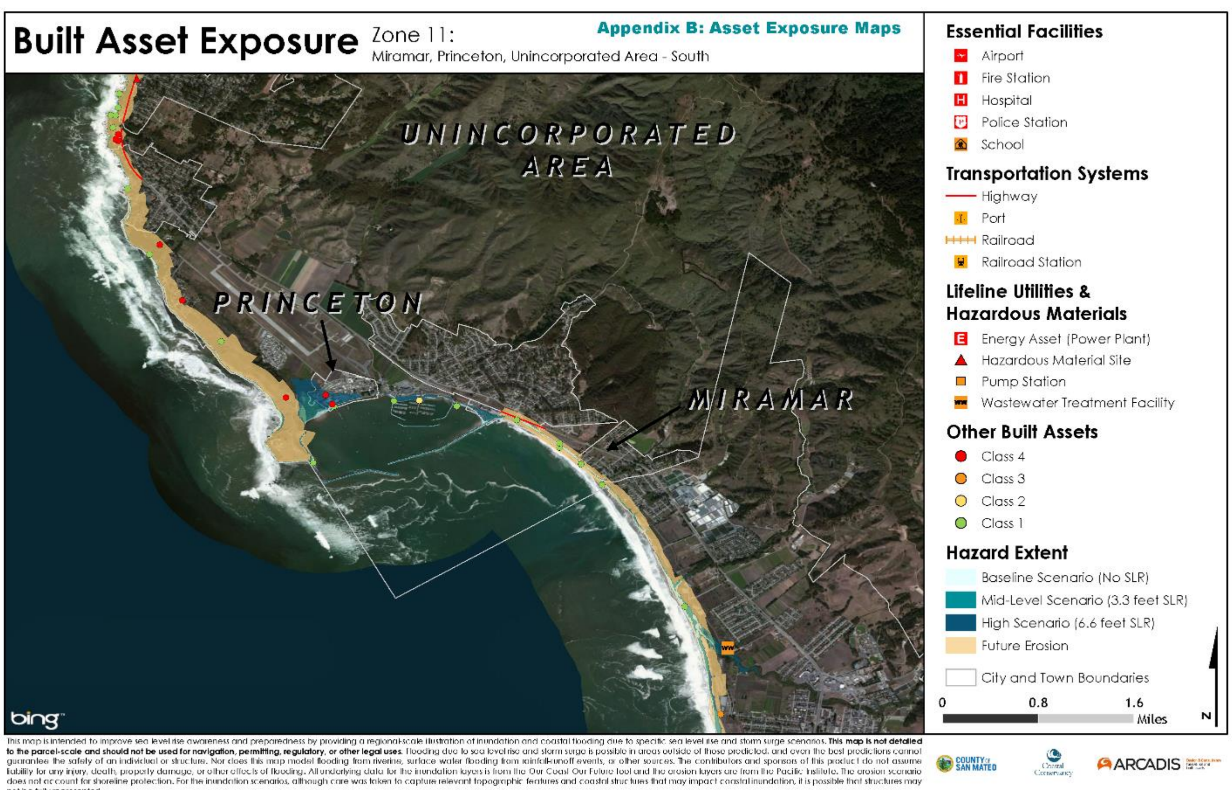
The Vulnerability Assessment included asset vulnerability profiles for both Mirada Road and Highway 1 at Surfer’s Beach. The Mirada Road profile found the road highly vulnerable to sea level rise and erosion. Under current conditions, Mirada Road is exposed to high water levels and waves and has experienced erosion failures. Bluff erosion rapidly undercuts the road, making it very sensitive to storm conditions. This segment of Mirada Road is located within the area identified by the Pacific Institute Study as susceptible to erosion. Waves routinely overtop the bluff and throw water across the full width of Mirada Road during storm events. Higher water levels will likely increase the frequency with which Mirada Road and its adjacent properties are exposed to wave impacts and will increase erosion impacts on this section.

The Vulnerability Assessment found that Highway 1 at Surfer's Beach is highly vulnerable to sea level rise. It is currently exposed to erosive forces, such as waves and water levels, that will only grow more severe with sea level rise. This segment of Highway 1 is within the area identified by the Pacific Institute Study as susceptible to erosion by 2100. Highway 1 is highly exposed at Surfer's Beach; the beach itself is subject to daily high tides and wave action, which have caused significant beach erosion and created the need for repair and ongoing slope protection maintenance along this section of highway.

Future updates to Plan Princeton (described further on page 33) will include a more in-depth look at sea level rise and coastal erosion in the Princeton area. Initial findings indicate that sea level rise and storms will increase the rate of coastal erosion along the Princeton shoreline modifying sediment supply and movement, resulting in a loss of beach, impacts to habitat, public access and recreation, and development. The San Mateo County Harbor District is pursuing a beach nourishment project at Surfer’s Beach to improve habitat and public access, and mitigate coastal erosion threatening Highway 1 and the Coastal Trail.

Map 4: Sea Level Rise and Erosion Maps from the SMC Sea Level Rise Vulnerability Assessment





2.Engagement

APPROACH

Recognizing that public understanding and support is important for the success of any planning effort, a guiding principle of the Connect the Coastside process was to follow a robust engagement strategy and incorporate feedback from the public and agency partners throughout the process. 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 was produced with considerable input from a Technical Advisory Committee, the Midcoast Community Council, online public surveys and public workshops.

In addition, the Coastal Act 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. 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.

The goals of the outreach efforts were to hear from as many different Coastside stakeholders as possible and to provide multiple ways to learn about and provide comments on the Plan. Several outreach opportunities focused on reaching a broad cross-section of Coastside stakeholders including youth, monolingual Spanish speakers, workers, renters, and low-income residents.

TIMELINE

Connect the Coastside was conducted in two phases. The first phase took place from 2014 to 2016, and included projecting future development on the Midcoast, analyzing current and future transportation deficiencies, and exploring potential transportation improvements for walking, biking, driving and riding transit. The first phase of the project included extensive community engagement efforts, such as a dedicated project website, a virtual workshop, public presentations, public workshops, and email updates. In 2017 and 2018, the project went on hiatus while a detailed roundabout analysis was conducted.

The second phase took place from 2019 to 2021 and included the preparation and release of a complete draft of Connect the Coastside, gathering extensive input and feedback from the Midcoast community, updating the plan based on that input, and presenting the final version of the plan to the community and key decision makers.

The bulk of recent Connect the Coastside outreach efforts took place from April to August 2020 and are summarized in this section. In-person outreach events were originally planned for March and April 2020, but due to the COVID-19 pandemic, the project team postponed and reimagined outreach efforts to ensure the safety of participants. The table below summarizes activities with engagement activities in bold.

Table 5: Timeline of Connect the Coastside Planning

Timeframe	Planning Progress
2014 (May – Aug)	• Consultant Contract for Connect the Coastside • **Midcoast Community Council (MCC), Technical Advisory Committee (TAC), Board of Supervisors (BOS,) Workshop**
2014 (Sep – Nov)	• TAC, MCC Workshop #1
2014 (Dec)	• Buildout Analysis & Traffic Projections Report • **Planning Commission**
2015 (Jan)	• Transportation Alternatives Memo
2015 (Mar – Apr)	• **Workshop #2 MCC, TAC, City of Half Moon Bay** • Evaluation of Alternatives to Address Buildout Deficiencies Report
2015 (Jul)	• **Board of Supervisors**
2015 (Oct)	• Alternative Development Forecast, Alternative Transportation Standards • **MCC Workshop #3**
2015 (Nov)	• Development Forecast for the San Mateo County Comprehensive Transportation Management Plan Report • **Planning Commission**
2016 (Feb – Mar)	• Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Report • **TAC, MCC, Half Moon Bay**
2016 (Apr – May)	• **Workshop #4, Planning Commission**
2017 (May)	• **Board of Supervisors**
2018 (Nov)	• **MCC Study Session**
2019 (Sep)	• **Technical Advisory Committee**
2020 (Jan)	• Connect the Coastside Public Draft • **MCC**
2020 (Jun)	• **Virtual Conversations (3)**
2020 (Jul)	• **MCC (2)** • **Youth Focus Group**
2020 (Aug)	• **Spanish Language Outreach** • Response to Inquiries Report
2020 (Sep)	• Meeting Outreach Summary Report • **MCC, ALAS Youth Group**
2020 (Oct)	• **Moss Beach Transportation Improvement Evaluation**

ENGAGEMENT ACTIVITIES

Project Website

A project website was used to share information and provide an opportunity for people to provide comments. The project website included:

- Background information on the Connect the Coastside project
- Project updates, including announcements about report releases and public meetings
- A document library with relevant documents & meeting materials
- A comment box for community members to submit comments and sign up for the CTC emailing list
- A list of Frequently Asked Questions (FAQs) with answers
- Informational materials such as factsheets and video presentations
- Next steps for the planning process
- Contact information for project staff

Email Updates & Social Media

In both phases of the project, the project team used email and social media to keep interested parties informed about Connect the Coastside and future meetings. These efforts included:

- Blast emails to interested Coastside residents, businesses and stakeholders
- Posting information on Nextdoor.com, Patch and other social media sites
- Posting short videos about the plan on Facebook

Online Surveys

Virtual Workshop

In 2014, the project team hosted a virtual workshop where interested stakeholders could submit comments. The project team identified 11 sub-areas of interest in which participants could choose to focus their comments, questions, or concerns; participants could also choose to submit general comments regarding Connect the Coastside. Comments received were preserved verbatim, for recording accuracy, and catalogued by sub-area as well as primary topic of concern (i.e., bike lanes, pedestrian access, traffic and roadway improvements).

Listening to the Midcoast Survey

In 2020, the project team participated in and reviewed the findings from the Listening to the Midcoast Mobility online survey, which was led by the Midcoast Community Council and Supervisor Horsley's office. These findings helped to inform and shape the Connect the Coastside outreach efforts.

Public Workshops & Community Meetings

The County held 7 public workshops while developing and refining Connect the Coastside. During the first phase of the project from 2014 to 2016, the County held four (4) in-person public workshops. The purpose of these workshops was to inform participants about the purpose and goals of the Plan, update participants on Plan milestones, and solicit their comments and concerns regarding known circulation and development issues in the area.

Between May and June 2020, the Connect the Coastside project team held three (3) virtual community meetings with Coastside stakeholders to share information about the draft Plan and to gather input to inform the Plan's goals and proposed projects. Each meeting included the following:

- Welcome from County District 3 Supervisor Don Horsley
- Presentation on Connect the Coastside
- Polls to learn about the participants and their transportation priorities
- Question and answer session
- Breakout rooms for small group discussions with feedback recorded by notetakers
- Report out to the larger group from the small group discussions
- Explanation of next steps for moving forward with the Plan

The virtual community meetings were conducted in English and were not translated into Spanish, as the project team heard feedback that bilingual virtual meetings with real time translation did not provide the best experience for Spanish speakers. In total, about 132 community members participated across the three public workshops. Some participated in all three workshops while others attended one or two.

Table 6: Connect the Coastside Community Meetings

Date	Topic	Format	Approximate # of Attendees
November 10, 2014	Opportunities and Constraints	In-person	60
April 15, 2015	Transportation Alternatives	In-person	100
October 22, 2015	Alternative Development-Potential Forecast and Transportation Performance Standards	In-person	n/a
April 7, 2016	Recommended Transportation and Land Use Improvements	In-person	n/a
May 30, 2020	Overview of Connect the Coastside	Virtual	40
June 15, 2020	Moss Beach, Montara	Virtual	60
June 30, 2020	El Granada, Princeton, Miramar	Virtual	32

Strategies for Promoting the Plan

County staff, members of the Midcoast Community Council (MCC) and several organizations on the Midcoast helped spread the word to community members about the Connect the Coastside Plan and the community meetings. Efforts were made to reach a broad range of community members from the Midcoast, including people who were familiar with Connect the Coastside and those who were less familiar with the project. The meetings were promoted through the following methods:

- Email invitations sent to people who expressed interest in receiving updates on Connect the Coastside
- Personalized emails from County staff to community connectors (representatives of local schools, agencies, community groups and organizations) asking them to spread the word about the meetings
- Articles in the Half Moon Bay Review and Coastside Buzz
- Posting on the County of San Mateo Nextdoor page
- Postings on the San Mateo County Planning & Building website, the San Mateo County District 3 website, and Midcoast Community Council website
- Flyers posted at post offices, apartments, and shared at Midcoast food distribution events
- Announcements at public meetings including the San Mateo County Planning Commission and the Midcoast Community Council

Public Meeting Presentations

The County has presented information on the Connect the Coastside project at numerous public meetings, including meetings of the Midcoast Community Council, the San Mateo County Planning Commission, the San Mateo County Board of Supervisors, Half Moon Bay City Council, and the Montara Water and Sanitary District Board.

Moss Beach Transportation Improvement Evaluation

The County held an evaluation meeting to study Moss Beach with Caltrans staff, three members of the Midcoast Community Council, a member of the Planning Commission, and County staff from Public Works, Planning and Building, Office of Sustainability, and Office of Supervisor Don Horsley. The goals of the meeting were to build connections among key partners, gather input on the feasibility of proposed transportation improvements, and identify critical constraints.

Technical Advisory Committee

To engage specific stakeholders, the County formed a Technical Advisory Committee. Members of the committee met six (6) times during the course of the project to provide input. Advisors included representatives from transportation, infrastructure and public safety agencies, schools, businesses and community organizations, and are identified in the acknowledgements section of this Plan. Members reviewed and helped refine plan proposals prior to public meetings and workshops.

Presentations to Community Groups

The County presented Connect the Coastside to several community groups, including Half Moon Bay Rotary Club, Sonrisas, Youth Leadership Institute youth group, and the Ayudando Latinos A Soñar (ALAS) youth group.

Youth Group Meetings

The project team collaborated with the Youth Leadership institute (YLI) and Ayudando Latinos A Soñar (ALAS) to host two (2) virtual Zoom meetings to connect with youth who live, work, and/or visit the Coastside, hear about their transportation experiences and needs, and ensure that their needs are incorporated in CTC. At the meetings, the County provided an overview presentation on Connect the Coastside, and youth participants shared their perspectives on what's working well and what is challenging when it comes to transportation, which Plan ideas are most important, how to improve access to their favorite places, and their vision for transportation on the coast. Youth also responded to several poll questions about how they get around. Biking, walking and transit improvements were most important to this group who rely on family members and friends to get around since they cannot drive.

Outreach Method	Views and Responses
July 7, 2020 YLI Youth focus group	7 youth and 2 staff members from YLI
September 16, 2020 ALAS Youth Group	14 youth and 2 staff members from ALAS

Spanish Language Outreach

To hear from monolingual Spanish speakers who live and work on the Midcoast, the project team used a combination of strategies to provide information about the Plan and ask for input. Outreach was designed to make participation easy and accessible by reaching people in places they already visited and by providing multiple options for participation. The Spanish language options for learning about Connect the Coastside and providing feedback included:

- A Spanish language Connect the Coastside **webpage**
- Seven (7) Spanish language Connect the Coastside **factsheets**
- A 20-minute recorded **presentation** in Spanish that provides an overview of Connect the Coastside and was posted to the Spanish language CtC webpage
- Short (2-3 minute) **videos** in both Spanish and English posted to the ALAS and Coastside Hope Facebook pages, describing Connect the Coastside and asking for input
- A **paper survey** in Spanish and English distributed through the Coastside Hope front desk and food distribution, ALAS food distribution, Pillar Ridge, and El Granada Elementary School lunch service
- **Phone and online surveys** conducted in Spanish

These efforts were successful in reaching a number of people, including:

Outreach Method	Views and Responses
20-minute recorded presentation	14 views
ALAS Facebook Spanish video & comments	137 views, 2 comments
Coastside Hope Spanish video & comments	77 views
Coastside Hope English video & comments	92 views
Paper Survey	25 returned, 16 in Spanish and 9 in English
Online Survey	8 responses
Phone Survey	6 phone surveys completed in Spanish

WHAT WE HEARD

Community input was instrumental in shaping Connect the Coastside. While under development, the Plan evolved in several ways based on the input from the community.

Early community feedback that shaped the Plan included input regarding the proposed development forecast and transportation standards for the project. There was significant stakeholder feedback focused on the level of potential residential and non-residential development identified in the Maximum Buildout Forecast. This led to formulation of the Constrained Development Forecast. Stakeholders were concerned with the high level of potential development that may exceed the transportation, water and wastewater systems capacity. Commenters were also concerned that the current transportation standards might lead to projects that did not fit the context of the Midcoast, leading to the development of alternative evaluation standards.

In general, commenters were supportive of projects that create safer places to walk, bike, and take transit. These include:

- The Multimodal Parallel Trail
- Marked crossings of Highway 1 with other safety features like median islands and lights
- Safe routes to school
- Bicycle lanes and bicycle parking
- Shelters and benches at bus stops
- More frequent and express buses

Commenters were more divided on the Plan's recommendations to improve driving. There were different opinions about the following:

- Whether intersections should have roundabouts, traffic signals or any control
- Providing additional parking and where it should be located
- The roadway design treatments that are best for the Midcoast

Several commenters focused feedback on specific locations in Moss Beach, including the proposed recommendations for Carlos Street. Others had concerns about the transportation and land use data used to inform the Plan's recommendations and wanted to know more about the impact of projects on traffic congestion. Several commenters were concerned about inconsistencies between the recommendations in the draft Plan and other planning efforts, like Plan Princeton and the Highway 1 Safety and Mobility Study Phases 1 and 2. Many commenters were concerned about how long it would take to implement projects and wanted to know more about how projects would be funded. A few commenters were interested in the land use policy recommendations and suggested making them mandatory.

Changes Made To Plan In Response to Community Input

Below are some of the ways the project team updated the Plan to respond to community input:

- Added a Constrained Development Forecast to project the amount of potential development in the Midcoast to the year 2040 to provide additional information and context and for use in recommended program development.
- Proposed and applied new transportation performance standards that avoid widening Highway 1 as a solution to deficiencies.
- Ensured consistency with ongoing and past planning efforts (like Plan Princeton and the Highway 1 Safety and Mobility Study Phases 1 and 2), including updating maps and project descriptions.
- Added information on the history of Connect the Coastside, including past outreach efforts.
- Revised the Plan's goals and included more context to address environmental sustainability, accessibility for all ages and abilities, emergency response, and evacuation.
- Updated and/or changed specific project recommendations.
- Expanded the implementation chapter to include a phased approach for project implementation, including a description of the community engagement process that will need to accompany certain projects during future project-level implementation.

VISION, GOALS, AND OBJECTIVES

Connect the Coastside's vision, goals, and objectives reflect the requirements of the County General Plan and LCP Policies, feedback from Midcoast stakeholders, and findings of the Highway 1 Safety and Mobility Study (Phases 1 and 2). Connect the Coastside's vision statement represents a shared image of what Midcoast stakeholders hope the transportation system looks like in the future. The Plan's goals set the general direction toward achieving the vision, and objectives are measurable steps that contribute to reaching each goal.

VISION

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.

GOALS AND OBJECTIVES

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.
- Object 1.2: Consider the impact on emergency response and evacuation when designing and implementing 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: Implement a mandatory lot merger program that would reduce development potential by merging adjacently-owned substandard lots.
- Objective 2.4: Evaluate the potential 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, reduce roadway traffic, promote environmental sustainability, and ensure people of all ages and abilities can travel.

- Objective 3.1: Propose pedestrian projects that address safety and circulation concerns, while meeting relevant performance standards.
- Objective 3.2: Propose bicycle 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.
- Objective 3.4: Propose pedestrian, bicycle, and transit projects that include age-friendly improvements.

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

- Objective 4.1: Integrate community input into Plan proposals.
- Objective 4.2: Select improvements to avoid damage of Midcoast habitat and maintain visual resources.

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.

3.Planning Context

ACTORS, PARTNERS, AND STAKEHOLDERS

Although San Mateo County has led the effort to develop Connect the Coastside, there are many agencies that can implement its recommendations. Actors are agencies that have responsibility or ownership for improving or maintaining infrastructure and services in the Midcoast. Partners can work with actors to help implement projects, and often have resources to support implementation. Stakeholders have an interest in the outcomes of implementation. Collaborators may play a wide range of roles, including:

- Owning the land where Connect the Coastside recommends projects
- Overseeing the construction of recommended projects
- Playing a part in permitting improvements
- Providing recommended transportation services
- Providing money to help pay for projects
- Providing support or guidance to ensure plan goals are met

ACTORS

San Mateo County

San Mateo County serves as the local government for the unincorporated communities of Montara, Moss Beach, El Granada, Miramar, and Princeton, as well as the unincorporated rural lands in the Midcoast. Multiple San Mateo County departments will play a role in implementing the recommendations in Connect the Coastside, including the Departments of Planning and Building, Public Works, and Parks, and the Office of Sustainability. The Planning and Building Department will play a part in moving forward and championing CTC recommendations, as well as project permitting. The Department of Public Works builds and maintains county roads and infrastructure and manages the county's rights-of-way. The Parks Department operates county parks and trails, including Fitzgerald Marine Reserve, Pillar Point Bluff, Quarry Park, Mirada Surf, and Devil's Slide Trail. The Office of Sustainability works to improve sustainability in the county, including through alternative transportation and greenhouse gas emission reductions, and maintaining the County's Active Transportation Plan and Climate Action Plan.

Caltrans

Caltrans is the State's transportation agency and the manager of Highways 1 and 92. Many of the projects contained in Connect the Coastside rely on active partnerships between the County of San Mateo and Caltrans. Caltrans must approve all modifications within the Highway 1 and Highway 92 rights of way. Caltrans may also construct many of the improvements within the right of way envisioned in Connect the Coastside. Caltrans manages competitive state and federal funding sources for improvements, as well. The County will need Caltrans' assistance for design, planning, approval, funding and constructing these improvements.

SamTrans

Connect the Coastside will rely on a partnership with SamTrans, San Mateo County's transit agency. 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 identify further improvements to Coastside service.

California State Parks Departments

The California State Parks Department provides recreational opportunities at beaches, parks and nature preserves on the Coastside. Some of the improvements in Connect the Coastside, including segments of the Coastal Trail and recreational parking lots, and will be located in state parks. Park managers can obtain grant funds, secure entitlements, conduct environmental review, construct, maintain, and manage these Connect the Coastside improvements.

San Mateo County Harbor District

Pillar Point Harbor, adjacent to El Granada and Princeton, is under the San Mateo County Harbor District's jurisdiction. The County can partner with the Harbor District on several Connect the Coastside recommended projects, including improvements to the Coastal Trail.

Granada Community Services District

The Granada Community Services District provides a number of services to the unincorporated areas of El Granada, Princeton, Princeton-by-the-Sea, Clipper Ridge, and Miramar, including parks and recreation services. The District is currently working on a park plan for the Burnham Strip parcel in El Granada, which creates opportunities for the County and the District to coordinate the Burnham Park planning with planning for the Multimodal Parallel Trail.

Partners

National Parks Service

Rancho Corral de Tierra was recently made part of the Golden Gate National Recreation Area under the management of the National Parks Service. Several improvements (Highway 1 bike lanes, bike parking, the Parallel Trail and the California Coastal Trail) proposed in Connect the Coastside will improve access to Rancho Corral de Tierra. Ongoing coordination with the National Parks Service will be important during the implementation of these projects.

San Mateo County Flood and Sea Level Rise Resiliency District (FSLRRD or OneShoreline)

The San Mateo County Flood and Sea Level Rise Resiliency District (https://resilientsanmateo.org/) is an agency that addresses sea level rise, flooding, coastal erosion, and large-scale stormwater infrastructure improvements through integrated regional planning, project implementation, and long-term maintenance.

City of Half Moon Bay (HMB)

San Mateo County will coordinate with the City of Half Moon Bay on key transportation investments and management strategies. Half Moon Bay is an important partner in alleviating the traffic congestion on Highways 1 and 92 that can hamper coastal access and affect quality of life for residents. Half Moon Bay can collaborate with the county, plan, design and fund improvements, including obtaining grant funding for its own projects.

San Mateo County Transportation Authority (TA)

The San Mateo County Transportation Authority administers the proceeds from Measure A, which is a voter-approved half-cent sales tax that funds many different transportation-related projects and programs. The County can apply to the Transportation Authority for Measure A funds to help pay for many of the recommended improvements in the Connect the Coastside plan.

City/County Association of Governments, Congestion Management Agency (C/CAG-CMA)

The City/County Association of Governments (C/CAG), is a Joint Powers Authority whose membership includes San Mateo County and its 20 cities. C/CAG works on multiple issues that affect quality of life in general and is the Congestion Management Agency (CMA) for San Mateo County. As the Congestion Management Agency, C/CAG prepares a Congestion Management Program every two years. This program identifies future transportation needs and incorporates projects intended to ease and control congestion. The Congestion Management Program also includes priority allocations of federal, state and regional monies for City and County transportation projects. The Congestion Management and Environmental Quality Committee (CMEQ) provides guidance and recommendations 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 to the C/CAG Board of Directors. The committee provides.

The Metropolitan Transportation Commission (MTC)

The Metropolitan Transportation Commission is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area. MTC collaborates with a network of other public agencies to help support the streets, roads, highways, transit systems and other transportation resources that help millions of people get to where they need to be. MTC and the Association of Bay Area Governments (ABAG) lead the preparation of Plan Bay Area 2050, which includes the regional transportation plan and allocates and prioritizes a variety of transportation funding.

California Coastal Commission (CCC)

The California Coastal Commission implements the California Coastal Act and oversees development within the Coastal Zone. Much of the Connect the Coastside study area is located within the Coastal Zone and the jurisdiction of the California Coastal Commission. The County's Local Coastal Program (LCP), which is certified by the Coastal Commission, includes a policy requiring preparation of the Connect the Coastside plan. The LCP includes policies that address roads and transit, promoting coastal access and protecting coastal resources. These policies will be used in evaluating transportation projects within the Coastal Zone.

State Coastal Conservancy

The Coastal Conservancy is a State agency that protects coastal resources and helps the public to enjoy them. Coastal Conservancy has been tasked by the state legislature to help complete the Coastal Trail. The Conservancy pursues this mandate in part by awarding grants to public agencies and nonprofit organizations to acquire land rights, and to develop, operate, or manage lands for public access to and along the coast.

STAKEHOLDERS

Midcoast Community Council (MCC)

Midcoast Community Council 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, 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.

Midcoast Residents, Workers & Visitors

The improvements proposed in Connect the Coastside are intended to service Midcoast residents, workers and visitors. The perspectives and preferences of the people who live, work, and visit on the Midcoast were integral to shaping the final plan and recommendations. The implementation of Connect the Coastside recommendations will require the continued input and involvement of stakeholders.

POLICY CONTEXT

Connect the Coastside was shaped by previous planning efforts and will help inform future planning on the Coastside. Several existing laws, 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 list of potential infrastructure improvements recommended in Connect the Coastside was compiled from a variety of sources, including several past and concurrent planning efforts. These planning efforts include Plan Princeton, the Highway 1 Safety and Mobility Study Phases 1 and 2, the Highway 1 Congestion and Safety Improvement Project, the Coastside Access Study, SamTrans Coastside Transit Study, and others. Additionally, some of the proposed infrastructure improvement recommendations were developed during the Connect the Coastside process.

There are several concurrent planning efforts that will also influence transportation on the Midcoast. These projects include Reimagine SamTrans, the Unincorporated San Mateo County Active Transportation Plan, Plan Princeton, County Climate Action Plan, Granada Community Services District Burnham Strip park plan, and the Half Moon Bay Bicycle and Pedestrian Master Plan. The Connect the Coastside project team has been working to make sure the various plans are appropriately coordinated and complement each other.

Once Connect the Coastside is adopted by the Board of Supervisors, the recommended projects will need to be incorporated into local, regional, and state transportation plans to secure funding. These plans include:

- San Mateo County Transportation Authority Strategic Plan
- San Mateo County Congestion Management Plan
- San Mateo County Road Fund
- San Mateo County Road Design Standards
- County of San Mateo’s Five-Year Capital Improvement Plan (CIP)
- Plan Bay Area
- State Transportation Improvement Program

Following adoption of Connect the Coastside by the Board of Supervisors, a priority action for County staff will be to integrate Connect the Coastside projects in local and state transportation plans and develop needed amendments to the LCP. The table below provides a timeline of key planning and policy efforts.

Table 7: Planning and Policy Efforts Timeline

Year	Plan or Policy
1978	• Montara, Moss Beach, El Granada Community Plan
1980-Present	• San Mateo County Local Coastal Program and amendments
2001	• San Mateo County Trails Plan
2002	• Midcoast Recreational Needs Assessment
2010	• Highway 1 Safety & Mobility Study Phase 1 • California Coastal Trail Midcoast Pillar Point to Mirada Surf
2011	• San Mateo County Congestion Management Program 2011 (C/CAG)
2012	• CA Coastal Trail MCC Concept Plan • Highway 1 Safety and Mobility Improvement Study Phase 2
2013	• San Mateo Local Coastal Program • San Mateo County Traffic Impact Study Requirements
2014 (May – Aug)	• Plan Princeton Existing Conditions
2015 (Mar – Apr)	• San Mateo County Coastside Access Study
2015 (Aug)	• Highway 1 Congestion and Safety Improvement Project
2018 (Apr)	• Caltrans Transportation Concept Report SR1 South • Caltrans D4 Bike Plan
2018 (May)	• Half Moon Bay Bicycle and Pedestrian Master Plan
2018 (Aug)	• SamTrans Coastside Transit Study
2020	• Half Moon Bay Local Coastal Land Use Plan Update
Ongoing	• C/CAG Bike/Ped Plan Update • Plan Princeton • Unincorporated San Mateo County Active Transportation Plan • Caltrans District 4 Pedestrian Plan • San Mateo County Sustainable Streets Plan • County Climate Action Plan • Southern Skyline Boulevard Ridge Trail Extension (SFPUC) • Reimagine SamTrans • Plan Bay Area 2050

Summary of Relevant Plans & Policies

California Coastal Act

Adopted in 1976, the California Coastal Act is a state law that directs the planning and management of the California coastal zone, the statewide stretch of coastline along the Pacific Ocean. The Coastal Act establishes a number of foundational goals that aim to protect the coastal environment and ensure maximum public access to the coast. The California Coastal Commission and local governments are responsible for carrying out the Coastal Act and for coastal management. The implementation of Coastal Act policies is accomplished primarily through the preparation of Local Coastal Programs (LCPs), which when completed by cities and counties located in the coastal zone, allow local governments to administer the Coastal Act within their jurisdiction, subject to certain retained powers held by the Coastal Commission.

Local Coastal Program

San Mateo County's Local Coastal Program (LCP) is used to guide development in the coastal zone while protecting coastal resources. Any and all development projects in the Coastal Zone require either a Coastal Development Permit or an exemption from Coastal Development Permit requirements. For a permit to be issued, the development must comply with the policies of the LCP. Before any of the transportation infrastructure proposals in Connect the Coastside are constructed, they must be evaluated and found to be consistent with the policies of the Local Coastal Program and authorized by a Coastal Development permit.

In 2012, the Board of Supervisors adopted significant amendments to San Mateo County's Local Coastal Program regarding the Midcoast. One of these amendments was Policy 2.53, which called for the preparation of a "Comprehensive Transportation Management Plan" to address the cumulative impacts of Midcoast development. Connect the Coastside is designed to fulfill the requirements of Policy 2.53 and inform the County's implementation of several other components of the Local Coastal Program, including the public works and new development components. Some of the standards proposed in Connect the Coastside, such as the Delay Index, need to be incorporated into the Local Coastal Program through an amendment.

San Mateo County General Plan

The San Mateo County General Plan guides decision making and the physical development of the unincorporated areas of the county. The General Plan contains several chapters that contain policies related to Connect the Coastside, including:

- Vegetative, Water, Fish and Wildlife Resources
- Park and Recreation Resources
- Visual Quality
- Urban Land Use
- Water Supply
- Transportation
- Housing
- Energy and Climate Change

The General Plan has 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.

Montara-Moss Beach-El Granada Community Plan

This plan sets goals and policies for the growth of Montara, Moss Beach, and El Granada. The Community Plan contains relevant policies on circulation, road standards, trails, conservation and open space, and community appearance.

Caltrans Transportation Concept Report (TCR) for SR 1 South

The purpose of the Transportation Concept Report is to evaluate current and projected conditions along state routes and communicate the vision for development in each Caltrans District over a 25-year planning horizon. TCRs are part of Caltrans System Planning. The TCR for SR 1 South is from San Mateo/Santa Cruz County to the Golden Gate Bridge. The TCR's strategies include supporting Connect the Coastside, completing the California Coastal Trail, implementing new Traffic Operations Systems including variable message signs, improving coastal community safety and mobility with consistent roadway edges, pedestrian crossings, and monitoring and planning for sea level rise.

Highway 1 Safety and Mobility Study

The Highway 1 Safety and Mobility Improvement Study Phases 1 and 2 are community-based transportation studies with recommended improvements to Highway 1 in the unincorporated communities of Princeton, El Granada, Miramar, Montara, and Moss Beach. The Phase 1 effort was funded through a Caltrans Community-Based Transportation Planning Grant in partnership with the Local Government Commission. The Plan was developed through an extensive community process that included a focus groups, community workshops, walk audits, and a design charette. Many of the recommendations in Connect the Coastside are from these studies.

Unincorporated San Mateo County Active Transportation Plan

The Unincorporated San Mateo County Active Transportation Plan provides a framework to improve active transportation conditions for people walking and biking throughout unincorporated county communities, and includes proposed projects, programs, and policies to do so. The Plan prioritizes projects in unincorporated areas across the Bay Side and Coast side. As of December 2020, the Draft Plan was available for review, with a Final Plan is anticipated to be released and submitted for approval by the County Board of Supervisors in 2021.

Plan Princeton

Plan Princeton is a study being conducted by San Mateo County to update the land use plan for Princeton. The project will focus on the area west of and including Highway 1, between Pillar Point Harbor and Moss Beach. The purpose of this project is to make a comprehensive update to the policies, plans, and standards regulating the Princeton study area. The Connect the Coastside project team has coordinated with the Plan Princeton project team to ensure consistency between the two plans.

Reimagine SamTrans

In summer 2019, SamTrans launched “Reimagine SamTrans” an effort to undergo a comprehensive operational analysis (COA) to identify the challenges in the current bus system using data and public engagement and identify opportunities to improve SamTrans service. The overarching goals of Reimagine SamTrans are to improve the transit experience, grow new and more frequent ridership, and build SamTrans’ efficiency as a mobility provider. Recommendations from Reimagine SamTrans could include route, system, and/or vehicle size changes, improved connectivity with regional providers, new service models or pilot programs, and more. The effort provides an opportunity for Midcoast residents to share their transit needs and concerns directly with SamTrans and identify potential solutions. SamTrans put a hold on the effort due to the COVID-19 public health crisis and plans to restart the project in 2021.

Granada Community Services District Burnham Strip Park Plan

The Granada Community Services District has developed a Preliminary Burnham Park Plan for the creation of a park on the Burnham Strip in El Granada between Highway 1 and Obispo Road, with plan submission targeted for the first quarter of 2021. The Connect the Coastside project team will continue to coordinate with the Granada Community Services District on creating connections between the future park and the multimodal parallel trail and addressing parking needs.

Plan Half Moon Bay

In summer 2013, the City of Half Moon Bay initiated a process to update its General Plan, Local Coastal Program, and Zoning Ordinance. At their October 20, 2020 regular meeting, the City Council voted to approve the Half Moon Bay Local Coastal Land Use Plan Update and submit it to the California Coastal Commission for certification. The Land Use Plan contains the primary policies governing land use and development within the city limits, including policies on transportation.

4. Existing and Projected Land Use Conditions

BACKGROUND

The way we use land has a major impact on traffic and the way people travel. A key objective of Connect the Coastside is to identify the land use policies and transportation improvements that can be implemented to mitigate the traffic impacts of future growth (per Local Coastal Program Policy 2.53). In order to do this, the project team had to engage in several steps:

First, the project team evaluated **existing conditions** to understand current development patterns and the associated traffic impacts. The existing conditions analyses clarifies what is already a traffic problem or concern that might need to be addressed now, and that might be made worse in the future as the population and number of visitors to and within the Study Area grows.

Next, the project team **projected the future development potential** of the Study Area by creating buildout forecasts. This is an estimate of how more residential units and commercial square footage could be expected in the future. The buildout forecast is an input to a travel demand model, which can be used to project future transportation conditions, forecast the need for and potential effectiveness of transportation projects and infrastructure improvements, and identify the traffic impacts of land use development.

This chapter describes existing land use conditions and the future projected land use and development conditions that serve as the backdrop for the transportation analysis. The processes summarized here are 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).

EXISTING LAND USE AND DEVELOPMENT

Land uses in the unincorporated Connect the Coastside study area include a mix of residential, commercial, agriculture, industrial, institutional, recreational, and airport. Most land in the unincorporated Connect the Coastside study area is reserved for Open Space and Agriculture. Many of the traffic generating uses (residential, commercial, industrial, and recreation) in the unincorporated study area are concentrated in the Midcoast Planning Area along Highway 1.

Map 5: Midcoast and Unincorporated Study Area General Plan Land Uses

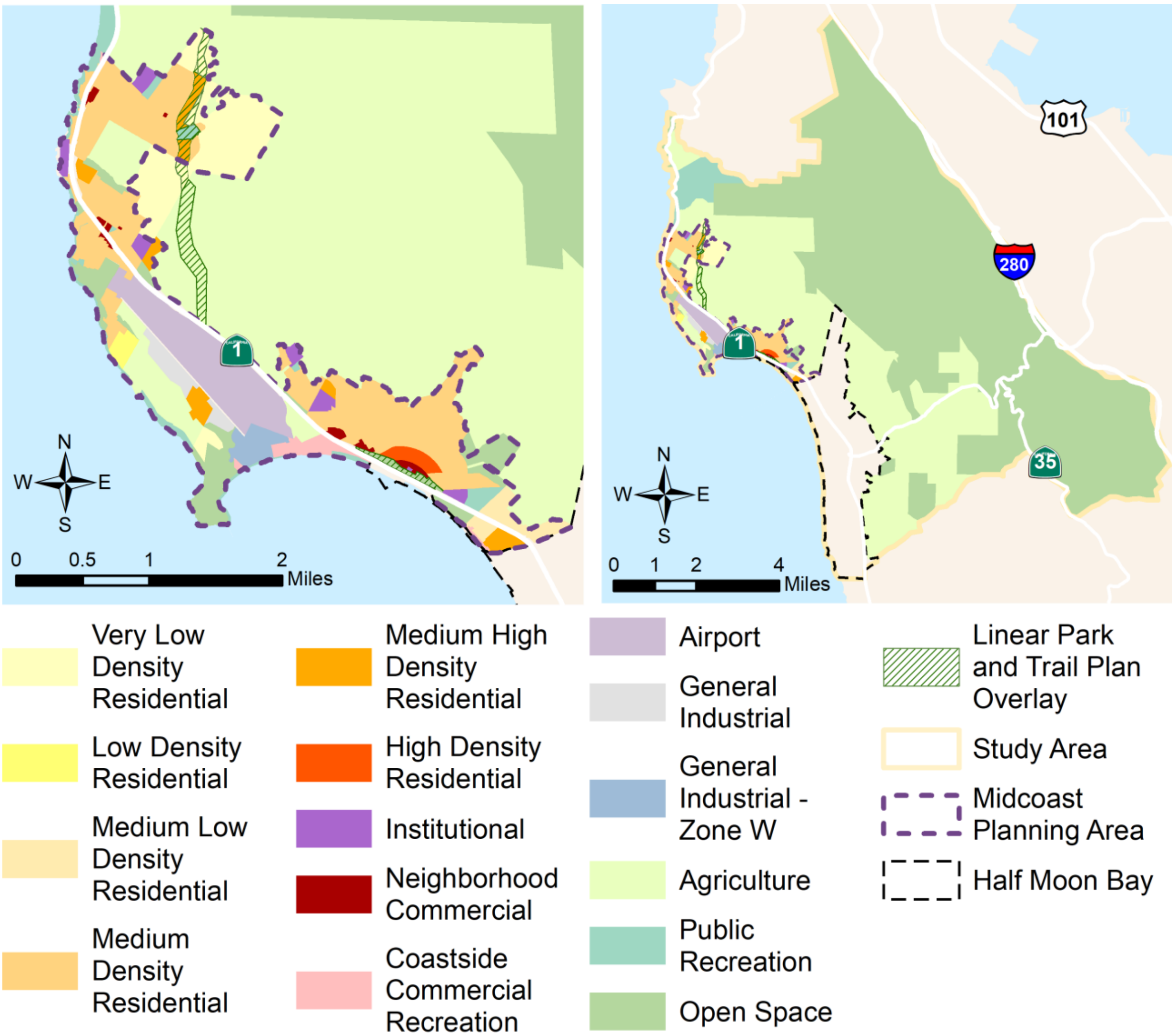


Table 8: Study Area General Plan Land Uses (Unincorporated)

Land Use Type	Percentage
Open Space	65.14%
Agriculture	27.81%
Residential	3.27%
Recreation	2.29%
Airport	0.72%
Linear Park and Trail Plan Overlay	0.31%
Industrial	0.25%
Institutional	0.16%
Commercial	0.06%

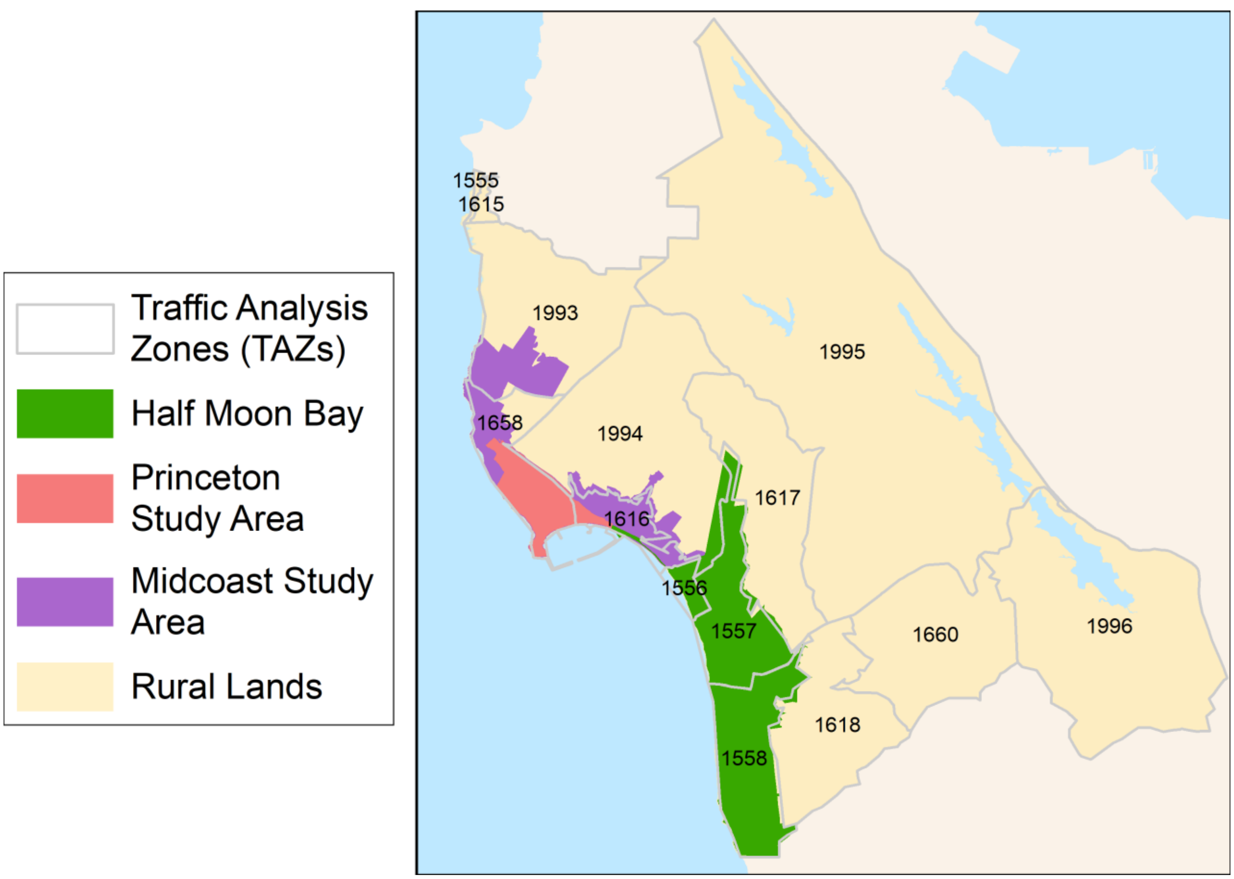
PROJECTED LAND USE AND DEVELOPMENT

Maximum Buildout Forecast

The project team developed a **Maximum Buildout Forecast (MBF)** in 2014 to use as an input for the travel demand model and make estimates about future traffic conditions on the Midcoast. The buildout analysis identifies the theoretical maximum amount of development that could occur if all available land is developed to its full potential under current regulations. In other words, **buildout is the planned endpoint in a community's growth**. LCP Policy 2.53 specifically requires that Connect the Coastside analyze the traffic impacts of projected new development at LCP buildout, which means using the current land use policies and zoning rules of Local Coastal Program to calculate buildout.

The Maximum Buildout Forecast looked at both residential and non-residential uses in order to create a holistic estimate about future traffic conditions. The forecast included four subareas: the Midcoast; Princeton; Rural Lands; and Half Moon Bay. The City of Half Moon Bay was included in the forecast because development in Half Moon Bay can impact traffic in the unincorporated Midcoast and Highway 92 project area. The boundaries of the development analysis were determined by the Traffic Analysis Zones (TAZ) used by the travel demand model.

Map 6: Subareas and Traffic Analysis Zones



The Maximum Buildout Forecast was created using the following information:

- Existing parcel data
- Existing zoning
- Natural features data
- Public lands data
- County Assessor data: existing land use and (to the extent available) existing building square footage, assessed building and land value, and property ownership

The development analysis also included assumptions to estimate:

(1) the amount of existing development, for parcels for which this data was not included in the Assessor's data file, and
(2) the amount and type of future development projected on "opportunity sites."

Opportunity sites were identified for each subarea. Opportunity sites are parcels that are undeveloped or underutilized and which likely be developed in the future. Assumptions followed those of the San Mateo County Midcoast LCP Update and the Plan Princeton effort, where relevant. Development assumptions for both residential and non-residential development were refined based on what is allowed by zoning, the typical density and intensity of existing development, and regulatory constraint factors.

Table 9: Residential Development in 2014 and at Maximum Buildout

Subarea	Existing (2014) Housing Units	Maximum Buildout Housing Units
Half Moon Bay	4,072*	5,258
Princeton	264	384
Midcoast	3,961	6,558
Rural Lands	76	152
Total	**8,373**	**12,352**

*409 existing mobile homes were not accounted for in the November 2014 Existing Conditions Report.

Table 10: Non-Residential Development in 2014 and at Maximum Buildout Forecast

	Existing (2014)		Maximum Buildout	
Subarea	*Non-Residential Sq. Ft.*	*Total Jobs*	*Non-Residential Sq. Ft.*	*Total Jobs*
Half Moon Bay	3,668,093	4,904	5,097,000	6,616
Princeton	1,205,000	1,112	2,276,00	1,987
Midcoast	958,200	933	1,161,100	1,212
Rural Lands	-	82	-	82
Total	**5,831,293**	**7,032**	**8,533,906**	**9,897**

Constrained Development Forecast

There are many existing constraints that make achieving the Maximum Buildout Forecast unlikely due to policies that restrict development in the Study Area. In response to feedback from stakeholders, a **Constrained Development Forecast (CDF)** was created in 2015 to project development until the year 2040, which is consistent with other local and regional forecasts. As part of this effort, a modified Maximum Buildout Forecast was created to account for updated data and assumptions, including corrections to data on existing and proposed development and reconsideration of employment density assumptions. The CDF used the modified Maximum Buildout Forecast as a starting point, and then took into account the following potential constraints:

- San Mateo County LCP Policy 1.23, which limits residential development in the unincorporated Midcoast to 40 units per year, and
- The market demand for new housing and non-residential development in Half Moon Bay based on the market analysis conducted in 2014 for the Half Moon Bay General Plan Update.

The CDF also considered Half Moon Bay Measure D, which limits residential growth to 1 percent annually in Half Moon Bay and 1.5 percent Downtown. For Half Moon Bay, the zoning-based forecast resulted in a lower level of residential development than would be allowed under Measure D. Thus, zoning would be the most limiting factor for residential development in Half Moon Bay.

Table 11: Residential Constrained Development Forecast for 2040

Subarea	Existing (2014) Single-family Units	Existing (2014) Multi-family Units	Existing (2014) Total Housing (Single + Multifamily) Units	Projected 2040 Housing Units
Half Moon Bay	3,493	988	4,481*	5,335
Princeton	250	13	263	289
Midcoast	3,679	282	3,961	4,975
Rural Lands	76	-	76	152
Total	**7,498**	**1,283**	**8,781**	**10,750**

*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 units.

Table 12: Non-Residential Constrained Development Forecast for 2040

	Existing (2014)		Projected 2040	
Subarea	*Non-Residential Sq. Ft.*	*Total Jobs*	*Non-Residential Sq. Ft.*	*Total Jobs*
Half Moon Bay	1,597,200	5,334	1,928,680	5,704
Princeton	583,500	1,385	1,579,900	3,437
Midcoast	655,600	1,084	811,400	1,467
Rural Lands	-	82	-	82
Total	2,836,300	7,885	4,319,980	10,690

The Constrained Development Forecast represents a more realistic projection of future development to the year 2040 than the Maximum Buildout Forecast. However, many factors will contribute to the amount of actual development that will take place by 2040, and the Constrained Development Forecast represents just one estimate of future conditions.

Development between 2015 and 2020

Since 2014, 102 additional units were constructed in the unincorporated Midcoast, averaging 17 new housing units each year. This is well below the limit of 40 new housing units in Midcoast required by LCP 1.23 and below the amount of yearly new units predicted by the Constrained Development Forecast. The amount of non-residential development in the unincorporated Midcoast is also less than the amount predicted by the Constrained Development Forecast for that period of time.

Table 13: Annual Development from 2015 to 2020

Year	New Midcoast Housing Units Constructed	New Midcoast Non-Residential Sq. Ft. Constructed
2015	12	6,318
2016	10	3,980
2017	22	-
2018	25	-
2019	16	-
2020	17	2,286
Total	**102**	**12,584**

City of Half Moon Bay Land Use Plan Update

In 2020, the City of Half Moon Bay (HMB) updated their Local Coastal Land Use Plan (LCLUP). The updated HMB LCLUP includes a development analysis that forecasts development for both the year 2040 and for maximum theoretical buildout. The HMB LCLUP development analysis differs from the CTC development analysis in the following ways:

- The HMB LCLUP development analysis accounts for the new policies in the updated HMB Land Use Plan
- The CTC development analysis uses 2014 as a starting year, while the HMB development analysis uses 2018 as a starting year
- The two development analyses use different assumptions to estimate future development

While policies in the updated plan will impact the amount and location of future development, overall the HMB LCLUP maximum theoretical buildout forecast estimates a 1,315 unit decrease from what the previous 1996 Land Use Plan anticipated. HMB LCLUP policies that impact future development include:

- A Town Center concept that concentrates future development in a walkable core area with a diverse mix of land uses, including businesses, shops, housing, and public spaces. Concentrating new development in the Town Center ensures that future homes and jobs will generate less traffic and other impacts.
- A workforce housing overlay that creates affordable housing sites for agriculture, specified churches, public schools, and State parklands. The Workforce Housing Overlay is intended to reduce vehicle trips by providing housing closer to places of employment on the coast.
- Several substantially developed Planned Developments were re-designated to reflect their actual land uses.

Table 14: City of Half Moon Bay 2020 Local Coastal Land Use Plan Development Forecast Summary

	Existing (2018)	2040 Projection	Maximum Theoretical Buildout
Housing Units	4,830	5,612	7,051
Jobs	5,379	6,053	7,684

Source: https://www.half-moon-bay.ca.us/DocumentCenter/View/3153/Appendix-B_Buildout_HMB-LCLUP_2020-Final-CC-Draft_Sept-2020

5. Transportation Performance Measures and Standards

COMMON PERFORMANCE MEASURES

This section describes common ways to measure transportation system performance, including current methods and standards and Connect the Coastside's proposed revisions. The performance standards are important because "what gets counted counts." The performance standards show what is considered deficient now and what would be considered deficient in the future. They also influence where solutions are needed and what those solutions could be.

LEVEL OF SERVICE

A common way to measure **roadway performance is to use Level of Service or "LOS"**. LOS generally describes operating conditions of a road from the perspective of the driver and is described in terms of speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.[5]

LOS looks at the level of congestion during a **peak travel period compared to free-flow conditions.** Peak periods are when highest number of people are often traveling the most, like the:

- weekday morning commute (7:00 – 9:00 am),
- weekday evening commute (4:00 – 6:00 pm), and the
- weekend recreational peak period (10:00 am – 2:00 pm),

LOS is measured in letter grades where "A" represents free-flow conditions and "F" represents extremely long delays. LOS can be applied to both intersections and roadway segments.

LOS definitions for **signalized and unsignalized intersections** are shown in Table 15.

Table 15: Intersection Level of Service Definitions

Level of Service	Signalized Intersection Average Delay (sec/veh)	Unsignalized Intersection Average Delay (sec/veh)	Description
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: Highway Capacity Manual, Transportation Research Board, 2000.
Notes: *Worst Approach Delay (in seconds per vehicle) for Unsignalized Intersections

[5] Highway Capacity Manual, Transportation Research Board, 2000

Roadway segment level of service is based upon the peak traffic volume (v) relative to the capacity of the roadway or intersection (c). "Capacity" is the maximum traffic flow that a roadway can accommodate under normal conditions. Roadway segment level of service is expressed as a "v/c ratio" and the amount of capacity filled by traffic volumes determines the level of service.

$$\frac{Peak\ Traffic\ Volume\ (v)}{Roadway\ Capacity\ (c)} = \frac{v}{c}\ Ratio$$

Roadway segment level of service thresholds are different depending on the roadway type:

- A two-lane highway is a roadway with one lane for use by traffic in each direction.[6]
- A multi-lane highway is one which has more than one lane in each direction.

On a **two-lane highway**, a driver must use the opposing lane of traffic to pass a slower vehicle. As traffic volumes increase, the ability to pass a slower car goes down and platoons of vehicles are formed, increasing the delay experienced by motorists. Therefore, for two-lane highways, the volume and capacity used to calculate the v/c ratio **combines both directions**: the capacity used in Connect the Coastside for two-lane roads is 2,800 vehicles per hour (1,400 vehicles per lane per hour in each direction).[7]

On a **multi-lane highway**, the roadway level of service criteria is for **each direction of travel separately**. The capacity used in Connect the Coastside for multilane highway segments is 2,200 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 in each direction. The specific roadway LOS criteria for two-lane and multi-lane highways are shown below in Table 16.

Table 16: Roadway Level of Service Definitions

	Two-Lane Highways			Multi-Lane Highways		
Level of Service	**% Time Delay**	**Max v/c ratio[1]**	**Average Travel Speed[2]**	**% Time Delay**	**Max v/c ratio[3]**	**Average Travel Speed[2]**
A	30	0.00 – 0.04	54	30	0.00 – 0.30	50
B	45	0.04 – 0.16	51	45	0.30 – 0.50	50
C	60	0.16 – 0.32	48	60	0.50 – 0.70	50
D	75	0.32 – 0.57	46	75	0.70 – 0.84	49
E	>75	0.57 – 1.00	41	>75	0.84 – 1.00	47
F	100	> 1.00	< 41	100	> 1.00	< 47

Source: San Mateo County Congestion Management Program, 2011 with thresholds based on Highway Capacity Manual

Notes:

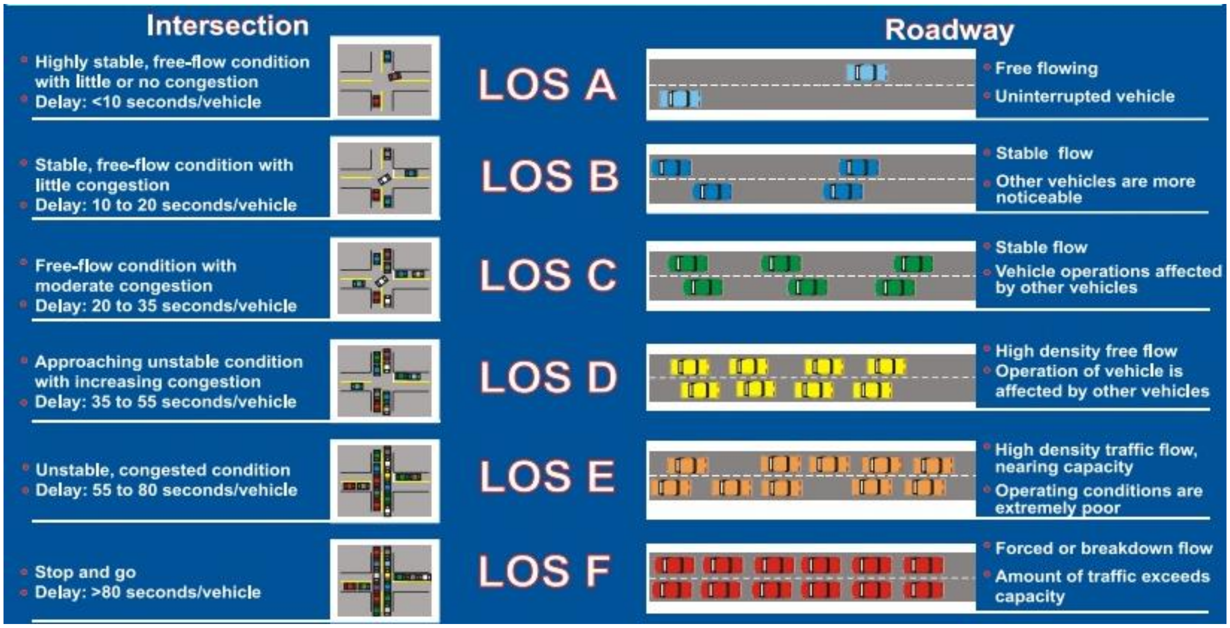
1. Ratio of flow rate to an ideal capacity of 2,800 passenger cars per hour in both directions.
2. Average travel speed of all vehicles for highways with design speed 60 mph; for highways with lower design speeds, reduce speed by 4 mph for each 10-mph reduction in design speed below 60 mph; assumes that speed is not restricted to lower values by regulation.
3. Ratio of flow rate to an ideal capacity of 2,200 passenger cars per hour per lane.

[6] Defined by the San Mateo County Congestion Management Program

[7] Defined volumes are from the 1994 Highway Capacity Manual

Below is an example of what level of service can look like for each letter.

Figure 4: Intersection and Roadway Level of Service Visualization



Graphic courtesy of: https://policymanual.mdot.maryland.gov/mediawiki/index.php?title=File:LOS_Graphic.jpg

In order to **improve level of service, generally traffic volumes need to decrease, or roadway capacity needs to increase.** Increasing the capacity of a roadway usually means adding lanes to a road, removing obstacles to travel (like cars waiting to turn by adding turn lanes), changing signal timing so more cars can get through at a certain location, or improvements like lane widening to make it easier for cars to go faster.

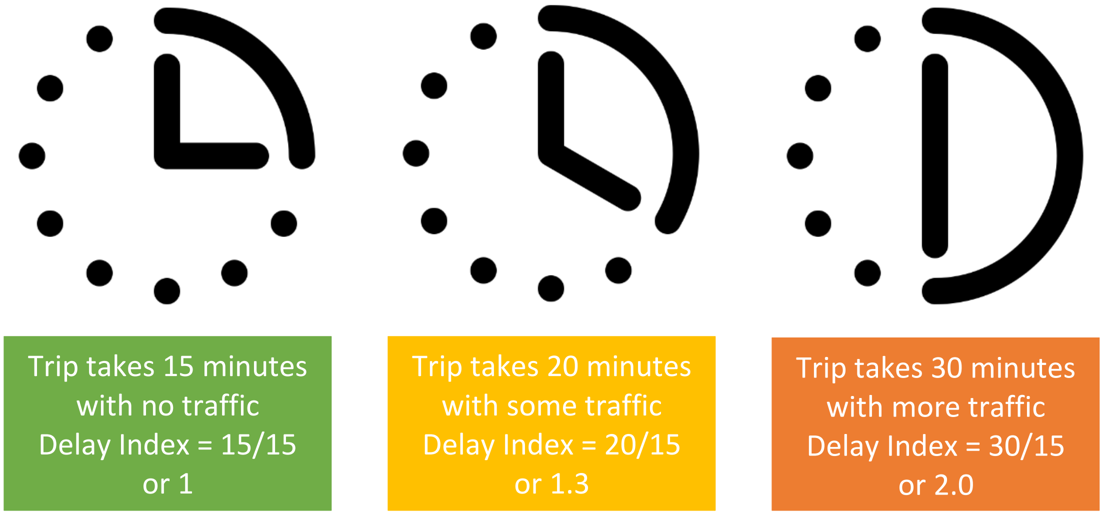
Delay Index

Level of service does not fully explain traffic operations, and improving LOS often results in projects out of step with other goals – like sustainability and minimizing impacts to the environment. Delays in travel can occur anytime there is a change in capacity; for example, a car having to wait to take a turn or a lane dropping. Another method to measure roadway performance from the perspective of the driver is to use a **delay index**, which is defined as the ratio of the peak period travel time on a corridor to the free-flow travel time.

$$\frac{Peak\ Period\ Travel\ Time}{Free\ Flow\ Travel\ Time} = Delay\ Index\ Value$$

A delay index focuses on travel times and the user experience for people driving, rather than capacity of a roadway. For example, the delay index value would be 2.0 if a trip takes 10 minutes during a morning commute time (peak period), instead of 5 minutes during the middle of the night (typically a free flow travel time). The graphic on the next page illustrates different delay index values for a trip.

Figure 5: Illustration of Delay Index



Clock faces created by Alexander Wiefel from Noun Project

Using a Delay Index allows for more flexibility and creativity in transportation solutions than Level of Service because it is not dictated by the roadway capacity.

VEHICLE MILES TRAVELED

Vehicle miles traveled or VMT measures the amount of driving instead of the impact on drivers. One car traveling 10 miles would be 10 VMT, and four cars traveling 10 miles each would be 40 VMT. California Senate Bill 743 (SB 743) initiated an update to the California Environmental Quality Act (CEQA) Guidelines to change how agencies evaluate transportation impacts under CEQA. As of July 1, 2020, agencies analyzing the transportation impacts of new projects must now use vehicle miles traveled (VMT) instead of level of service (LOS) for determining significant traffic impacts from projects. Measuring vehicle miles traveled better captures the collective impact of driving, such as greenhouse gas emissions, impacts to air quality, and access to goods and services, which are critical to addressing the State's goals.

San Mateo County is working to develop and adopt its own VMT thresholds of significance (the level at which the impacts of a project are deemed significant under CEQA) and has produced interim guidelines.[8] Projects in Connect the Coastside would be subject to this analysis during the implementation process. Transportation projects that make it easier to walk, bicycle, or take transit would typically be screened out from a VMT analysis.

[8] https://publicworks.smcgov.org/documents/traffic-impact-analysis-requirements

Other

Level of service and the delay index do not directly address how well a road performs for other modes of travel, such as those who are walking, bicycling, or taking public transit. Measuring vehicle miles traveled can indicate how well an area supports those who choose not to drive (for example, an area with low VMT typically means that there are other travel options available) but does not allow for a clear direction of how to improve conditions for those not driving. Agencies have taken different approaches to better understand conditions and performance for other modes. Examples include:

- 2010 Highway Capacity Manual Multimodal Level of Service – Method for evaluation multimodal level of service to estimate LOS for auto, bus, bicycle, and pedestrian level of service in urban contexts.
- Pedestrian Environmental Quality Index (PEQI)– First developed by the San Francisco Department of Public Health, the PEQI is an observational tool used to assess the quality of the physical pedestrian environment and provides a score. The PEQI considers things like sidewalk connectivity, lighting, shade, and areas to rest.
- Bicycle Environmental Quality Index (BEQI) – Similar to PEQI, the BEQI is an observational survey that looks at indicators of whether an area is supportive of bicycling, such as availability of a bikeway, pavement type, traffic volume, number of vehicle lanes, and others.
- Public Transit – Public transit operators use a variety of different metrics to measure system performance and make changes, including overall ridership, passengers per mile or hour, miles between accidents, and on-time performance.

None of these have been incorporated into local regulatory frameworks to date.

CURRENT PERFORMANCE STANDARDS

The following policies include performance standards that apply to roads in the San Mateo County Midcoast:

- San Mateo County Congestion Management Program[9]
- San Mateo County Traffic Impact Analysis Requirements[10]
- San Mateo County's Local Coastal Program[11]

San Mateo County Congestion Management Program

The City/County Association of Governments (C/CAG) is the Congestion Management Agency for San Mateo County and is responsible for the countywide Congestion Management Program (CMP). The CMP includes strategies to respond to future transportation needs, including addressing congestion. CMP legislation requires the use of level of service to measure roadway performance and sets standards for how well all roadway segments (including highways) in San Mateo County can perform before being considered deficient:

- Roadway segment – Level of Service E
- Intersection – Level of Service E

San Mateo County Traffic Impact Analysis Requirements

The County of San Mateo Department of Public Works requires that traffic and circulation impacts of proposed developments must be analyzed and defines the minimum acceptable design intersection level of service is "C," with no individual movement operating at less than LOS D. The requirements state that on occasion, LOS D may be allowed for peak periods.

In 2020, the County adopted interim criteria to determine transportation-related environmental impacts under the California Environmental Quality Act using vehicle miles traveled (VMT). Projects that exceed VMT thresholds based on their project type may have a significant impact that would require mitigation; the baselines are:

- For residential projects – 13.60 home-based trip VMT per resident
- For office – 16.65 home-based work trip per VMT per worker

Transportation projects must have a 0-net increase in Total VMT.

---

[9] San Mateo County Congestion Management Program, 2019, San Mateo City/County Council of Governments (C/CAG) (https://ccag.ca.gov/programs/transportation-programs/congestion-management/)

[10] San Mateo County Traffic Impact Analysis Requirements, 2013 and 2020, County of San Mateo, Department of Public Works, Roadway Services (https://publicworks.smcgov.org/documents/traffic-impact-analysis-requirements)

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

San Mateo County Local Coastal Program

The County's Local Coastal Program (LCP) Transportation policy 2.43 states that when considering roadway expansion, roadway level of service "D" is acceptable for peak periods, and Level of Service "E" is acceptable during recreational peak periods. Since the language in the LCP is related to roadway expansion, the LOS referenced is for roadway segment; however, it has been interpreted that this standard applies to intersection performance as well.

Current Performance Standards Summary

The roadway standards that apply to Midcoast roads are summarized in the table below: Local Coastal Program (LCP) standards apply to Highways in the coastal zone and San Mateo County standards apply to County-owned roads.

Table 17: Existing Midcoast Roadway Standards

Application	Performance Measure	Threshold for Deficiency on Weekday Peak	Threshold for Deficiency on Weekend Peak
Signalized Intersection	Level of Service	C (SMC) or D (LCP)	C (SMC) or D (LCP)
Unsignalized Intersection	Level of Service	C (SMC) or D (LCP)	C (SMC) or D (LCP)
Roadway Segment	Level of Service	D (LCP) or E (C/CAG)	E (LCP)

PROPOSED PERFORMANCE STANDARDS

The current performance standards are aimed at improving conditions from the perspective of a driver. For example, improving level of service requires things that increase the capacity of the roadway and increase vehicle speeds -- things like widening roads to add travel lanes.

In the early stages of Connect the Coastside, the project team presented improvements aimed to address current performance standards (LOS). Suggested improvements included things like widening Highway 1, which would further impact natural environments and take away space for other roadway users, including pedestrians and cyclists. These solutions were rejected by stakeholders because they did not align with the community's vision and transportation goals. Therefore, the project team proposed updated performance standards designed to better describe the transportation system's performance in the Midcoast.

Using a different performance standard that better aligns with Midcoast stakeholder values allows for a more diverse set of transportation solutions; which are described further below.

INTERSECTION PERFORMANCE STANDARD

Most intersections within the study area are unsignalized minor approach roads intersecting with Highways 1 and 92, and most are controlled by stop signs for minor approaches or are uncontrolled. Therefore, any deficiency or required mitigation due to intersection level of service should balance the need of the minor street traffic with the flow of traffic along the highways. To address this, the **proposed intersection standard** for the Midcoast requires **unsignalized intersections to meet a peak-hour signal warrant to be considered deficient.** This helps ensure that the volume of traffic using the minor approach is large enough to warrant additional intersection control and the associated disruption to traffic flow along Highway 1.

Example of a minor and stop-controlled intersection at Highway 1 and 8th Street in Montara; 8th street is the "minor and stop-controlled" street.

Roadway Performance Standard

There are no alternate routes to Highways 1 or 92 with comparable roadway capacity, so any deficiencies using roadway level of service as a standard would lead to highway widening. Highways widening is not in line with the Midcoast vision and is largely infeasible due to environmental constraints.

To avoid traffic mitigations that require adding highway lanes, the **proposed roadway standard** for the Midcoast is the **delay index**. Using the delay index allows for a range of mitigations which can be focused on specific trouble spots and allow different thresholds for different types of corridors.

Connect the Coastside proposes the maximum acceptable Delay Index is 2.0 for the Highways 1 and 92 corridors in the Study Area during the peak periods (weekday AM and PM, and weekend midday). 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 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. The higher standard allows for increased delay to motorists but encourages improvements that provide mobility across multiple modes. This is in accordance with statewide and County General Plan Complete Streets policies that encourage provision of capacity for all modes of travel.

Table 18: Proposed Midcoast Roadway Performance Standards

Application	Performance Measure	Threshold for Deficiency
Signalized Intersection	Level of Service	LOS C with no individual movement operating at worse than LOS D[1]
Unsignalized Intersection	Level of Service	Same as signalized <u>and</u> must meet a peak-hour signal warrant[2]
Roadway Segment that serves vehicles only	Delay Index	Greater than 2.0 (Example: 10 minutes to drive with no congestion would be deficient if it took over 20 minutes to drive during peak commute times)
Roadway segment with adjacent Class 1 or Class II Bikeway for at least 80% of length	Delay Index	Greater than 3.0 (Example: 10 minutes to drive with no congestion would be deficient if it took over 30 minutes to drive during peak commute times)
New land use or transportation projects	Vehicle miles traveled	Final guidelines to be developed by San Mateo County in collaboration with C/CAG[3]

[1]As defined by the San Mateo County Traffic Impact Study Requirement and San Mateo County Local Coastal Program
[2]Signal warrant: https://dot.ca.gov/programs/safety-programs/camutcd/traffic-manual-ch9
[3]Interim guidelines for application are available at: https://publicworks.smcgov.org/documents/traffic-impact-analysis-requirements

Other Modes

Data on other modes of travel is limited, making measurements both challenging to do and less useful in identifying deficiencies. In addition, to meet local and state goals related to advancing equity and addressing climate change, common sense improvements to increase access for walking, bicycling, and transit are critical. Connect the Coastside recommends using the following guidelines to identify improvements related to parking, walking, bicycling, and transit.

Parking

The Midcoast is an important regional recreational destination and recreational parking can increase public access and help prevent overflow parking into residential areas. Connect the Coastside used weekend peak-period parking occupancy to assess parking need and aims that beach access points should have no more than 95% parking occupancy in the associated recreational parking facility during the recreational peak. Recreational destinations include Gray Whale Cove State Beach, Montara Beach, and Surfer's Beach.

Walking

Providing safe and comfortable walking facilities and crossings can increase the overall number of people who choose to walk and create a more accessible community. Some areas will have lower demand for walking, such as roadways near vacant land. Other areas, such as commercial corridors and residential streets, could be accessed more frequently by people walking. Hotspots for pedestrian activity are key destinations such as beaches, commercial areas, view-points, and transit stops.

In general,

- Areas with low demand do not need large infrastructure improvements and could be addressed through trail connections and shared-use paths.
- Areas with pedestrian-oriented land uses (e.g., commercial strips) and hot spots (e.g., beach access point) need greater intersection and street segment improvements.
- Locations with medium to high pedestrian demand and at hot spots need safe pedestrian crossings that 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.

Bicycling

People of different ages and abilities prefer different types of bikeway facilities. A family with young children riding to school may only be comfortable on a bike path that is completely separated from vehicles, whereas an experienced cyclist commuting to work might prefer an on-street facility. In general, the greater the speeds and volumes of a roadway, the more important it is to provide a bikeway of high quality that is separated from roadway traffic. The National Association of City Transportation Officials (NACTO) recommends that bike lanes are most helpful on streets with posted speed limit greater than or equal to 25 mph, while on streets with higher speed limits of 35 mph or more, treatments that provide greater separation between bicycles and vehicular traffic should be considered, such as left-side bike lanes, buffered bike lanes and bike paths.[12]

Bicycle parking should be provided at all key destinations, including beach access points, parks, trailheads, schools and central business districts. The San Mateo County Zoning Regulations[13] states that “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.” This regulation will help increase the amount of bicycle parking provided as a part of future development. The County’s LCP includes policies requiring bicycle parking in all Coastal Zone parking lots, including specific requirements for several coastal access points.

Transit

In July 2019, SamTrans launched *Reimagine SamTrans*, which will study SamTrans services in-depth, including strengths, challenges, and community needs. Ultimately, the project will recommend a new Service Policy Framework, such as new or re-routed bus lines and goals for ridership and use that are tailored to the areas of lower-density development, such as the Midcoast. Since new performance standards will be established as part of Reimagine SamTrans and current transit ridership is low on the Midcoast, Connect the Coastside recommends a goal of increasing transit ridership to alleviate traffic congestion, reduce greenhouse gas emissions, and promote healthier communities. In order to do so, Connect the Coastside focuses on creating a more comfortable waiting experience and recommends that all bus stops have a paved waiting platform to support those with disabilities, and that all bus stops should have a bench, while heavily used bus stops in areas susceptible to inclement weather conditions should have a full shelter.

[12] https://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/conventional-bike-lanes/
[13] 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

6. Existing and Projected Transportation Conditions

BACKGROUND

As described in the Existing and Projected Land Use Conditions chapter (page 36), Connect the Coastside aims to identify the land use policies and transportation improvements that can be implemented to mitigate the traffic impacts of future growth (per Local Coastal Program Policy 2.53).

In order to determine transportation impacts, first the project team evaluated **existing conditions** and collected data (like vehicle counts) to assess traffic conditions. The existing conditions analyses clarifies what is already a traffic problem or concern that might need to be addressed now, and that might be made worse in the future as the population and number of visitors to and within the Study Area grows.

In order to project future transportation impacts, the **maximum buildout forecast described in the land use chapter was inputted into a travel demand model**. In San Mateo County, C/CAG in partnership with the Valley Transportation Authority (VTA) is responsible for developing and maintaining the countywide travel demand model. The model is updated every 5 years and projects conditions 25 years into the future. Although the C/CAG-VTA transportation model does not include regional growth projections beyond 2040, and the maximum buildout forecast will not occur by then, the maximum buildout forecast was used to assess traffic impacts, consistent with the directives of LCP Policy 2.53.

The outputs of the travel demand model were further processed using additional transportation software to **identify the traffic impacts of the maximum buildout forecast scenario**. The project team could then compare existing conditions to projected future conditions to understand what type of transportation and land use solutions might be needed.

Based on the findings of the data analysis and community's vision of the future of transportation on the Midcoast, the project team **recommended different ways to measure transportation performance** (page 51) and then identified **solutions to address the impacts** (Chapter 7).

This section provides an overview of existing transportation conditions, existing performance, and the future transportation impacts associated with projected development. The processes summarized here are described in more detail in the "Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Report" (March 2016), "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).

EXISTING TRANSPORTATION CONDITIONS

DRIVING

As described in the introduction, driving is the primary mode of transportation in the Study Area. The main roadway corridors are:

- Cabrillo Highway (Highway 1), in the north-south direction and
- San Mateo Road (Highway 92) in the east-west direction.

Highways 1 and 92 are owned and managed by Caltrans and provide regional connections to San Francisco (north), San Mateo (east) and Santa Cruz (south). Highways 1 and 92 are largely one lane in each direction, with limited areas for passing, left-turn pockets for turning, and right-turn lanes. 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 roadways, such as Beach Way in Moss Beach. Many local roadways do not have center-lane striping or edge striping.

The roadway network serves to connect people and goods within the Midcoast and to the rest of the region, with Highways 1 and 92 operating at higher speeds, accommodating traffic and goods movement, and other roadways serving neighborhoods with typically lower speed traffic. The roadway network connects to nearly all Midcoast resources, including beaches, marine reserves, harbors, surf breaks, parks, businesses and other destinations. There are no existing formal bicycle or bus facilities as part of the roadway network, so both share roads with motorists.

Many Coastside residents feel that the traffic during peak hours and during nicer weather on weekends is challenging, and that conditions have gotten worse over time. The project team collected vehicle count data in 2014 on weekdays and weekends for Connect the Coastside to calculate existing performance standard deficiencies (Existing Transportation Performance Standard Deficiencies on page 71). Vehicle volumes at key locations along Highway 1 have not changed significantly when compared to 2017 and 2019 counts (see Appendix D).

Map 7: Roadway Network

PARKING

Vehicular parking on the Midcoast ranges from on-street parking in neighborhoods, along Highway 1, with some off-street parking lots for recreational use, and some parking provides by local businesses that are open to public use (see Table 19: Study Area Parking Inventory on page 60).

The San Mateo County Coastside Access Study conducted a recreational parking inventory and use survey near park sites along the coast between Devil's Slide (north) and El Granada (south). When designated lots fill to capacity, visitors often park on the roadside, which is legally permitted (as long as the vehicle is outside of the travel way). These vehicles were counted as "overflow" parking to the designated nearby parking area.

The study found an estimated 396 parking spaces in designated parking areas. During the data collection period, a total of 423 parked vehicles were observed in the designated and overflow parking areas – or a 107% occupancy rate. 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 lots are not paved and lack striped spaces, leading to inefficient use. Some private parking lots are required to provide parking for public use, but do not necessarily have signs showing visitors that parking is available.

Table 19: Study Area Parking Inventory

Lot Name	Area	Spaces	Public / Private	Notes
Devil's Slide Trail 1	North of Montara	15	Public	Free
Devil's Slide Trail 2	North of Montara	9	Public	Free
Gray Whale Cove State Beach	North of Montara	72	Public	Free
Gray Whale Cove Surplus	North of Montara	35	Public	Free
McNee Range State Park	North of Montara	7	Public	Free
Martini Creek	North of Montara	42	Public	Free
Montara State Beach	North of Montara	8	Public	Free
La Costanera	North of Montara	40	Public / Private	Restaurant parking after 5 pm
Point Montara Lighthouse Hostel	Montara	25	Private	Hostel guests only
Montara Water & Sanitary District	Montara	15	Private	MWSD only
Fitzgerald Marine Reserve	Moss Beach	40	Public	Free
Church of Jesus Christ LDS	Moss Beach	170	Private	Church only
Moss Beach Distillery	Moss Beach	43	Public / Private	Restaurant parking. 14 spaces public.
Harbor Lot A	Pillar Point and HAF Airport	322	Public	Free/Permit
Harbor Lot B	Pillar Point and HAF Airport	52	Public	Free
Harbor Lot C	Pillar Point and HAF Airport	147	Public	Permit
Boat Launch and Trailer Lot	Pillar Point and HAF Airport	135	Public	Fishermen only
Harbor Commercial Fishermen Lot	Pillar Point and HAF Airport	40	Public	Permit
Pier	Pillar Point and HAF Airport	20	Public	
Launching Facility	Pillar Point and HAF Airport	18	Public	
Harbor Village Lot	Pillar Point and HAF Airport	488	Public / Private	
Pillar Point Inn	Pillar Point and HAF Airport	12	Private	
Barbara's Fish Trap	Pillar Point and HAF Airport	37	Private	
Half Moon Bay Brewing Company (SE)	Pillar Point and HAF Airport	43	Private	
Half Moon Bay Brewing Company (NW)	Pillar Point and HAF Airport	50	Private	
Half Moon Bay Yacht Club	Pillar Point and HAF Airport	14	Private	Open to public when club is closed
Nasturtium	Pillar Point and HAF Airport	12	Private	
American Legion	Pillar Point and HAF Airport	27	Private	
Mezza Luna	Pillar Point and HAF Airport	37	Private	
Pillar Point Recreation Area	Pillar Point and HAF Airport	35	Public	
Jean Lauer Trailhead	Pillar Point and HAF Airport	10	Public	
West Point Ave & Stanford Lot	Pillar Point and HAF Airport	20	Public	
Scenic Overlook	Highway 92	12	Public	
Lower Crystal Springs Reservoir	Route 35	18	Public	

Source: Appendix A of Connect the Coastside Buildout Analysis and Projections Final Report, November 20, 2014

Walking

Network

There are many areas where people already walk. Stakeholders shared a desire to walk more to Midcoast destinations. Key destinations are largely spread along Highway 1 and are primarily near the coast. Destinations include beaches, trails, viewpoints and surfing areas, as well as businesses and services, such as the Post Office.

The pedestrian network generally consists of intermittent sidewalks along local roads, roadway shoulders, and trails, occasionally connected with a marked crosswalk. The pedestrian network is discontinuous: in some locations, sidewalks require maintenance, while in others sidewalk or trail facilities are absent altogether. In places without pedestrian facilities, pedestrians walk along paved or unpaved shoulders or in the roadway. Given the higher traffic speeds, coastal access, and the many community-serving destinations along Highway 1, the lack of pedestrian accommodation causes safety concerns and discourages people from walking. It also conflicts with the County's policy on Complete Streets and fails to comply with guidelines for paths of travel to key locations (including transit stops) per the Americans with Disabilities Act of 1990 (ADA).

MIDCOAST MULTI-MODAL PARALLEL TRAIL

The Parallel Trail was conceptualized in the Highway 1 Safety and Mobility Improvement Study (Phase 1) and is envisioned to be a bicycle and pedestrian path alongside Highway 1, spanning from Montara and connecting with the Naomi Patridge Trail in Half Moon Bay. The Parallel Trail will allow Midcoast residents and visitors of all ages and abilities to access neighboring communities, town centers, schools and recreational destinations on foot or bike.

The first section of the Parallel Trail, from Mirada Road north to Coronado Street, has been funded and implementation should begin in 2021. 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. By providing residents the opportunity to walk and bicycle, congestion on the highway should improve.

To learn more, visit the County's website or see more documents associated with County PLN 2015-00325.

Map 8: Key Destinations and Pedestrian Demand

RIDGE TRAIL

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. The trail would help extend the Bay Area Ridge Trail, which would provide 100 miles of continuous trail from Marin County to southern San Mateo County.

Currently, there are limited and discontinuous shoulders and no pedestrian facilities (sidewalks and crosswalks) or bikeways on Highways 92 and 35. In order to fully connect the trail, a safe crossing of Highway 92 is needed.

Crossings

There are three marked pedestrian crossings within the Study Area at signalized intersections of Highway 1 and local streets: Coronado Street, Capistrano Road (S), and just south of the Tom Lantos Tunnel to access the Devil's Slide Trail. There is an uncontrolled pedestrian crossing at Virginia Avenue in Moss Beach. Existing crossings at signalized intersections are just two parallel transverse lines, a design that has been shown to have lower visibility for drivers than alternatives, such as continental crosswalks (also known as zebra striping). There are no marked or controlled (e.g., at a stop sign or signal) crossings of Highway 1 in the communities of Miramar and Montara. The existing crossings are located near 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. Caltrans has posted pedestrian crossing signs in a few of these high activity locations along Highway 1 throughout the Midcoast, but with no pavement markings.

Every intersection is considered a legal crossing for pedestrians, even if unmarked (e.g., no crosswalk). Visitors to coastal beaches who park east of Highway 1, including on the eastern shoulder, must cross Highway 1 without marked crossings or sidewalks with little or no signage to alert drivers of people crossing. Similarly, on Highway 92, during seasonal spikes in commercial activity, many people cross the highway to access businesses and activities with no marked crossings. Despite these unsafe conditions and high weekend traffic volumes, many people walk to and cross Highways 1 and 92, and several collisions have occurred as a result[14].

[14] From 1/1/14 to 12/31/18, there were 4 pedestrian-involved collisions and 7 bicycle-involved collisions on Highways 1 and 92. Of the 4 pedestrian-involved collisions, 3 were crossing in a legal crosswalk at an intersection and 1 was crossing not in a crosswalk. Data from SWITRS GIS Map, Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley. 2021. https://tims.berkeley.edu/

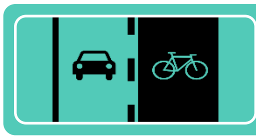
Parking lot with no marked crossing of Highway 1 to reach Gray Whale Cove

Marked pedestrian crossing of Highway 1 at Virginia Avenue

Bicycling

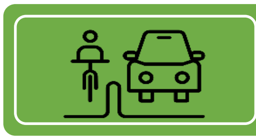
The Caltrans Highway Design Manual categorizes bicycle facilities into four classes:

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 bike lanes, with or without painted buffer

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



Class IV: Separated bike lanes or cycle-track, with a physical separation between vehicle traffic and bikeway

Icons courtesy of The Noun Project. Class I icon "Bike and Pedestrian Path" created by Bence Bezeredy from Noun Project. https://thenounproject.com/

There are few dedicated bicycle facilities with some local roads signed as Class III Bike Routes without sharrows. Some bicyclists use Highway 1 as an intercommunity route along the coast, since it is the only direct and continuous north-south connection. Highway 1 has paved shoulders (typically 8-feet wide) in some areas, but no defined bikeway. There are safety concerns for bicyclists along Highway 1 due to high vehicle speeds and parked cars often blocking the shoulder. Intersections along Highway 1 typically have wide cross-sections and large corner radii that are designed for fast-moving vehicles and turns, and generally make conditions more inaccessible and uncomfortable for both bicyclists and pedestrians. Some avid cyclists use Highway 92 as one of a handful of potential coastal access routes between eastern and western San Mateo County. Highway 92 has 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, some with high speed traffic.

There is also a lack of bicycle parking at recreational and other destinations within the Study Area. Some public short-term bicycle parking is available at Pillar Point Harbor, Sam's Chowder House, and at a few of the County parks.

The lack of bicycle facilities along key routes, through intersections, and availability of bicycle parking, conflicts with the County's Complete Streets Policy and exacerbates vehicle congestion, especially during commute hours and peak summer tourist times. People on the Midcoast have few safe options to get around other than by car.

TRAILS AND COASTAL ACCESS

The Midcoast has an extensive trail network and recreational areas, making it an important regional and local destination. Coastside recreational areas include several parks, beaches, scenic viewpoints, tidepools and other attractions along the coastline. The California Coastal Trail (CCT) a scenic, recreational public trail system envisioned to be continuous along the California coast is a popular resource. The CCT is intended to primarily serve people walking, but also accommodates other users, including cyclists, wheelchair users, and equestrians on some trail segments. Existing portions of the CCT run in a north-south direction west of Highway 1 north of Montara, in Princeton, Moss Beach and Miramar. Existing portions of the CCT range from Class I facilities to unclassified dirt paths in various sections along the coastline. 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.

Trails can and do serve as transportation facilities, especially because the roadway network does not support people walking or bicycling as well as it could. When recreational destinations are accessed by foot, pedestrians often walk directly there via local streets, parking lots, or, at times, privately-owned property (for example, where owners allow users to access public beaches).

Pillar Point Bluff

TRANSIT

San Mateo County Transit District Services

Existing transit service is provided by the San Mateo County Transit District, which operates SamTrans, the regional bus service; and RediCoast, a paratransit service. Fixed route transit services follow a specific route, time table, and pick up at pre-designated stops. Dial-a-ride are demand-responsive services, where transit services are available to pick-up at specific locations and times under certain conditions of eligibility.

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 (time between buses). Transit service has continued to change due to the COVID-19 pandemic, as transit agencies face reduced ridership and additional protocols to ensure passenger safety. Some services, like the City of Pacifica's Devil's Slide Ride shuttle, all school-day only routes (e.g., Route 18), and Route 118 have been temporarily suspended.

Table 20: Transit Services Serving the Study Area

Route	Description	Peak Headway (min)	Off Peak Headway (min)	Span of Service (weekdays listed first)
SamTrans 17 (fixed route)	Linda Mar Park & Ride (Pacifica) – Pescadero	30	60 (weekdays) 120 (weekends)	5:30 AM – 9:30 PM
SamTrans 18 (fixed route)	Montara – Half Moon Bay	30	N/A	7:00 AM – 9:20 AM 3:15 PM – 4:20 PM
SamTrans 110 (fixed route)	Linda Mar Park & Ride – Daly City BART	60	60	5:45 AM – 11:00 PM 6:30 AM – 9:00 PM
SamTrans 112 (fixed route)	Linda Mar Park & Ride – Colma BART	60	60	6:00 AM – 9:45 PM 8:00 AM – 8:45 PM
SamTrans 294 (fixed route)	Pacifica – Miramontes Point	60	120	5:30 AM – 9:00 PM
SamTrans FLX Pacifica (on demand)	Linda Mar and Southern Pacifica	45	N/A	6:15 AM – 6:50 PM
RediCoast (on demand)	Devil's Slide - Santa Cruz County			6:30 AM – 8:00 PM 8:00 AM – 5:00 PM

SamTrans Route 17 is the primary transit service serving the Midcoast. It runs weekday service connecting Pacifica (just north of the Study Area) to Montara, Moss Beach, El Granada, Half Moon Bay, and Pescadero. Weekend service ends at Miramontes Point, before reaching Pescadero. Route 17 operates along Cypress Avenue, Airport Street, and Capistrano Road.

SamTrans 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.

SamTrans Route 294 is a regional express bus that operates along Highway 92, connecting Half Moon Bay to the Hillsdale Caltrain station in San Mateo. This line operates all days of the week and is an important regional link and could serve as a connection for visitors to the coast.

SamTrans Routes 110 and 112 connect from the Linda Mar Park and Ride to BART stations. This requires a transfer for Midcoast residents from Route 17 to the Linda Mar Park and Ride to these routes.

SamTrans FLX Pacifica service offers a mix of fixed and flexible routing in the Linda Mar neighborhood of Pacifica. The shuttle travels clockwise serving bus stops from the Linda Mar Park & Ride along Highway 1 to Crespi Drive, Fassler Avenue, Terra Nova Boulevard, Oddstad Boulevard and back to Linda Mar Park & Ride. Shopping centers, parks, community centers, libraries, schools and other key destinations can be accessed riding the FLX. FLX picks up riders directly for their homes or other locations within one-half mile of the service route.

SamTrans OnDemand was a pilot microtransit service that launched on May 6, 2019 and served a five square-mile area around the Linda Mar community in Pacifica. It replaced the FLX Pacifica shuttle through May 2020. Trips were requested via smartphone application, enabling 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 was available between 6:15 AM and 6:30 PM. OnDemand ultimately served fewer overall passengers, operated more vehicle revenue miles, garnered more customer complaints and required higher operating costs. The pilot analysis determined that OnDemand was not as effective for school service or first/last mile trips.

RediCoast is a paratransit service that provides curb-to-curb transportation for disabled citizens living between Devil's Slide to the north and the border of Santa Cruz County to the south. Travel outside of these areas is possible by pre-arranging with other paratransit providers (e.g. Redi-Wheels for eastern San Mateo County, Outreach for Santa Clara County, etc.). Citizens qualify for RediCoast services under certain accessibility conditions.

Route 17 bus stop at California Avenue and Etheldore Street in Moss Beach

Transit Stop Amenities

Most bus stops are identified by a pole with sign in the study area. Some are lacking ADA accessible boarding platforms, and very few have benches or shelters.

SamTrans Ridership Trends

In 2018, SamTrans completed the Coastside Transit Study,[15] which studied bus service on the coastside, recommended new ways to serve residents, and identified future avenues of study. The study reported that 96-99% of Midcoast households own cars, indicating there is a very low "transit-dependent" population and thus a lower propensity to ride transit. The Study found that ridership declined on all coastside routes in 2017 compared to 2016. Route 17 had the largest drop in ridership with a 28 percent drop in the ridership per service hour. Route 294 was the least productive at 7.1 riders per service hour, followed closely by the FLX Pacifica route at 8 passengers per service hour. Route 110 is among the most productive in terms of ridership per service hour at 27 riders per service hour.

---

[15] SamTrans Coastside Access Study webpage. Available at: https://www.samtrans.com/Planning/Planning_and_Research/Coastside_Transit_Study.html (Accessed 12/1/20)

Cabrillo Unified School District Student Transportation

At one point, the Cabrillo Unified School District provided school bus service for students traveling to Farallone View Elementary School; the District currently and will continue to provide transportation services to students with special needs. Providing dedicated bus service is costly to the District, especially with budget cuts and adapting to distance learning during the COVID-19 pandemic. The District anticipates reduced demand for transit services as it recently changed its approach to school choice, allowing more residents to attend the school closer to their home and student enrollment is projected to decrease by 347 students[16] over the next five years.

Discussion

Currently, none of the fixed route transit routes have enough ridership to meet SamTrans minimum ridership goals, nor for provision of amenities at stops.[17] Midcoast 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. Others requested coordination between SamTrans and Cabrillo Unified School District to ensure transit serves student needs, including to reach after-school activities, and is safe for students with additional staff or chaperone support. 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 could 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.

---

[16] Projected enrollments 2020 to 2025, November 12, 2020 Cabrillo Unified School District Board Presentation by Thomas Williams of Enrollment Projection Consultants

[17] SamTrans 2016 Title VI Program, p.G10 (p.95 of 270). Criteria is stops with more than 200 passengers boarding per day for shelters and benches.
(https://www.samtrans.com/Assets/TitleVI/SamTrans+2016+Title+VI+Program+Complete.pdf)

EXISTING TRANSPORTATION PERFORMANCE STANDARD DEFICIENCIES

In order to identify potential improvements, the project team first assessed existing conditions based on the current and recommended performance standards (see Chapter 5 for definitions). This section describes the findings of this analysis and existing deficiencies.

INTERSECTION LEVEL OF SERVICE

Data, including vehicle volumes and turning movements to calculate existing conditions Level of Service (LOS) was collected for 23 intersections along Highways 1 and 92 in 2014. The intersection LOS analysis was conducted using the criteria discussed in the Current Performance Standards section on page 49.

Table 21 includes the following information by peak period:

- Intersection location
- Control Type – Describes the type of control at each intersection, including two-way stop control on the minor street (TWSC) or signalized
- Delay – Is the additional travel time experienced by a driver that is attributable to the presence of a traffic signal and/or conflicting traffic.
- Level of Service
- Warrant analysis – Whether the intersection meets conditions necessary for a peak-hour signal warrant, per the California Manual of Uniform Traffic Control Devices

All signalized intersections within the Midcoast region operate above LOS C; however, several unsignalized intersections along Highway 1 have minor street approaches that operate below LOS D during weekday peak periods or below LOS E during weekend peak periods, per the existing performance standards. These are denoted in red in the table.

All intersections that operate below the existing performance standard are minor-street, stop-controlled and only have one lane of approach. None of the intersections operating below the existing performance standard meet a peak-hour signal warrant. Only Cypress Avenue has more than 50 vehicles per hour on an approach turning onto Highway 1. The County's Draft Intersection Control Evaluation analysis found that Cypress Avenue and Highway 1 meets the 8-hour vehicular volume warrant (Warrant 1) and 4-hour vehicular volume warrant (Warrant 2).[18]

Highway 92 and Skyline Boulevard (west) does not meet the existing performance standard for intersection LOS during any period; Skyline Boulevard has a channelized-yield right turn onto Highway 92 and less than 50 vehicles turning left onto Highway 92. Neither Skyline Boulevard nor Muddy Road/Ox Mountain Landfill Road meet signal warrants so are not considered deficient under the proposed performance standard for intersection LOS.

[18] Warrant definitions in the Manual of Uniform Traffic Control Devices (https://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm)

Table 21: Existing Conditions Intersection Level of Service

		AM Peak Hour			PM Peak Hour			Weekend (Midday) Peak Hour		
Street Names	**Control Type**	**Delay[1]**	**LOS**	**Meets Peak Hour Warrant[2]**	**Delay[1]**	**LOS**	**Meets Peak Hour Warrant[2]**	**Delay[1]**	**LOS**	**Meets Peak Hour Warrant[2]**
HIGHWAY 1										
SR-1 / 2nd St	TWSC	16.1 (WB)	C	N	15.7 (WB)	C	N	22.4 (WB)	C	N
SR-1 / 7th St	TWSC	12.6 (EB)	B	N	13 (EB)	B	N	14.8 (EB)	B	N
SR-1 / 8th St	TWSC	18.7 (WB)	C	N	32.5 (WB)	D	N	45.3 (WB)	E	N
SR-1 / 16th St	TWSC	31.6 (EB)	C	N	39.5 (EB)	E	N	42.6 (WB)	E	N
SR -1 / Carlos St	TWSC	12.3 (WB)	B	N	12.1 (WB)	B	N	12.7 (WB)	B	N
SR-1 / Vallemar St	TWSC	17.6 (EB)	C	N	24.5 (WB)	C	N	21.8 (WB)	C	N
SR-1 / California Ave	TWSC	25.6 (WB)	D	N	44.4 (WB)	E	N	53.7 (WB)	F	N
SR-1 / Virginia Ave	TWSC	22.6 (WB)	C	N	38.5 (WB)	E	N	57.1 (WB)	F	N
SR-1 / Vermont Ave (WB)	TWSC	27.5 (WB)	D	N	45 (WB)	E	N	50.1 (EB)	F	N
SR-1 / Cypress Ave (EB)[3]	TWSC	44.2 (EB)	E	N	104.6 (WB)	F	N	146 (EB)	F	N
SR-1 / St Etheldore St	TWSC	23.2 (WB)	C	N	34.1 (WB)	D	N	37.1 (WB)	E	N
SR-1 / Capistrano Rd (North)	TWSC	17.4 (EB)	C	N	22.1 (EB)	C	N	30.6 (EB)	D	N
SR-1 / Coral Reef Ave	TWSC	16.3 (WB)	C	N	24.5 (WB)	C	N	28.7 (WB)	D	N
SR-1 / Capistrano Rd (South)	Signalized	19.1	B	N/A	17.5	B	N/A	20.7	C	N/A
SR-1 / Coronado St	Signalized	21.7	C	N/A	14.4	B	N/A	11.4	B	N/A
Obispo Rd / Coronado St	TWSC	12.9 (EB)	B	N	10.2 (WB)	B	N	12.3 (WB)	B	N
SR-1 / Magellan Ave	TWSC	53.5 (EB)	F	N	78.5 (EB)	F	N	102.2 (EB)	F	N
SR-1 / Medio Ave	TWSC	104.5 (WB)	F	N	73.9 (WB)	F	N	254.8 (WB)	F	N
SR-1 / Miramar Dr	TWSC	21.3 (EB)	C	N	91.7 (EB)	F	N	46.9 (EB)	E	N
SR-1 / Mirada Rd	TWSC	126.2 (WB)	F	N	112.7 (WB)	F	N	282.3 (WB)	F	N
HIGHWAY 92										
SR-92 / Muddy Rd (Ox Mt Landfill)	TWSC	64.7 (SB)	F	N	92.6 (SB)	F	N	33.5 (SB)	D	N
SR-92 / Skyline Blvd (West, Upper)	TWSC	35.5 (NB)	E	N	72.9 (NB)	F	N	626.9 (NB)	F	N
SR-92 / SR-35 (East, Lower)	Signalized	11.7	B	N/A	22.0	C	N/A	41.9	D	N/A

Notes:
[1]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
[2]Section 4C.04 of the CA-MUTCD describes the conditions necessary to meet a peak hour signal warrant (https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev-5/camutcd2014-part4-rev5.pdf)
[3]DKS prepared a Draft Intersection Control Evaluation memorandum for the intersection of Cypress Avenue and Highway 1. The intersection was found to meet signal warrants 1 and 2 based on data collection completed in 2019.

ROADWAY LEVEL OF SERVICE

As described on page 44, roadway Level of Service is based on the volume (v) and capacity (c) of the roadway segment, where capacity is defined by the number of lanes per direction and the volume is measured. The v/c is then calculated and compared to the threshold range described in the City/County Association of Governments (C/CAG) Congestion Management Program; the existing LOS thresholds are in Table 16 on page 45; roadway LOS D is acceptable for peak weekday periods and LOS E is acceptable for weekend periods.

Deficient roadway segments according to the existing performance standards are highlighted in red in Table 22. All roadway segments are considered sufficient along Highway 1 except for Coronado Street to Medio Avenue, Medio Avenue to Miramar Drive, and Miramar Drive and Mirada Road during the weekday peak periods. On Highway 92, the segments between R Rd and Muddy Road, and Muddy Road and Skyline Blvd are considered deficient during the weekday peak periods.

Table 22: Existing Conditions Roadway Segment Level of Service

			AM			PM			Weekend (Midday)		
Location	**Class**	**Capacity**	**Volume (veh/hr)**	**v/c**	**LOS**	**Volume (veh/hr)**	**v/c**	**LOS**	**Volume (veh/hr)**	**v/c**	**LOS**
Highway 1											
1st St and 2nd St	Two-Lane Highway	2,800	963	0.34	D	1,401	0.50	D	1,426	0.51	D
2nd St and 7th St	Two-Lane Highway	2,800	965	0.34	D	1,357	0.48	D	1,395	0.50	D
7th St and 9th St	Two-Lane Highway	2,800	930	0.33	D	1,227	0.44	D	1,424	0.51	D
9th St and Carlos St	Two-Lane Highway	2,800	893	0.32	C	1,237	0.44	D	1,512	0.54	D
Carlos St and Vallemar St	Two-Lane Highway	2,800	1,058	0.38	D	1,298	0.46	D	1,496	0.53	D
Vallemar St and California St	Two-Lane Highway	2,800	1,018	0.36	D	1,247	0.45	D	1,454	0.52	D
California St and Vermont St	Two-Lane Highway	2,800	1,205	0.43	D	1,355	0.48	D	1,518	0.54	D
Vermont St and Cypress Ave	Two-Lane Highway	2,800	1,182	0.42	D	1,394	0.50	D	1,540	0.55	D
Cypress Ave and Etheldore St	Two-Lane Highway	2,800	1,123	0.40	D	1,356	0.48	D	1,544	0.55	D
Etheldore St and Capistrano Rd N	Two-Lane Highway	2,800	1,181	0.42	D	1,414	0.51	D	1,547	0.55	D
Capistrano Rd N and Coral Reef Ave	Two-Lane Highway	2,800	1,201	0.43	D	1,408	0.50	D	1,607	0.57	E
Coral Reef Ave and Capistrano Rd S	Two-Lane Highway	2,800	1,115	0.40	D	1,294	0.46	D	1,502	0.54	D
Capistrano Rd S and Coronado St	Two-Lane Highway	2,800	1,132	0.40	D	1,442	0.52	D	1,250	0.45	D
Coronado St and Medio Ave	Two-Lane Highway	2,800	1,662	0.59	E	1,947	0.70	E	2,017	0.72	E
Medio Ave and Miramar Dr	Two-Lane Highway	2,800	1,682	0.60	E	1,961	0.70	E	2,112	0.75	E
Miramar Dr and Mirada Rd	Two-Lane Highway	2,800	1,650	0.59	E	1,932	0.69	E	2,205	0.79	E
Highway 92											
R Rd and Muddy Road	Two-Lane Highway	2,800	1,670	0.60	E	1,873	0.67	E	1,689	0.60	E
Muddy Road and Skyline Blvd	Two-Lane Highway	2,800	1,663	0.59	E	1,890	0.68	E	1,553	0.55	D
Skyline Blvd and SR 35	Two-Lane Highway	2,800	1,259	0.45	D	1,220	0.44	D	1,258	0.45	D
SR 35 and I-280	Two-Lane Highway	2,800	1,495	0.53	D	1,705	0.61	E	1,859	0.66	E

DELAY INDEX

Connect the Coastside proposes using the Delay Index to measure roadway segment performance (see page 52). A Delay Index was calculated for Highway 1 corridor from 1st Street in Montara to Mirada Road in Miramar, and for Highway 92 from west of Ox Mt Landfill Road, near the City of Half Moon Bay border, to east of Highway 92 and Highway 35 (Lower) intersection.

Most 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 to calculate the Delay Index and determine impacts. Under existing conditions, both directions of travel along Highway 1 show a Delay Index below the proposed performance standard of 2.0 for all time periods. While discrete segments along Highway 1 are not held to any defined standard, it can be noted that none of them currently exceed the standard. For Highway 92, the entire segment in the study area is below the standard of 2.0 during all periods.

This reflects that most of delay occurs at intersections, which have a separate (LOS) evaluation metric and standard. Measures to reduce delay for the highways are therefore most effective at the corridor level. Delay Index values and travel times are provided below.

Table 23: Existing Conditions Delay Index for Highway 1

	FREE FLOW~	AM		Midday (Weekend)		PM	
Highway 1 - Southbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
1st Street to 16th Street	01:00	00:29	0.49	00:33	0.55	00:32	0.53
16th Street to Capistrano (North)	02:59	03:40	1.23	03:56	1.32	03:50	1.28
Capistrano (North) to Mirada Road	02:29	03:10	1.27	03:21	1.35	03:16	1.31
Total	**06:28**	**07:19**	**1.13**	**07:50**	**1.21**	**07:37**	**1.18**
Highway 1 - Northbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
Mirada Road to Capistrano (North)	02:36	03:05	1.18	03:29	1.34	03:27	1.32
Capistrano (North) to 16th Street	02:59	03:24	1.14	03:27	1.16	03:28	1.16
16th Street to 1st Street	00:54	01:00	1.11	01:00	1.10	00:56	1.04
Total	**06:29**	**07:28**	**1.15**	**07:56**	**1.22**	**07:51**	**1.21**

~ Free Flow is segment length divided by the speed limit and an output of Synchro

Table 24: Existing Conditions Delay Index for Highway 92

	FREE FLOW~	AM		Midday (Weekend)		PM	
Highway 92	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
HMB City Limit to I-280 Ramp (EB)	08:42	12:51	1.48	12:51	1.48	12:43	1.46
I-280 Ramp to HMB City Limit (WB)	08:42	12:25	1.43	12:25	1.43	12:49	1.47

PROJECTED TRANSPORTATION CONDITIONS

BACKGROUND

In order to identify future transportation deficiencies (i.e., where performance measures are not met), the project team had to develop future travel forecasts at intersections and along roadway segments. The forecasts for future traffic demand on weekdays were developed using the San Mateo County C/CAG-VTA Travel Demand Model. The Travel Demand model can forecast traffic volumes for a general area called a Transportation Analysis Zone (TAZ) (see map on page 38). Since having area-wide volumes does not tell us the actual impact on key performance indicators at specific locations, the Furness process[19] was used to spread the volumes out to intersections along the corridor based on land use. The general process for projecting future transportation conditions on weekdays is as follows:

1. Run travel demand model for current year (2014) → **Existing weekday peak hour traffic volumes**
2. Run travel demand model for horizon year (2040) → **Forecasted weekday peak hour traffic volumes based on regional growth and other factors by TAZ**
3. Update travel demand model for horizon year (2040) with Maximum Buildout Forecast land use → **Forecasted weekday peak hour traffic volumes based on assumption of Maximum Buildout by TAZ**
4. Compute the future segment volumes by adding growth-related traffic to existing volumes, and use the Furness process to assign volumes to intersections → **Forecasted weekday peak hour traffic volumes by intersection and segment**
5. Analyze the forecasted traffic data using additional software (e.g., Synchro and Simtraffic) → **Forecasted weekday peak hour intersection and roadway Level of Service and delay**

The C/CAG Travel Demand Model is intended to represent conditions on an average weekday, rather than modeling weekend travel conditions. Therefore, the project team used a different approach to determine future weekend traffic volumes. The general process for projecting future transportation conditions on weekends is as follows:

1. Conduct 7-day vehicle counts along Highways 1 and 92 → **Determine weekday midday and Saturday midday peak-hour volumes conversion factor**
2. Use updated travel demand models for 2040 with Maximum Buildout Forecast and apply conversion factor to weekday model volumes into weekend model volumes based on counts → **Forecasted weekend peak hour traffic volumes**

[19] Assessing "trip distribution" is part of the transportation modeling process and involves matching a trip maker's origin with destinations in different zones to create a "trip matrix," or the number of trips that have the same origins and destinations. The Furness method is a matrix modification method used to extrapolate trip distribution based on future growth.

3. Compute the future segment volumes by adding growth to existing volumes, and use the Furness process to assign volumes to intersections → **Forecasted weekend peak hour traffic volumes by intersection and segment**
4. Analyze the forecasted traffic data using additional software (e.g., Synchro and Simtraffic) → **Forecasted weekend peak hour intersection and roadway segment Level of Service and delay**

The results of the transportation analysis based on the projected Maximum Buildout Forecast is described further in the following section. Travel demand models are just that – models – and all models have limitations. Travel demand models cannot replicate the nuances of human behavior and travel choices, nor can they effectively consider the physical environment. The purpose of the model is to provide a sense of what will happen based on the future changes that is reasonable based on the assumptions.

PROJECTED DEFICIENCIES

There are two ways growth affects transportation conditions:

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

The sections below describe when transportation conditions become deficient under the Maximum Buildout Forecast based on the existing and recommended performance standards.

Intersection Level of Service

Connect the Coastside uses intersection LOS D for intersections during the weekday peak hours and LOS E for weekend peak hours as the performance standard, per the Local Coastal Program. The operation of study intersections under Maximum Buildout Forecast conditions as compared to Existing Conditions is shown in Table 25. Intersections that operate below the LOS D during weekday peak periods or below LOS E during weekend peak periods are denoted in red.

Under Maximum Buildout Forecast conditions, the signalized intersection of Highway 1 and Coronado Street will operate at LOS D during the weekday peak hours. The majority of unsignalized intersections along Highway 1 have minor street approaches that will operate below the LOS D standard. All of these unsignalized intersections are minor-street, stop-controlled and only have one lane of approach. Of these intersections, California Avenue and Cypress Avenue are projected to have more than 75 vehicles per hour on an approach turning onto Highway 1 and satisfy signal warrants 1 and 2 under Maximum Buildout Forecast conditions. While adding additional approach lanes may facilitate the movement of right-turning vehicles onto Highway 1, the main cause for intersections failing LOS under Maximum Buildout Forecast conditions is the high through volume along Highway 1. This results in left-turning vehicles on the minor streets 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 where feasible.

Table 25: Maximum Buildout Forecast Intersection Level of Service Compared to Existing Intersection Level of Service

			AM Peak Hour LOS		PM Peak Hour LOS		Weekend (Midday) Peak Hour LOS	
Street Names	**Existing Control Type**	**LOS Standard[1]**	**Max. Buildout[2]**	**Existing[2]**	**Max. Buildout[2]**	**Existing[2]**	**Max. Buildout[2]**	**Existing[2]**
Highway 1								
SR-1 / 2nd Stº	TWSC	C(D)	F	C	F	C	F	C
SR-1 / 7th St	TWSC	C(D)	C	B	C	B	C	B
SR-1 / 8th Stº	TWSC	C(D)	F	C	F	D	F	E
SR -1 / 16th St^º	TWSC	C(D)	F	C	F	E	F	E
SR -1 / Carlos St	TWSC	C(D)	C	B	C	B	C	B
SR-1 / Vallemar Stº	TWSC	C(D)	D	C	F	C	E	C
SR-1 / California Aveº	TWSC	C(D)	F	D	F	E	F	F
SR-1 / Virginia Aveº	TWSC	C(D)	F	C	F	E	F	F
SR-1 / Vermont Ave (WB)º	TWSC	C(D)	F	D	F	E	F	F
SR-1 / Cypress Ave (EB)º	TWSC	C(D)	F	E	F	F	F	F
SR-1 / Etheldore St (South)º	TWSC	C(D)	F	C	F	D	C	E
SR-1 / Capistrano Rd (North)	TWSC	C(D)	C	C	C	C	D	D
SR-1 / Coral Reef Aveº	TWSC	C(D)	F	C	F	C	F	D
SR-1 / Capistrano Rd (South)	Signalized	C(D)	C	B	C	B	C	C
SR-1 / Coronado Stº	Signalized	C(D)	D	C	D	B	E	B
Obispo Rd / Coronado St	TWSC	C(D)	B	B	B	B	B	B
SR-1 / Magellan Aveº	TWSC	C(D)	F	F	F	F	F	F
SR-1 / Medio Aveº	TWSC	C(D)	F	F	F	F	F	F
SR-1 / Miramar Drº	TWSC	C(D)	E	C	F	F	F	E
SR-1 / Mirada Rdº	TWSC	C(D)	F	F	F	F	F	F
Highway 92								
SR-92 / Ox Mt. Landfill Rd	TWSC	C(D)	E	F	F	F	F	D

SR-92 / Skyline Blvd (West, Upper)	TWSC	C(D)	F	E	F	F	F	F
SR-92 / SR-35 (East, Lower)	Signalized	C(D)	D	B	F	C	F	D

Notes:
[1]LOS standard provided within parenthesis are for any one individual movement
[2]Signalized intersections and all way stop-controlled (AWSC) are reported by the LOS for the intersection; two-way stop controlled (TWSC) intersections are reported with the worst approach's level of service
ºIntersection falls below the existing intersection LOS standard under maximum buildout forecast conditions
^ Level of Service analysis was done as part of draft Intersection Control Evaluation memos; LOS for existing and buildout for each time period are reported for HCM 2010 TWSC

Roadway Level of Service

Table 26 shows roadway segment LOS under Maximum Buildout Forecast conditions compared to existing conditions. Local Coastal Program Policy 2.43 sets LOS D as the acceptable level of service for roadway segments during weekday peak periods, and LOS E as acceptable during weekend (recreational peak periods when assessing the need for road expansion.

Under Maximum Buildout Forecast Conditions, both Highways 1 and 92 do not meet the defined LOS standard for any roadway segment. These are highlighted in red. This is due to the forecasted high-through volumes on Highways 1 and 92. Connect the Coastside does not recommend using Roadway Level of Service as a performance measure moving forward.

Table 26: Maximum Buildout Forecast Roadway Segment Level of Service Compared to Existing Roadway Segment Level of Service

			AM				PM				Weekend (Midday)			
Location	**Class**	**Capacity**	**Max. Volume (veh/hr)**	**Max v/c**	**Max. LOS**	**Existing LOS**	**Max. Volume (veh/hr)**	**Max v/c**	**Max. LOS**	**Existing LOS**	**Max. Volume (veh/hr)**	**Max v/c**	**Max. LOS**	**Existing LOS**
Highway 1														
1st St and 2nd St	Two-Lane Highway	2800	1867	0.67	E	D	2162	0.77	E	D	2421	0.86	E	D
2nd St and 7th St	Two-Lane Highway	2800	1688	0.60	E	D	1940	0.69	E	D	2265	0.81	E	D
7th St and 9th St	Two-Lane Highway	2800	1737	0.62	E	D	2019	0.72	E	D	2297	0.82	E	D
9th St and Carlos St	Two-Lane Highway	2800	1886	0.67	E	C	2154	0.77	E	D	2397	0.86	E	D
Carlos St and Vallemar St	Two-Lane Highway	2800	1876	0.67	E	D	2151	0.77	E	D	2396	0.86	E	D
Vallemar St and California St	Two-Lane Highway	2800	1800	0.64	E	D	2068	0.74	E	D	2323	0.83	E	D
California St and Vermont St	Two-Lane Highway	2800	1873	0.67	E	D	2166	0.77	E	D	2428	0.87	E	D
Vermont St and Cypress Ave	Two-Lane Highway	2800	1956	0.70	E	D	2178	0.78	E	D	2388	0.85	E	D
Cypress Ave and Etheldore St	Two-Lane Highway	2800	1871	0.67	E	D	2136	0.76	E	D	2428	0.87	E	D
Etheldore St and Capistrano Rd N	Two-Lane Highway	2800	1756	0.63	E	D	2312	0.83	E	D	2061	0.74	E	D
Capistrano Rd N and Coral Reef Ave	Two-Lane Highway	2800	1637	0.58	E	D	2264	0.81	E	D	1961	0.70	E	E
Coral Reef Ave and Capistrano Rd S	Two-Lane Highway	2800	1598	0.57	E	D	2170	0.78	E	D	2059	0.74	E	D
Capistrano Rd S and Coronado St	Two-Lane Highway	2800	1835	0.66	E	D	2244	0.80	E	D	2291	0.82	E	D
Coronado St and Medio Ave	Two-Lane Highway	2800	2505	0.89	E	E	2897	1.03	F	E	2925	1.04	F	E

Medio Ave and Miramar Dr	Two-Lane Highway	2800	2559	0.91	E	E	2955	1.06	F	E	2962	1.06	F	E
Miramar Dr and Mirada Rd	Two-Lane Highway	2800	2596	0.93	E	E	2743	0.98	E	E	3190	1.14	F	E
Highway 92														
R Rd and Muddy Road	Two-Lane Highway	2800	2078	0.74	E	E	2360	0.84	E	E	2266	0.81	E	E
Muddy Road and Skyline Blvd	Two-Lane Highway	2800	2156	0.77	E	E	2474	0.88	E	E	2457	0.88	E	D
Skyline Blvd and SR 35	Two-Lane Highway	2800	2657	0.95	E	D	3030	1.08	F	D	3117	1.11	F	D
SR 35 and I-280	Two-Lane Highway	2800	2237	0.80	E	D	2516	0.90	E	E	2669	0.95	E	E

Delay Index

A delay index was calculated for study segments along entire lengths of Highways 1 and 92 within the study area under Maximum Buildout Forecast conditions per the proposed use of the Delay Index as a performance measure.

Delay Index and travel times for study segments along Highway 1 and Highway 92 under Maximum Buildout Forecast Conditions compared to existing conditions are shown on the next page. The Highway 1 southbound segment exceeds the delay index performance standard of 2.0 during the weekday PM peak hour, mainly on the southern portion of the route from Capistrano (North) to Mirada Road. Highway 92 meets the delay index performance standard of 2.0 for the entire route under both existing and Maximum Buildout Forecast conditions.

Table 27: Maximum Buildout Forecast Conditions Delay Index Compared to Existing Conditions for Highway 1

	FREE FLOW~	EXISTING						MAXIMUM BUILDOUT*					
		AM		Midday (Weekend)		PM		AM		Midday (Weekend)		PM	
Highway 1 - Southbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
1st Street to 16th Street	01:00	00:29	0.49	00:33	0.55	00:32	0.53	00:34	0.58	00:48	0.80	00:39	0.66
16th Street to Capistrano (North)	02:59	03:40	1.23	03:56	1.32	03:50	1.28	03:34	1.19	04:02	1.35	03:41	1.23
Capistrano (North) to Mirada Road	02:29	03:10	1.27	03:21	1.35	03:16	1.31	05:43	2.30	07:45	3.12	10:39	4.28
Total	**06:28**	**07:19**	**1.13**	**07:50**	**1.21**	**07:37**	**1.18**	**09:51**	**1.52**	**12:35**	**1.94**	**14:59**	**2.32**
Highway 1 - Northbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
Mirada Road to Capistrano (North)	02:36	03:05	1.18	03:29	1.34	03:27	1.32	03:29	1.34	04:54	1.88	04:32	1.74
Capistrano (North) to 16th Street	02:59	03:24	1.14	03:27	1.16	03:28	1.16	03:15	1.09	03:20	1.12	03:24	1.14
16th Street to 1st Street	00:54	01:00	1.11	01:00	1.10	00:56	1.04	01:09	1.28	01:08	1.25	01:06	1.21
Total	**06:29**	**07:28**	**1.15**	**07:56**	**1.22**	**07:51**	**1.21**	**07:53**	**1.22**	**09:22**	**1.44**	**09:01**	**1.39**

~ Free Flow is segment length divided by the speed limit and an output of Synchro

* In Maximum Buildout conditions, segments that do not meet the delay index standard of 2.0 are highlighted in red

Table 28: Maximum Buildout Forecast Conditions Delay Index Compared to Existing Conditions for Highway 92

	FREE FLOW~	EXISTING						MAXIMUM BUILDOUT*					
		AM		Midday (Weekend)		PM		AM		Midday (Weekend)		PM	
Highway 92	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
HMB City Limit to I-280 Ramp (EB)	08:42	12:51	1.48	12:51	1.48	12:43	1.46	12:48	1.47	12:39	1.45	12:40	1.46
I-280 Ramp to HMB City Limit (WB)	08:42	12:25	1.43	12:25	1.43	12:49	1.47	12:21	1.42	12:44	1.46	12:45	1.47

~ Free Flow is segment length divided by the speed limit and an output of Synchro
* In Maximum Buildout conditions, segments that do not meet the delay index standard of 2.0 are highlighted in red; all of Highway 92 meets thresholds

Other

Based on the guidelines discussed on page 53, the following concerns should be addressed, as safety concerns and the need for multimodal facilities will increase in the Maximum Buildout Forecast condition and are critical to reduce traffic congestion and meet the community's vision and goals:

- **Driving**
    - Conflicting pavement markings (e.g., left-turn pockets) and lack of pavement markings leads to increased speeds and safety concerns, and driver confusion, adding to congestion.
- **Parking**
    - Poor parking utilization due to lack of signage and pavement markings, leads to poor occupancy at existing lots and congestion as drivers circle for parking.
- **Walking Network**
    - Lack of continuity in sidewalks and pathways creates an inhospitable walking environment, deterring both visitors and residents to walk for short trips, like to school or to the Post Office.
- **Pedestrian Crossings**
    - Few controlled marked crossings of Highways 1 and 92 near important destinations, such as recreational areas, trailheads, bus stops and to/from parking lots, creates additional safety concerns and deters walking.
    - Existing marked crossings lack supportive safety infrastructure for the volumes and speeds along highways, creating safety concerns and further deterring walking.
- **Bikeways**
    - Few designated bikeways (most are Class III Signed Bike Routes) and little bicycle parking makes bicycling as a primary mode of transportation challenging.
- **Trails**
    - California Coastal Trail is a state and regional priority and is incomplete and lacks a consistently defined alignment.
    - Trails will continue to be major trip-generators with additional trail-roadway crossings and amenities needed. Trails often follow roadway network alignments, so must be considered in any transportation recommendations.
- **Transit**
    - Low frequency of buses, lack of amenities at bus stops, and limited hours of operation deter transit ridership for those who have the option to drive, and do not serve students well.
    - Lack of visitor-serving transit options to travel to Midcoast or get around while there encourages driving as the primary mode for visitors to the coast.

7.Recommendations

BACKGROUND

This chapter includes proposed projects, policies and programs intended to meet community-identified needs; 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 to mitigate for existing and future development's significant adverse cumulative impacts on public access to the beaches of the Midcoast region of San Mateo County. It is important to note that just because a location does not meet a deficiency as defined by the current and proposed performance standards, it does not mean a recommendation is not appropriate. Recommended projects are intended to address community needs and traffic safety concerns, which are not captured by the current and proposed performance standards. Accordingly, Connect the Coastside includes project proposals to improve walking, bicycling, transit service and driving to improve mobility and safety for Midcoast residents.

Connect the Coastside's proposed projects, programs, and policy recommendations are preliminary and at the planning-level. Some projects are not intended for implementation in the near-term, as they would address future deficiencies. It is beyond the scope of this Plan to develop final designs and engage at the individual project-level; graphics depicting projects are conceptual only and not reflective of final design. All projects involving construction will require a community engagement process and detailed design process that will consider environmental, regulatory, topographic, fiscal and other constraints.

Quantifying mode shifts when new active transportation facilities are provided where they did not exist is challenging; therefore, Connect the Coastside cannot project the benefits from a modal shift. As more effective data collection and analysis tools emerge, future updates to this plan will include assessments of multimodal improvements.

This chapter is organized as follows:

DEVELOPING RECOMMENDATIONS

Connect the Coastside's recommendations come from various sources and have been refined over time. In general, recommendations were developed as follows:

1. Determine where deficiencies occur in existing and projected (Maximum Buildout Forecast) conditions based on the performance standards.
2. Gather information on transportation concerns, priorities, and potential projects from stakeholders, such as Technical Advisory Committee, Midcoast Community Council, and community members.
3. Review relevant past and ongoing plans and studies to inform recommendations, such as Highway 1 Safety and Mobility Improvement Study (Phases 1 and 2), Unincorporated San Mateo County Active Transportation Plan, and Plan Princeton.
4. Review forthcoming transportation projects led by other actors, such as Caltrans, and proposed development projects, such as Big Wave.
5. Identify limitations to potential project recommendations, such as topography, environmental resources and available right-of-way.
6. Identify a suite of potential improvements based on findings to meet proposed standards while advancing community goals.
7. Share potential improvements with stakeholders for feedback and refinement.
8. Develop the final list of recommendations in Connect the Coastside.

The potential improvements are based upon the ability to address performance standard deficiencies (existing and projected), preliminary feasibility, cost, consistency with the Local Coastal Program (including environmental considerations), community character, traffic safety, and ability to reduce overall demand for driving.

RECOMMENDED INFRASTRUCTURE AND SERVICE IMPROVEMENTS

Recommended improvements are intended to increase mobility, address safety concerns, and resolve performance standard deficiencies. Improvements are detailed in separate sections by mode (roadway (R), pedestrian (Pe), bikeways (B), transit (T), parking (Pa), recreational trails, and other), and are not in any particular order of priority within each section. The following table summarizes recommendations, followed by a series of maps by community, and then detailed discussion of each project. This section concludes with a performance standards assessment.

Table 29: Recommended Infrastructure Projects

Proj. #	Project Name	Brief Description	Community
R1	Highway 1 Shoulder Treatment	Construct consistent shoulder treatment of curb and gutter in "Village" and “Fringe” in designated areas of Highway 1	All
R2	Highway 1 Side Street Stop Signs	Install stop signs and pavement markings at all side streets of SR-1 where missing	All
R3	Gray Whale Cove Turn and Acceleration Lanes	Install left-turn bay with painted island to provide storage area for left-turn movements in and out of Gray Whale Cove parking lot (from southbound Highway 1) and acceleration lane to turn left out of parking lot and continue southbound on Highway 1	North of Montara
R4	Highway 1 Turn and Acceleration Lanes at 8th Street	Modify striping to create left-turn lane into 8th St from Highway 1 southbound and acceleration lane out of 8th St to continue Highway 1 southbound	Montara
R5	16th St / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of single-lane roundabout	Moss Beach
R6	California Ave / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of single-lane roundabout	Moss Beach
R7	Cypress Ave / Highway 1 Intersection Control	Intersection control, with preliminary recommendation of multi-lane roundabout	Moss Beach
R8	Main Street Traffic Calming and Bicycle/Pedestrian Connectivity	Pedestrian access, traffic calming and bicycle improvements in Central Montara between 7th and 11th Streets, including: curb extensions, sidewalks, marked crossings, mini traffic circle, and bike route.	Montara
R9	Carlos Street Realignment to 16th Street	Realign northern terminus of Carlos Street at Highway 1 to connect to 16th Street.	Moss Beach
R10	Carlos Street Traffic Calming	Striping, signage, and completion of missing sidewalk, with conversion to one-way southbound with parking reoriented facing south on Carlos Street to accommodate the Parallel Trail and calm traffic in central Moss Beach	Moss Beach
R11	Highway 92 / Highway 35 (East, Lower) Intersection Improvements	Intersection improvements to facilitate pedestrian and bicycle crossings and improve signal timing	Highway 92
R12	Highway 92 / Highway 35 (West, Upper) Intersection Control	Add traffic signal and crossing improvements to facilitate connections for trail users and turning movements for motorists.	Highway 92
R13	Highway 92 Truck Signs	"Trucks Use Right Lane" signage along Highway 92	Highway 92

R14	Highway 92 Left-turn Pockets	Provide left-turn pockets at local businesses on Highway 92	Highway 92
Pe1	New and Improved Crossings of Highways 1 and 92	Improve existing and add new pedestrian crossings on Highways 1 and 92 including marked crossings with flashing beacons, overcrossing of Highway 1 / south of Carlos St, and improve Highway 1 / Coronado St	All
Pe2	Highway 1 Multimodal Parallel Trail	Connected walking and bicycling facilities along the east side of Highway 1 through connected Class I Path, sidewalks, and Class III Bike Route, with marked crossings of intersecting streets with the path	All
Pe3	Midcoast Alignment Completion of California Coastal Trail	Recommended California Coastal Trail alignment and improvements in the Midcoast including: wayfinding signage, Class I Path, Class III Bike Route, trails, and paths.	All
Pe4	Highway 1 Sidewalks in Moss Beach and Montara	Add sidewalks in central Montara and Moss Beach in front of businesses located on Highway 1 and marked crossings of side streets intersection with Highway 1	Montara, Moss Beach
Pe5	Central Moss Beach Bicycle and Pedestrian Improvements	Add sidewalk on west side where missing on Etheldore St (north of California Ave) and California Ave (south of Etheldore) to connect to existing sidewalks, and add Class III Bike Route on California Ave from Etheldore St to Highway 1	Moss Beach
Pe6	Montara Safe Routes to School	Various improvements to make it easier to walk and bike to Farallone View Elementary School, including sidewalks, Class III Bike Routes, improved crossings, and stop signs	Montara
Pe7	El Granada Safe Routes to School	Various improvements to make it easier to walk and bike to El Granada Elementary School and the Wilkinson School, including sidewalks, Class III Bike Routes, traffic calming, and improved crossings.	El Granada
Pe8	Capistrano Road (South) Intersection Improvements	Improve intersection for pedestrian access including high visibility crosswalks, refuge islands and guide signs	El Granada, Princeton
B1	Highway 1 Bikeway	Bikeway designation on Highway 1 of Class II Bike Lanes	All
B2	Airport Street Bikeway and Princeton Connections	Bicycle and pedestrian connections from Moss Beach to Princeton via Cypress and Airport St.	Princeton
B3	Capistrano Road Bikeway	Bikeway designations on Capistrano Road, including Class III Bike Route with paved shoulders, Class III Bike Route with sharrows, and Class II Bike Lanes.	Princeton
B4	Highway 92 Bikeway	Bikeway designation on Highway 92 of Class III and widening shoulders where feasible	Highway 92
B5	Bicycle Parking	Install short-term bicycle parking at key destinations throughout the Midcoast	All
T1	Transit Stop Improvements	Ensure all bus stops have ADA accessible pad, with additional amenities at higher use stations including benches, shelters, and lighting	All
T2	Recreational Shuttle	Recreational weekend shuttles that run from 1) Hillsdale Caltrain Station to the Midcoast via Highway 92, continuing north to Gray Whale Cove and returning, and 2) Colma BART to Highways 1 and 92 intersection and returning	All
T3	Increased Midcoast Bus Service	Additional bus service on the Route 17 and new express bus service during peak hours between the Midcoast and Colma BART	All
Pa1	Upper Gray Whale Cove Parking Lot Improvements	Improve parking lot with pervious concrete to improve drainage and increase parking use	North of Montara
Pa2	Wayfinding	Install wayfinding signage to help orient drivers to navigate the Midcoast, including to find parking	All

Map 9: Recommended Infrastructure Improvements North of Montara

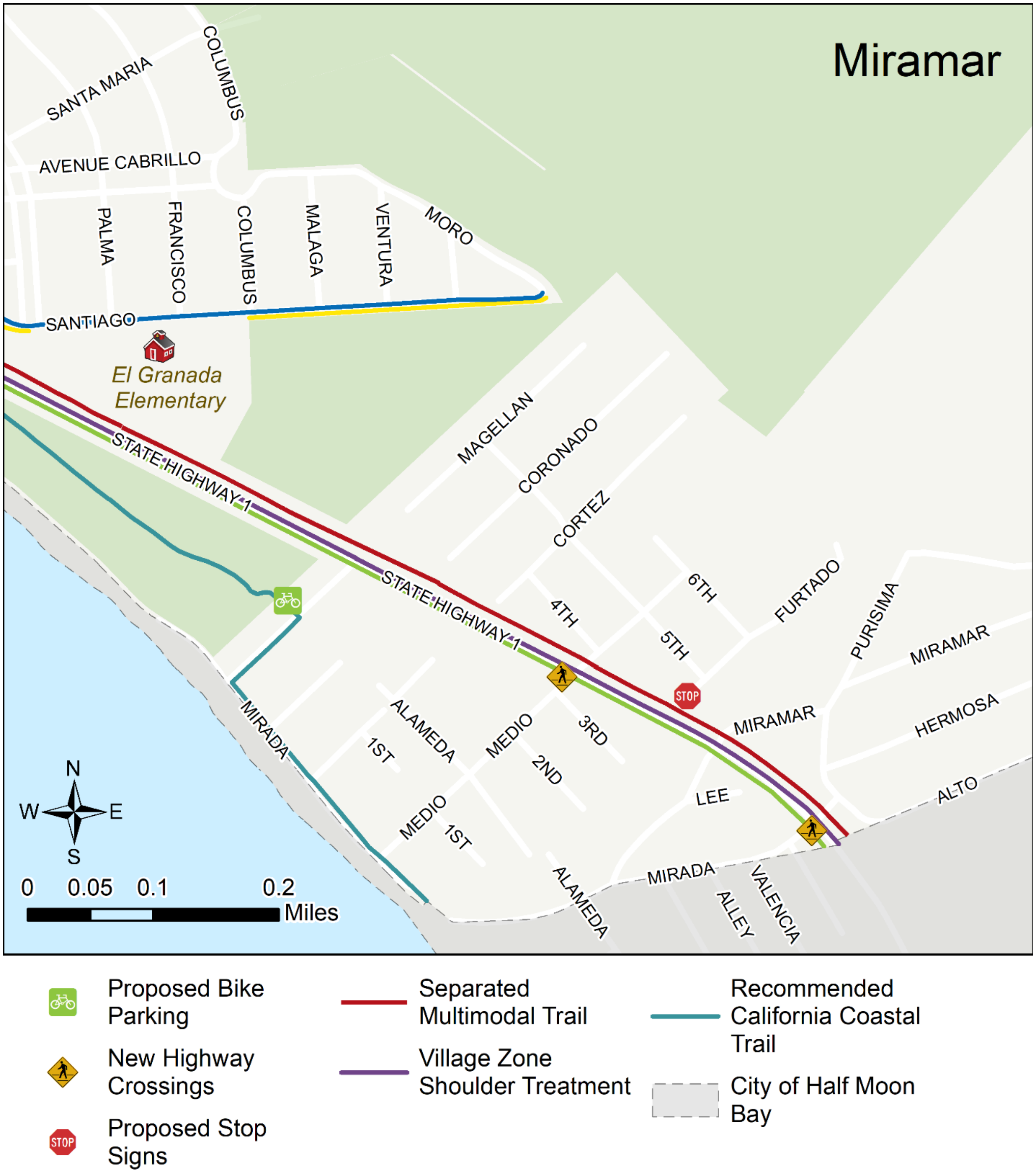
Map 10: Recommended Infrastructure Improvements Montara

Map 11: Recommended Infrastructure Improvements Moss Beach

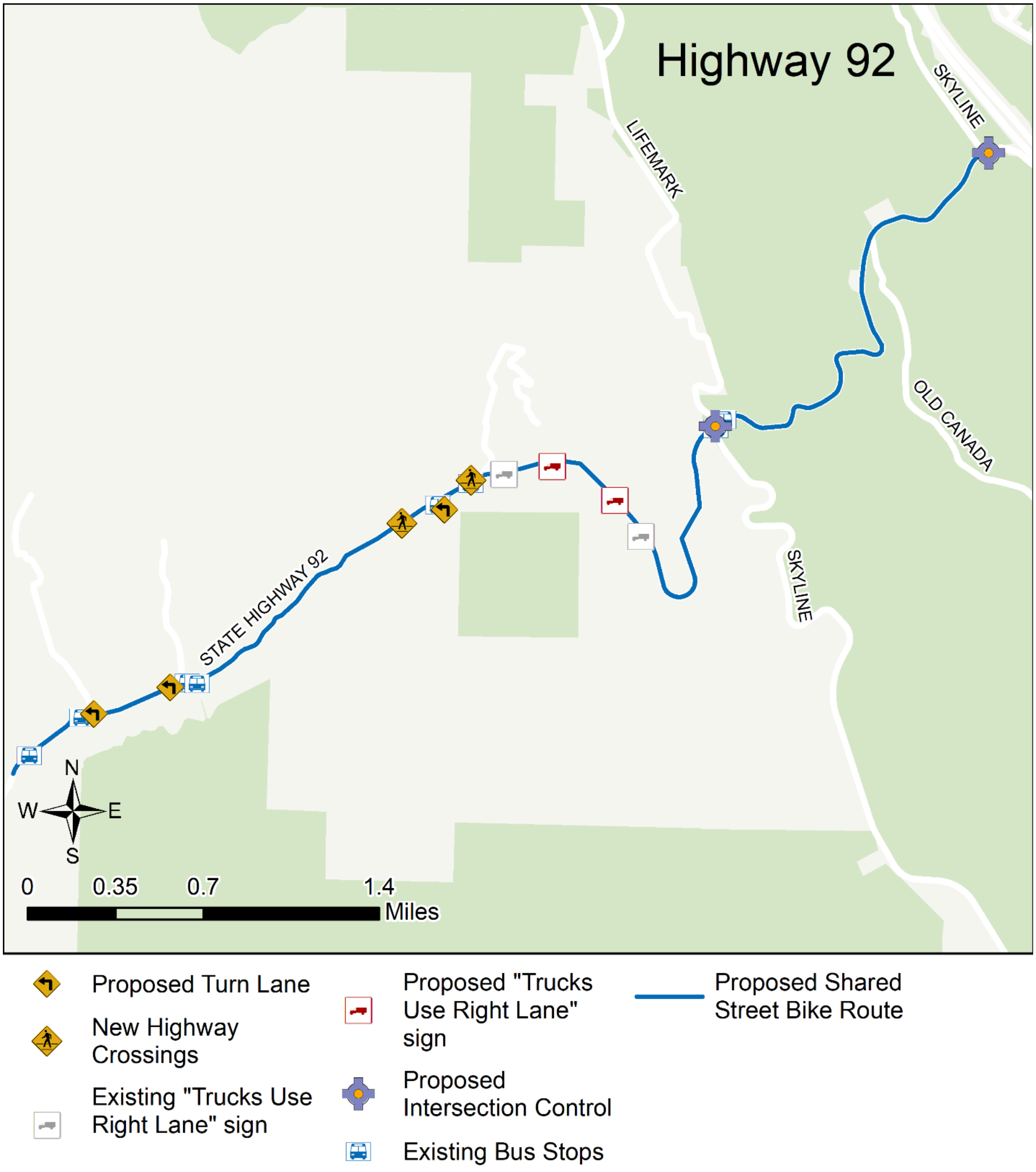
Map 12: Recommended Infrastructure Improvements Princeton

Map 13: Recommended Infrastructure Improvements El Granada

Map 14: Recommended Infrastructure Improvements Miramar



Map 15: Recommended Infrastructure Improvements Highway 92



Roadway (R)

R1. Highway 1 Shoulder Treatment

Description: Construct consistent shoulder treatment of curb and gutter in "Village" and valley gutter in “Fringe” in designated areas of Highway 1
Source: Highway 1 Safety & Mobility Study Phase 2 (p.13)
Rationale: Traffic safety concern - address high vehicle speeds
Location: Village: Highway 1 between: 7th St and 11th St, Vallemar St and Marine Blvd, and Capistrano Rd (S) and Mirada Rd. Fringe: Highway 1 between: 1st St and 7th St, 11th St and Vallemar St, Marine Blvd and Etheldore St (S), and Capistrano Rd (N) and Capistrano Rd (S).
Discussion: The Highway 1 Safety and Mobility Improvement Study identified three Context Zones to guide improvements:

- ***Rural zones*** are sparsely developed and primarily agricultural or recreational uses. An example includes Route 1 between the southern fringe of Moss Beach and access to Princeton, north of El Granada. In rural zones, there are generally few pedestrians, bicyclists, and access points. Vehicle speeds tend to be high.
- ***Fringe zones*** are transitional segments on approaches and exits at village edges, where rural context attributes begin changing. Pedestrian and bicycle activity is likely to increase in the fringe areas, and more traffic turns on and off Highway 1 to access residential and commercial areas. Driver speeds should begin to lower as drivers become aware of the changing context and anticipate potential conflicts or seek access to local sites. In many places, mixed and undefined adjacent land uses provide few cues to trigger speed reduction.
- ***Village zones*** include the coastal communities of Montara, Moss Beach, Princeton, El Granada, and Miramar. In Villages, potential traffic conflicts increase as visitors and residents seek parking, recreation, retail, transit stops, and restaurant sites. Pedestrian and bicycle traffic increase, and traffic movements at major intersections may be controlled with signs or signals.

The Highway 1 Safety and Mobility Improvement Study recommends various improvements by zone, such as consistent and narrower Highway 1 lane widths, implementation of raised medians, and implementation of edge treatments. Connect the Coastside’s project is limited to the edge treatment for village and fringe zones, since roadway reconfiguration due to other projects (e.g., bicycle lanes on Highway 1 and intersection controls) will influence lane widths and ability to include medians. Additional engagement with residents and coordination with Caltrans will be necessary to define the specific extents of proposed curb and gutter and valley gutter.

R2. Highway 1 Side Street Stop Signs

Description: Install stop signs and pavement markings at all side streets of Highway 1 where missing
Source: Connect the Coastside
Rationale: Traffic safety concern - address standard signage and marking deficiency
Location: Highway 1 at 1st St (1 sign, east of highway), Seacliff Court (1 sign, west of highway), 11th St (1 sign, west of highway), 13th St (1 sign, west of highway), 16th St/Lighthouse Dr (1 sign, west of highway), Terrace Ave (STOP pavement markings, east of highway), and Furtado Lane (1 sign, east of highway)
Discussion: 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. This project rectifies this concern by adding stop signs where missing on stop-controlled side streets on Highway 1.

R3. Gray Whale Cove Turn and Acceleration Lanes

Description: Install left-turn bay with painted island to provide storage area for left-turn movements in and out of Gray Whale Cove parking lot (from southbound Highway 1) and acceleration lane to turn left out of parking lot and continue southbound on Highway 1
Source: Highway 1 Safety and Mobility Study Improvement Phase 2 (p.37)
Rationale: Circulation concern – improve highway traffic flow at key destinations
Location: Highway 1 at Gray Whale Cove Parking Lot
Discussion: Turn Lanes and acceleration lanes on the highway will improve circulation and prevent turning vehicles from restricting vehicle flow, since there is only one-lane in each direction on Highway 1. Turns and acceleration lanes at Gray Whale Cove to make access to the beach safer and reduce slowdowns along Highway 1. This project complements the funded pedestrian crossing of Highway 1 at Gray Whale Cove.

Figure 6: R3. Gray Whale Cove Turn and Acceleration Lanes Concept Diagram

R4. Highway 1 Turn and Acceleration Lanes at 8th Street

Description: Modify striping to create left-turn lane into 8th St from Highway 1 southbound and acceleration lane out of 8th St to continue Highway 1 southbound.
Source: Highway 1 Safety and Mobility Study Phase 2 (p.46)
Rationale: Circulation concern – improve highway traffic flow and safety at key destinations
Location: Highway 1 at 8th Street
Discussion: Turn Lanes and acceleration lanes on the highway will improve circulation, safety and prevent turning vehicles from restricting vehicle flow, since there is only one-lane in each direction on Highway 1. Turns and acceleration lanes at 8th Street make access to central Montara safer and reduce slowdowns along Highway 1.

R5. 16th Street / Highway 1 Intersection Control

Description: Intersection control, with preliminary recommendation of single-lane roundabout. Final design to include pedestrian and bicycle accommodation, such as high-visibility marked crossings, curb ramps, lighting, and more.
Source: Connect the Coastside
Rationale: Traffic safety concern – poor sight distance and crossing of the California Coastal Trail and anticipated future increase in traffic volumes.[20]
Location: Highway 1 and 16th Street
Discussion: Connect the Coastside recommends a future intersection control at Highway 1 and 16th Street to accommodate the anticipated 1) increased traffic due to future development in Moss Beach, 2) increased traffic due to the proposed realignment of Carlos Street to 16th Street, and 3) California Coastal Trail crossing at this location if the proposed overcrossing connecting south on Carlos Street is not built. This proposed project is a companion to projects R9. Carlos Street Realignment to 16th Street; Pe1. New and Improved Crossings of Highways 1 and 92; and Pe2. Highway 1 Multimodal Parallel Trail.

If intersection control at Highway 1 and 16th St is warranted in the future, Connect the Coastside recommends a roundabout due to safety benefits and community support. Roundabouts eliminate left turns by requiring traffic to exit to the right of the circle and reduce vehicular speeds, thereby improving safety at intersections. Roundabouts improve bicycle and pedestrian safety with lower vehicle speeds, shorter crossing distances and greater visibility. Funding availability for right-of-way purchase, utility relocation, and construction are key considerations in choosing the ultimate improvement, as is the outcome of a Caltrans-required Intersection Control Evaluation (ICE). Additional data will be gathered and analyzed to compare the tradeoffs among different intersection options as part of a future analysis, if a control is warranted at all. If a signal is the method of control selected, Highway 1 may need to be widened to four lanes in the vicinity of the intersection; the length of additional stacking lanes needed would be determined as part of a future operations and design study.

---

[20] Cypress Point Affordable Housing Community Project Draft Transportation Impact Analysis (https://planning.smcgov.org/cypress-point-affordable-housing-community-project)

R6. California Avenue / Highway 1 Intersection Control

Description: Intersection control, with preliminary recommendation of single-lane roundabout. Final design to include pedestrian and bicycle accommodation, such as high-visibility marked crossings, curb ramps, lighting, and more.
Source: Connect the Coastside
Rationale: Performance standard and traffic safety concern – increase access to central Moss Beach and does not meet intersection LOS under PM and weekend peaks, and all under Maximum Buildout Forecast conditions, and meets a signal warrant in Maximum Buildout Forecast conditions.
Location: Highway 1 and California Avenue
Discussion: Connect the Coastside recommends intersection control at Highway 1 and California Ave to 1) address intersection LOS deficiencies, 2) accommodate anticipated increased traffic at this location due to future development in Moss Beach, and 3) accommodate existing vehicular traffic and multimodal connections to downtown Moss Beach. Connect the Coastside recommends a roundabout for the reasons described under project R5. 16th Street / Highway 1 Intersection Control. Similarly, the final project recommendation is dependent upon resolving final design constraints and outcomes from a future Caltrans-required ICE. If a signal is the method of control selected in the ICE process, it is likely Highway 1 will be widened to four lanes in the vicinity of the intersection; the length of additional stacking lanes needed would be determined as part of a future operations and design study. Additional design considerations were discussed in the Moss Beach Charette (see Appendix A).

R7. Cypress Avenue / Highway 1 Intersection Control

Description: Intersection control, with preliminary recommendation of multi-lane roundabout. Final design to include pedestrian and bicycle accommodation, such as high-visibility marked crossings, curb ramps, lighting, and more.
Source: Connect the Coastside
Rationale: Performance standard and traffic safety concern – increase access to Princeton and does not meet intersection LOS in existing or future conditions, and meets signal warrant under existing and Maximum Buildout Forecast conditions
Location: Highway 1 and Cypress Avenue
Discussion: Connect the Coastside recommends intersection control at Highway 1 and Cypress Ave to: 1) address intersection LOS deficiencies; and 2) accommodate existing vehicular traffic and multimodal connections to Princeton and destinations like Fitzgerald Marine Reserve. Connect the Coastside recommends a roundabout for the reasons described under project R5. 16th Street / Highway 1 Intersection Control. Similarly, the final project recommendation is dependent upon final design constraints and outcomes from a future Caltrans-required ICE. If a signal is the method of control selected in the ICE process, it is likely Highway 1 will be widened to four lanes in the vicinity of the intersection; the length of additional stacking lanes needed would be determined as part of a future operations and design study. Additional design considerations were discussed in the Moss Beach Charette (see Appendix A).

Figure 7: R6. California Avenue and Highway 1 Single-Lane Roundabout Concept Diagram

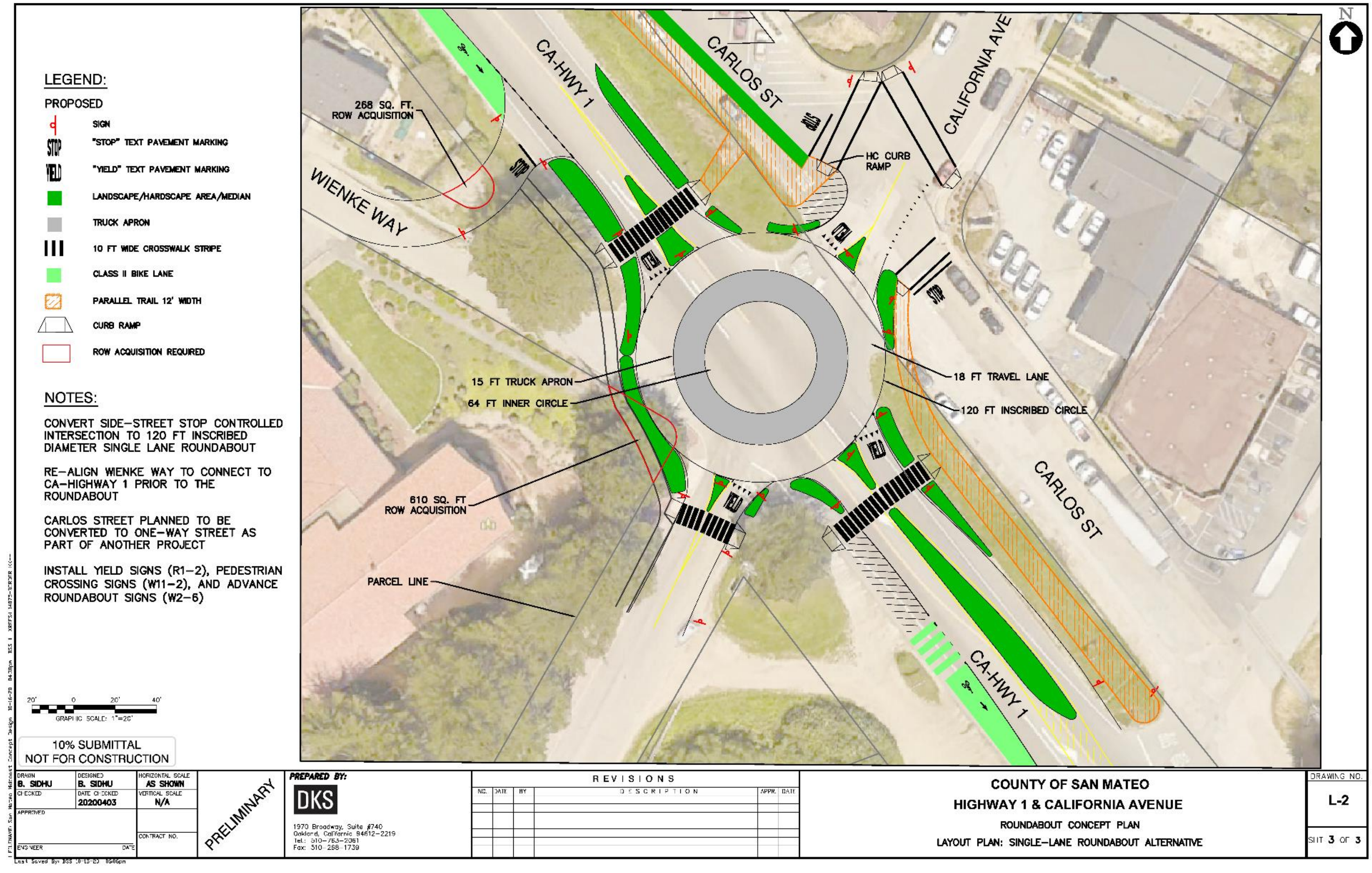
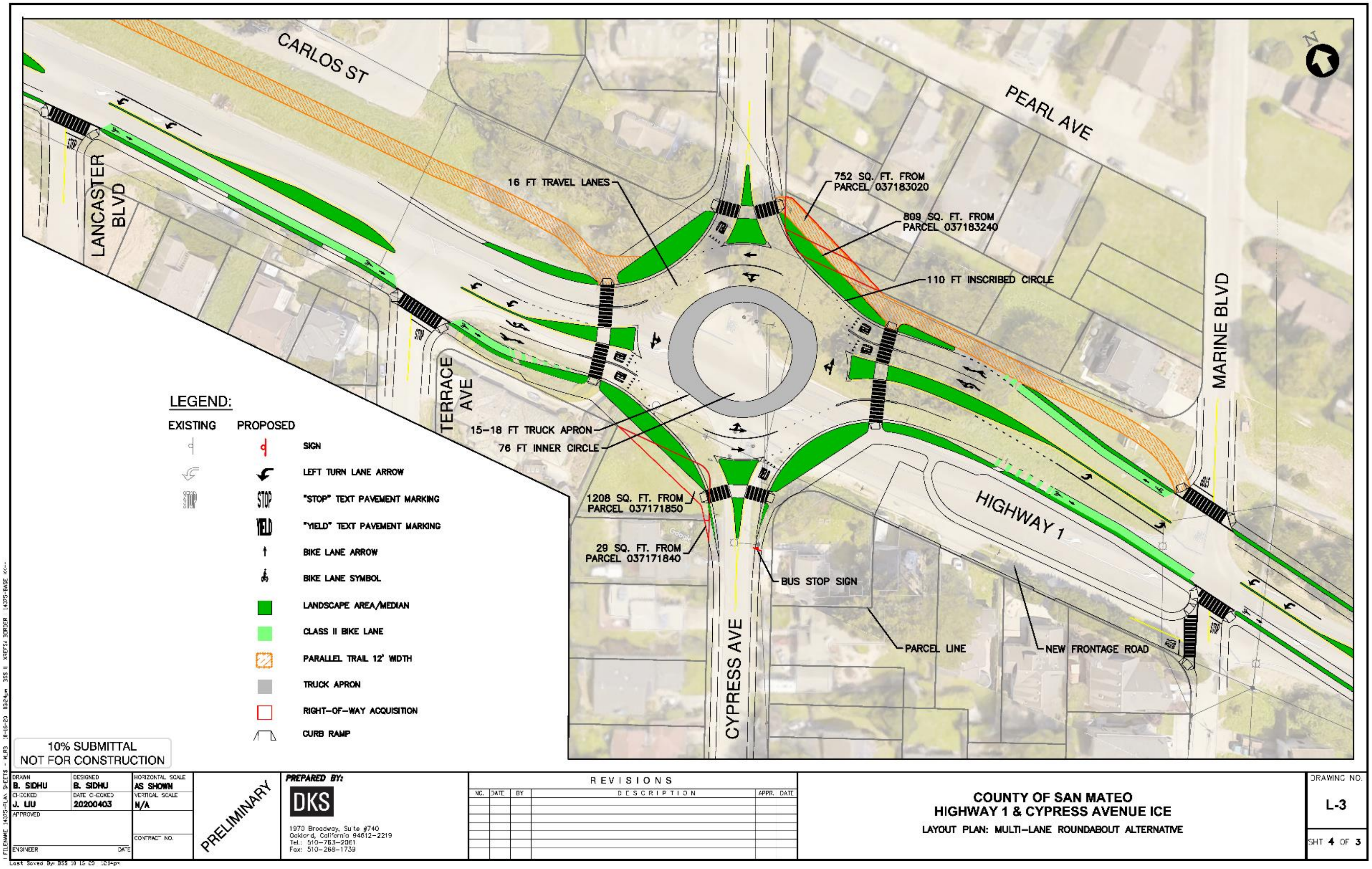


Figure 8: R7. Cypress Avenue and Highway 1 Multi-Lane Roundabout Concept Diagram



R8. Main Street Traffic Calming and Bicycle/Pedestrian Connectivity

Description: Pedestrian access, traffic calming and bicycle improvements in central Montara between 7th and 11th Streets, including curb extensions, sidewalks, marked crossings, mini traffic circle, and bike route.
Source: Highway 1 Safety & Mobility Improvement Study Phase 2 (p.46)
Rationale: Traffic safety concern and bicycle and pedestrian access – reduce traffic speeds in central Montara, enhance access to local businesses, and to the Parallel Trail.
Location: Main Street in Montara from 7th St to 11th St
Discussion: The recommended project aims to address traffic safety concerns of neighborhood speeding and unsafe conditions for people walking and bicycling. The project would include curb extensions and marked crosswalks with advanced yield markings and signs at uncontrolled locations at all intersections on Main Street from 7th St to 10th St, and a mini circle at Main and 7th Street. 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 11th Street, and Class III Bike Route for extent. This project is a companion project to Pe2. Highway 1 Multimodal Parallel Trail and Pe3. Midcoast alignment of California Coastal Trail, since the alignment for both trails will follow Main Street in Montara. The design of all features will accommodate SamTrans buses.

Example of an ADA-compliant curb ramp, high-visibility crosswalk, and advanced stop bar

R9. CARLOS STREET REALIGNMENT TO 16TH STREET

Description: Realign northern terminus of Carlos Street at Highway 1 to connect to 16th Street.
Source: Connect the Coastside
Rationale: Traffic safety and circulation concerns – address conflicting turning movements on Highway 1 at Carlos St / 16th St and poor sight distance, improve pedestrian and bicycle circulation
Location: Highway 1 and Carlos Street
Discussion: Carlos Street provides direct access to central Moss Beach, residential areas, and will be the future alignment of the proposed Parallel Trail (Pe2). The recommended project aims to: 1) address the poor sight distance for turning vehicles from Carlos Street onto Highway 1 (northbound or southbound); 2) eliminate the current conflict of left-turning vehicles from Highway 1 southbound to Carlos Street and Highway 1 northbound to Lighthouse Drive; 3) improve future circulation by directing vehicles to a future controlled intersection (16th St), and 4) improve bicycle and pedestrian connections via the Parallel Trail. The project will 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 paved edge of Highway 1). Access to Carlos Street at its northern terminus will be via 16th Street and the future Highway 1 and 16th Street intersection control (R5).

Informal gravel road connecting Carlos Street to 16th Street

R10. Carlos Street Traffic Calming

Description: Striping, signage, and completion of missing sidewalk, with conversion to one-way to accommodate the Parallel Trail and calm traffic in central Moss Beach.
Source: Highway 1 Safety & Mobility Improvement Study Phase 2 (p.58-59), Connect the Coastside
Rationale: Traffic safety, circulation, and deficiency concern – addresses vehicular speeding in central Moss Beach and accommodating Parallel Trail, which addresses deficiencies in delay index on Highway 1
Location: Carlos Street between Etheldore Street/Vallemar Street and Vermont Avenue
Discussion: The recommended project aims to: 1) address vehicular speeding in central Moss Beach, 2) accommodate the Parallel Trail to address the forecasted deficiency in the delay index, 3) address traffic circulation and safety concerns due to the forecasted intersection control at California Avenue and Highway 1; 4) promote walking and bicycling to the area; and 5) increase the parking supply by defining parking spaces. The project would convert Carlos Street to one-way southbound from Etheldore Street to California Avenue, and change the orientation of existing angled car parking to face south. The project would also change the orientation of Carlos St between California and Vermont Avenues to one-way northbound to accommodate the proposed roundabout at California Avenue and Highway 1 (R6). The project would designate parallel car parking spaces along the west side of Carlos Avenue, add stop signs on Virginia and Vermont Avenues southbound, east of Carlos St, and complete the missing sidewalk between Etheldore Street and California Avenue (near restaurant). The project includes striping crosswalks at Carlos Street and California Avenue.

Carlos Street, south of Etheldore Street

R11. Highway 92 / Highway 35 (East, Lower) Intersection Improvements

Description: Intersection improvements to facilitate pedestrian and bicycle crossings and improve signal timing.
Source: Connect the Coastside
Rationale: Performance standard and traffic safety concern – add appropriate pedestrian and bicycle infrastructure to allow for safe crossings and improve signal timing to address deficiencies
Location: Highway 92 and Highway 35 at eastern, lower intersection
Discussion: The existing signalized intersection of Highways 92 and 35 (eastern, lower) near I-280 does not have any marked crossings or infrastructure to support walking and bicycling and connect the Crystal Springs Trail on opposite sides of Highway 92. Under projected conditions, this intersection will not meet intersection level of service performance standards. The proposed project would improve the intersection, including marked pedestrian crossings, pedestrian signal heads, ADA curb ramps, sidewalk to connect to the trail, and modified signal timing.

Example of a pedestrian countdown signal head

R12. Highway 92 / Highway 35 (West, Upper) Intersection Control

Description: Add intersection control and crossing improvements to facilitate connections for trail users and turning movements for motorists.
Source: Connect the Coastside, SFPUC Southern Skyline Ridge Trail Extension Project
Rationale: Performance standard, traffic safety and circulation concerns - add appropriate pedestrian and bicycle infrastructure to allow for safe crossings and add intersection control to address projected deficiencies.
Location: Highway 92 and Highway 35 at western, upper intersection
Discussion: A section of the Bay Area Ridge Trail currently runs north of this intersection and the San Francisco Public Utilities Commission (SFPUC) released a draft Environmental Impact Report (DEIR) in June 2020 for the Southern Skyline Boulevard Ridge Trail Extension[21], which would extend the Bay Area Ridge Trail north and south of Highway 92. As described in the SFPUC's DEIR, Caltrans has explored various options to address existing congestion at Highway 92 and Highway 35 (west, upper) due to Level of Service F for vehicles northbound on Highway 35 turning left to westbound Highway 92 during weekday peak hours. Options explored include a grade separated interchange intersection, traffic signals, roundabout, marked crossing with flashing beacon, and bridge crossing; however, there have been concerns with conceptual designs due to speeds, sight distances, and topography as well as the environmental impacts of alternatives considered.

Connect the Coastside's traffic analysis based on the Maximum Buildout Forecast shows that in the future, the intersection of Highway 92 and Highway 35 (western, upper) would not meet intersection level of service standards, so intersection control would likely be needed in the future. For the purposes of the Mitigated Transportation Performance analysis on p.133, Connect the Coastside assumes implementation of a traffic signal, pending an Intersection Control Evaluation, but recognizes the challenges associated with this design. Due to the complexity of this location and need for additional study to accommodate trail users, pedestrians, bicyclists, transit riders, and turning vehicles, and in addition environmental and right of way constraints, Connect the Coastside recommends that Caltrans, San Mateo County, SFPUC, and others lead a collaborative community process to formulate a detailed recommendation and execute an agreement on the design, funding, and construction of the preferred solution(s).

[21] Draft Environmental Impact Report for proposed SFPUC Southern Skyline Boulevard Ridge Trail Extension Project available at https://ceqanet.opr.ca.gov/1998082030/10

R13. Highway 92 Truck Signs

Description: Add signage to Highway 92 to direct trucks to stay in the right lane
Source: Connect the Coastside
Rationale: Circulation concern
Location: Highway 92 prior east of Pilarcitos Creek (37.493197, -122.380490), and before the start of the retaining wall section between Pilarcitos Creek and SR-35 (37.491298, -122.375909)
Discussion: Trucks typically travel at slower speeds and this low-cost recommendation can help improve circulation and reduce delay in Highway 92 by having trucks stay to the right, allowing other vehicles to pass.

Figure 9: Trucks Use Right Lane Signage (R4-5

R14. Highway 92 Left-turn Pockets

Description: Provide left-turn pockets at local businesses with high traffic on Highway 92.
Source: Connect the Coastside
Rationale: Circulation and traffic safety concern – promote efficient highway traffic flow so turning vehicles do not block the single-lane of travel.
Location: Highway 92 at key activity generators such as: Half Moon Bay Nursery (11691 San Mateo Rd), Sun Studios Garden Center (12001 San Mateo Rd), Lemos Farm / Repetto's Florist (12320 San Mateo Rd), Pastorino Farms (513 San Mateo Rd), Repetto's (381 San Mateo Rd), and Spanish Town (276 San Mateo Rd).
Discussion: Left-turn pockets at major businesses along Highway 92 can improve business access and promote safe and efficient highway traffic flow by preventing turning vehicles from restricting flow. The recommended locations are subject to change based on future demand. Some locations may require highway widening, grading/fill, utility relocation, and/or retaining walls.

PEDESTRIAN (PE)

PE1. NEW AND IMPROVED CROSSINGS OF HIGHWAYS 1 AND 92

Description: Improve existing and add new pedestrian crossings on Highways 1 and 92, including: new overcrossing south of the Highway 1 and Carlos Street intersection, additional striping at existing crossings at Highway 1 and Coronado Street intersection, additional flashing beacon at Highway 1 and Virginia Ave, and new marked crossings with flashing beacons at other locations.
Source: Highway 1 Safety and Mobility Improvement Study Phase 2 (p.24-27), Highway 1 Safety & Mobility Improvement Study Phase 2 (p.51), and Connect the Coastside.
Rationale: Traffic safety, circulation, and accessibility concerns – consolidate pedestrian crossing locations based on key destinations and improve existing crossing to create more predictable pedestrian crossings and improve safety.
Location:

- New and improved marked pedestrian crossings with flashing beacons and signage at uncontrolled (no signal, roundabout, or stop sign) locations on Highway 1 at: north of Gray Whale Cove Parking lot, Montara Mountain Trailhead/McNee Ranch Parking Lot, Montara State Beach (1st St), 2nd St, 7th St, Virginia Ave (improve existing), Capistrano Road (N), 2 locations to-be determined between Sam's Chowder House and Coronado St, Medio Ave, and Mirada Rd; Highway 92 at Pilarcitos Creek Road and Pilarcitos Quarry Road
- New pedestrian and bicycle overcrossing of Highway 1 south of Carlos Street
- Improve existing controlled crossing[22] at Highway 1 and Coronado Street

Discussion: Without safe and accessible crossings, walking and taking transit for transportation becomes unsafe and challenging. There is one marked crossing at Highway 1 and Virginia Avenue that is uncontrolled with no flashing beacon, and otherwise no marked crossings for the nearly six-mile stretch between the Tom Lantos Tunnel and Capistrano Road (south). There are no marked pedestrian crossings of Highway 92.

Marked pedestrian crossings must be accompanied with additional infrastructure for safety. Connect the Coastside recommends using pedestrian hybrid overhead beacons or Rectangular Rapid Flash Beacons (RRFBs) to accompany any uncontrolled marked pedestrian crossing. Additional infrastructure, such as raised medians per the Highway 1 Safety and Mobility Study, should be evaluated as part of future detailed design at the project-level. Crossing locations are recommended based on pedestrian demand, including: access to northbound or southbound bus stops on either side of Highways 1 and 92, connecting trailheads and/or recreational destinations to their adjacent parking areas or neighborhood, and access to central business districts in each community.

[22] Note: Connect the Coastside recommends improvements to the Highway 1 and Capistrano Road (S) intersection, which is listed separately as project Pe8 as it includes additional infrastructure recommendations

Example of both RRFB and overhead Pedestrian Hybrid Beacon in San Anselmo, California

Initially recommended by the Highway 1 Safety and Mobility Study, the proposed overcrossing of Highway 1 south of Carlos Street would create a continuous and safe crossing for the California Coastal Trail across Highway 1, connecting with the Multimodal Parallel Trail. The natural grade on either side of Highway 1 would likely make providing the overcrossing cost less than at other locations by reducing ramps necessary to provide appropriate grades for accessibility.

Highway 1 and Coronado Street is an existing signalized location that includes one marked crossing of the freeway. The proposed project would improve the crossing by adding high-visibility crosswalk markings on all legs, advanced stop bars, pedestrian signal heads, and signage.

PE2. HIGHWAY 1 MULTIMODAL PARALLEL TRAIL

Naomi Patridge Trail in Half Moon Bay

Description: A continuous walking and bicycling facility along the east side of Highway 1 consisting of Class I paths, sidewalks, and Class III Bike Route, with marked crossings of streets intersecting streets with the path.
Source: Highway 1 Safety and Mobility Improvement Study Phase 2 (p.23, 25-27), Connect the Coastside
Rationale: Performance standard deficiency for delay index, traffic safety concerns, and multimodal accessibility
Location: Primarily Class I Bicycle and Pedestrian Path on the east side of Highway 1 from Mirada Road to 2nd Street in Montara, with Class III Bike Route with Sharrows and pedestrian path (sidewalk or trail) on Main St from 2nd to 11th and Carlos St north of Alley to Sierra.
Discussion: The Midcoast Multimodal Parallel Trail (Parallel Trail) will provide a continuous, car-free way to safely access Midcoast communities, town centers, schools and recreational destinations without having to travel on the highway. The Multimodal 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 Trail will span from Montara south to Miramar where it will connect with the Naomi Patridge Trail in Half Moon Bay. The Multimodal Parallel Trail segment from Coronado to Mirada Road (approximately 0.8 miles) has been funded and construction is expected to begin in 2021 and will serve as a safe route for students attending El Granada Elementary School and the Wilkinson School.

By providing residents the opportunity to walk and bicycle throughout the urbanized Midcoast, congestion on the highway should improve. Providing a high-quality continuous facility also serves to meet a performance standard deficiency for the delay index for Highway 1. The Parallel Trail would primarily be a Class I Bicycle and Pedestrian Path (12'-wide path with decomposed granite shoulders), with a combination of Class III Bike Route and sidewalks in locations where the Class I Path is not feasible to implement due to right of way constraints. Where the trail crosses side streets, marked crossings and ramps would be provided. The section of Highway 1 between 14th Street and 16th Street is narrow and may require bridging to provide a Class I Path. Additional design considerations were discussed at the Moss Beach Charette (Appendix A), with the presence of endangered species between Highway 1 and Carlos Street in Moss Beach as a key consideration for the alignment of the trail due to the challenges of relocation and/or mitigation for impacts.

PE3. MIDCOAST ALIGNMENT COMPLETION OF CALIFORNIA COASTAL TRAIL

Description: Recommended California Coastal Trail alignment and improvements in the Midcoast including: wayfinding signage, Class I Path, Class III Bike Route, sidewalks, trails, and paths.
Source: Highway 1 Safety and Mobility Improvement Study Phase 2 (p.24-27), Connect the Coastside
Rationale: Traffic safety and multimodal circulation concern – implementing appropriate signage, marked crossings, sidewalks, bike routes, and other infrastructure to define the alignment and access points for the California Coastal Trail, improving circulation and safety for this important Midcoast destination.
Location: Various streets and trails between Point San Pedro (north of Devil's Slide Trail) and Half Moon Bay Coastal Trail
Discussion: The California Coastal Trail (CCT) is envisioned as a continuous, interconnected public trail system spanning over 1,200 miles from Oregon to Mexico made up of a network of public trails, streets, and bikeways for walkers, bikers, equestrians, wheelchair riders and others along the coastline. In the Midcoast, the planned CCT route is approximately 10 miles long from Point San Pedro to Half Moon Bay. Some sections of the Midcoast CCT trail alignment have been built and each section's 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, a San Mateo County Park.

The CCT is and continues to be an important destination for residents and visitors. Defining a preferred alignment and adding infrastructure to support trail use and access (e.g., marked crossings, sidewalks, and paths where needed) will create safer conditions for trail users and more predictable conditions for motorists. Connect the Coastside recommends a Midcoast CCT alignment as shown in the map below, with an emphasis on completing sections that overlap with multimodal transportation needs (south of Highway 1 and 1st Street). Where the alignment of the trail is on local roads, Connect the Coastside recommends a combination of decomposed granite paths (if sidewalks are not present), with Class III Bikeway and wayfinding signage. In some areas, new paths would need to be constructed (such as connecting the two ends of Vallemar Street in Moss Beach). In some cases, the alignment overlaps with other recommended projects (such as the Multimodal Parallel Trail (Pe2)); recommended improvements are described in those projects. Alternate alignments of the CCT from path erosion due to sea level rise would need to be considered in a future planning study recommended by this Plan.

Map 16: Recommended California Coastal Trail (Pe3) and Multimodal Parallel Trail (Pe2) Alignments and Pedestrian Crossings (Pe1)

Figure 10: Before and after visualization of recommended improvements at Highway 1 and 1st Street in Montara

BEFORE

AFTER – End of Multimodal Parallel Trail and marked crossing of Highway 1 to connect to continued alignment of California Coastal Trail

Mock-up courtesy of Christopher Hurte

Note: visualization is for conceptual illustrative purposes only

PE4. HIGHWAY 1 SIDEWALKS IN MOSS BEACH AND MONTARA

Description: Add sidewalks in central Montara and Moss Beach in front of businesses located on Highway 1 and marked crossings of side street intersections with Highway 1
Source: Connect the Coastside
Rationale: Traffic safety concern and multimodal access – create a safe way for pedestrians to access local businesses and reduce vehicular/pedestrian conflicts
Location: Highway 1 between 7th Street and 9th Street, and California Avenue and Marine Boulevard.
Discussion: There are local businesses that front Highway 1 in Moss Beach and Montara that are unsafe to access by walking due to a lack of sidewalk or pathway and many driveways access points. Connect the Coastside recommends adding sidewalks on the east side of Highway 1 between 7th and 9th Streets and the west side of Highway 1 between California Avenue and Marine Boulevard, consolidating driveways where feasible and adding ADA-compliant curb ramps. This will encourage walking to local businesses, increase pedestrian safety and visibility, and minimize vehicular/pedestrian conflicts. This project should be implemented concurrently with R1. Highway 1 Shoulder Treatment.

PE5. CENTRAL MOSS BEACH BICYCLE AND PEDESTRIAN IMPROVEMENTS

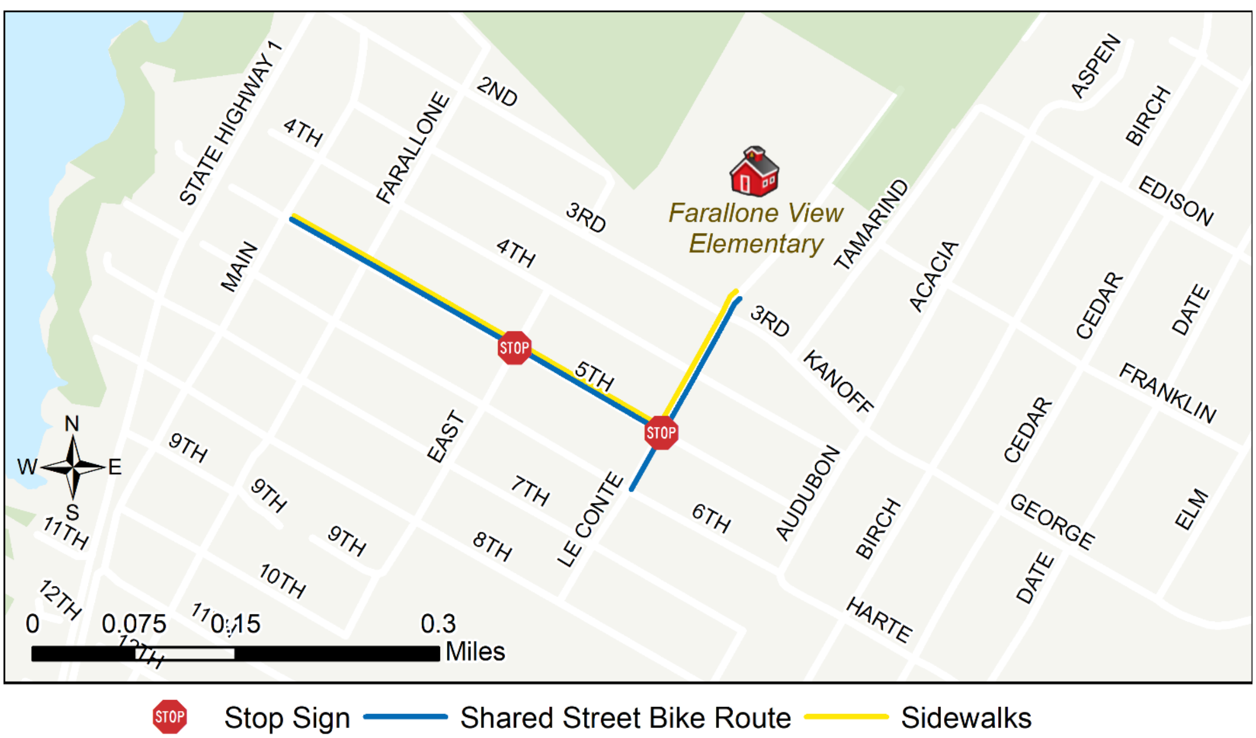
Description: Add sidewalk on west/north sides on Etheldore Street (north of California Avenue) where missing and on California Avenue (south of Etheldore Street) to connect to existing sidewalks. Add Class III Bike Route on California Avenue from Etheldore Street to Highway 1.
Source: Connect the Coastside
Rationale: Traffic safety concern and multimodal access – create a safe way for pedestrians to access local businesses and to transit stop, and reduce vehicular/pedestrian conflict
Location: California Avenue from Etheldore Street to Highway 1 and Etheldore Street, north of California Avenue.
Discussion: Central Moss Beach is an important destination, accessed primarily from Highway 1 at Vallemar Street and California Avenue. There are discontinuous biking and walking connections from the neighborhood to this destination and no paved waiting area for the bus stops at California Avenue and Etheldore Street. This project would improve multimodal access in this area of Moss Beach and reduce vehicular and pedestrian conflict by providing continuous sidewalks.

Class III Bike Route with Sharrows on Carlos Street in Moss Beach

PE6. MONTARA SAFE ROUTES TO SCHOOL

Description: Various improvements to make it easier to walk and bike to Farallone View Elementary School, including sidewalks on one side of the street, Class III Bike Routes, improved crossings, bicycle parking and stop signs.
Source: Connect the Coastside and Farallone View Walk and Bike Audit Final Report (2014)
Rationale: Traffic safety concern, circulation, and multimodal access; add appropriate infrastructure to increase the number of students walking and bicycling to school to improve peak hour circulation and congestion issues
Location: 5th Street from Main Street to Le Conte Avenue, Le Conte Avenue from 6th Street to Kanoff Avenue, and 6th Street from Le Conte Avenue to Sunshine Valley Road
Discussion: Parents dropping off and picking up their children from school can contribute to peak hour traffic congestion and neighborhood safety concerns, such as children crossing the street at various locations. Safe Routes to School (SRTS) is a comprehensive approach to enable and encourage students to walk or bicycle to school. An integral part of SRTS is making physical improvements to increase student safety. In 2014, the San Mateo County Office of Education through its SRTS program sponsored a walk and bike audit of Farallone View. The results of this report are available at: http://cusd-hmb.org/CUSD_file/SR2S_FV-Walk-Audit_3-17-14.pdf
Connect the Coastside recommends implementing key recommendations from the audit, including continuous walking and bicycling infrastructure to Farallone View (to connect to existing on north side of 5th St from Farallone Ave to East Ave), marked crossings where missing on route, all-way stop at Le Conte/5th and on 5th at East Ave, ramps, and Class III Bike Routes.

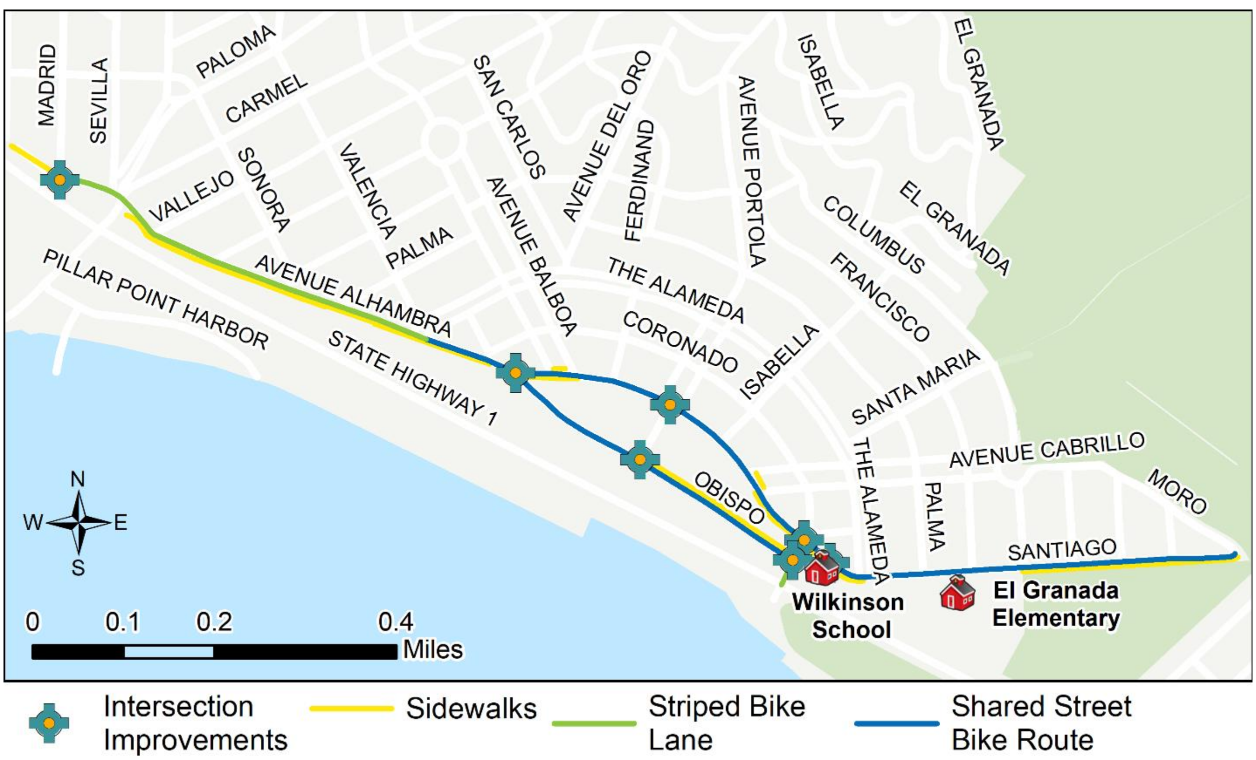
Map 17: Pe6. Montara Safe Routes to School



PE7. EL GRANADA SAFE ROUTES TO SCHOOL

Description: Various improvements to make it easier to walk and bike to El Granada Elementary School and the Wilkinson School, including sidewalks, Class III Bike Routes, traffic calming, and improved crossings.
Source: Connect the Coastside
Rationale: Traffic safety concern, circulation, and multimodal access – add multimodal infrastructure to increase the number of students walking and bicycling to school to improve peak hour circulation and congestion issues
Location: Avenue Alhambra, Obispo Road from Avenue Alhambra to Coronado Street, and Coronado Street from Highway 1 to Avenue Alhambra
Discussion: As described in project Pe6, Connect the Coastside recommends continuous walking and bicycling infrastructure to support Safe Routes to School. This project complements the Parallel Trail improvements by recommending continuous sidewalks, Class III Bikeways, and crossing improvements from the northern area of El Granada to walk to the Wilkinson School and El Granada Elementary School. The proposed improvements would also enable better access to transit stops. Crossing improvements would be subject to further detailed design and are recommended to include high-visibility marked crossings, advanced stop bars, ADA curb ramps, and painted islands at some locations. Connect the Coastside recommends engaging in SRTS-efforts with a walk and bicycle audit to confirm the approach.

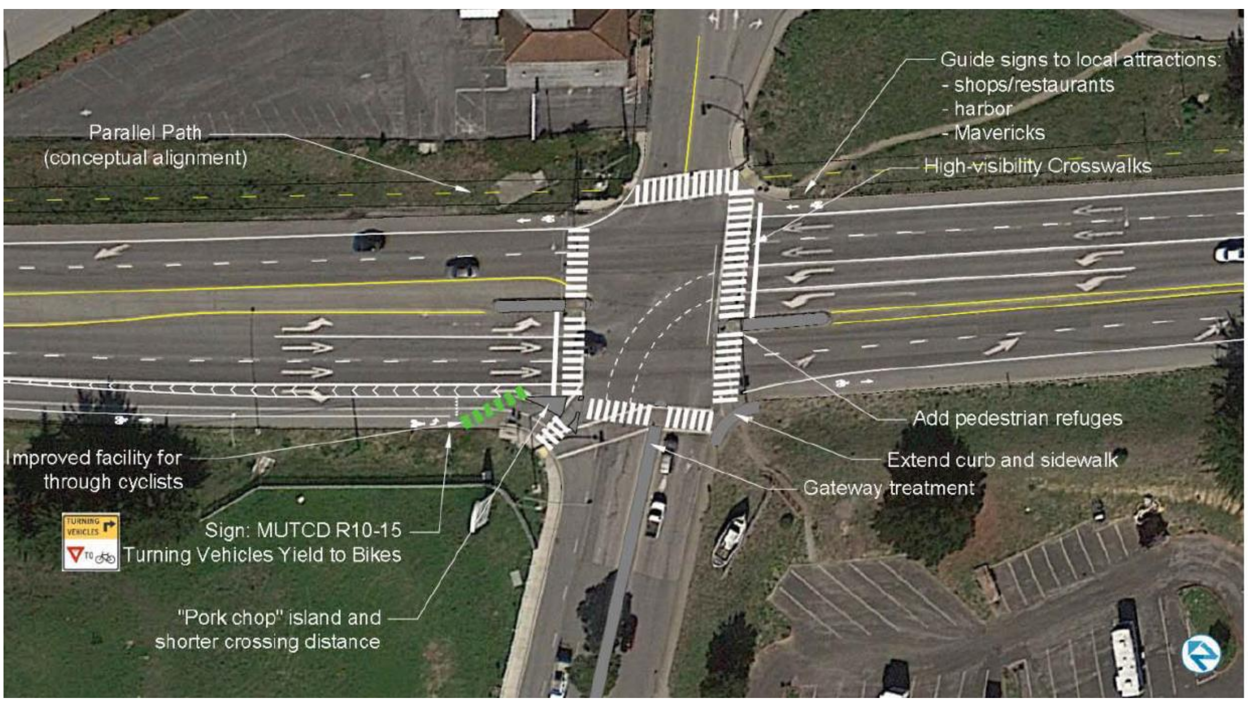
Map 18: Pe7. El Granada Safe Routes to School



PE8. CAPISTRANO ROAD (SOUTH) INTERSECTION IMPROVEMENTS

Description: Improve intersection for pedestrian access including high visibility crosswalks with advanced stop bars, pedestrian refuge islands, MUTCD R10-15 Signs, guide signs, and pork chop island.
Source: Connect the Coastside and Plan Princeton (draft)
Rationale: Traffic safety concern and multimodal access – enhance pedestrian and bicycle connectivity between Princeton and El Granada
Location: Highway 1 and Capistrano Road (south)
Discussion: The intersection of Capistrano Road (S) and Highway 1 is currently signalized and is not forecasted to be deficient under Maximum Buildout Forecast conditions for intersection LOS, but could be improved for people walking and bicycling since it is an important entry point to both Princeton and El Granada and connects the two. The proposed project would: improve pedestrian and bicyclist visibility by adding high visibility marked crossings and signage; create safe spaces for pedestrians and shorten crossing distances with pedestrian refuge islands and pork chop island; and improve circulation by adding wayfinding signage. The conceptual design may change with further community input on Plan Princeton. This project complements project B3. Capistrano Road Bikeways.

Figure 11: Highway 1 and Capistrano Road (S) Conceptual Improvements



BIKEWAYS (B)

B1. HIGHWAY 1 BIKEWAY

Description: Class II Bike Lanes on Highway 1
Source: Highway 1 Safety and Mobility Improvement Study Phase 2 (p.24-27), Unincorporated San Mateo County Active Transportation Plan (Draft), C/CAG Comprehensive Bicycle and Pedestrian Plan (Draft)
Rationale: Traffic safety concern, multimodal access, and performance standard deficiency – provide a designated bikeway for confident cyclists traveling longer distances and define consistent lane widths on Highway 1 with the restriping
Location: Highway 1 from Tom Lantos Tunnel to Mirada Road (County boundary)
Discussion: Although there are no designated and continuous bicycle facilities connecting Midcoast communities on Highway 1, it continues to serve as an important bikeway for commuting and events such as the AIDS/LifeCycle fundraiser. Various past and ongoing planning efforts have recommended Class II Bike Lanes along Highway 1 to create safer cycling conditions and encourage bicycling for transportation, especially for cyclists going long distances and traveling at higher speeds. The recommended Class II Bike Lanes would provide an alternate bikeway to the Parallel Trail and could help address the delay index performance standard deficiency under Maximum Buildout Forecast conditions.

Photo of cyclists on Highway 1 in the Midcoast courtesy of AIDS/LifeCycle

B2. AIRPORT STREET BIKEWAY AND PRINCETON CONNECTIONS

Description: Bicycle and pedestrian connections from Moss Beach to Princeton via Cypress and Airport St.
Source: Highway 1 Safety and Mobility Improvement Study Phase 1, Plan Princeton (Draft), Unincorporated San Mateo County Active Transportation Plan (Draft), and Connect the Coastside.
Rationale: Traffic safety concern and multimodal access – provide traffic calming measures and designated bikeways and walkways to connect residents and visitors to key destinations in Princeton and reduce vehicular speeds
Location:

- Cypress Ave from Highway 1 to Airport St: Class III Bike Route with pedestrian path on north side
- Airport St from Cypress Ave to Cornell Ave options: (1) Class I Path on east side, (2) Class II Bike Lanes with sidewalk on west side, or (3) Class III Bike Route with sidewalk on west side
- Class III Bike Route on Cornell Ave from Airport St to Broadway, and Broadway from Cornell Ave / California Ave to Prospect Way.

Discussion: Cypress Avenue and Airport Street are bypasses to Highway 1 and connect to destinations like Princeton, Fitzgerald Marine Reserve, Pillar Point Bluff Park, and SamTrans Route 17. Airport Street provides access to Pillar Ridge Manufactured Housing Community and abuts the Half Moon Bay Airport. During Connect the Coastside's 2020 community engagement, stakeholders shared their concerns around traffic safety including excessive speeding and lack of continuous walking or bicycling facilities. There are no sidewalks (except in front of Pillar Ridge) and shoulders are often blocked by parked cars, making it unsafe for residents to walk the short distance to Princeton. Residents on Cypress Avenue started Safe Streets Coastside Change.org petition to address these concerns, and has over 300 signatures as of November 2020[23]. Connect the Coastside recommends a future planning study to engage residents and other stakeholders, including local business owners, Department of Public Works, Federal Aviation Administration, SamTrans, and County Parks, to determine the design of bicycle and pedestrian facilities. Preliminary recommendations for cost estimate purposes are described under "Location" above.

SamTrans bus stop across from Pillar Ridge Manufactured Housing Community (Photo courtesy of Google)

[23] Safe Streets Coastside Change.org petition as of 11/28/20 - https://www.change.org/p/county-of-san-mateo-safe-streets-coastside-4bed45c1-9f38-4480-b1cc-a1b7e901c6c2?redirect=false

B3. CAPISTRANO ROAD BIKEWAY

Description: Bikeway designations on Capistrano Road, including Class III Bike Route with paved shoulders with sharrows.
Source: Highway 1 Safety and Mobility Improvement Study, Plan Princeton (Draft), Unincorporated San Mateo County Active Transportation Plan (Draft)
Rationale: Traffic safety concern and multimodal access – provide a designated bikeway to connect residents and visitors to key destinations in Princeton and reduce vehicular speeds
Location: Capistrano Road from Highway 1 (northern end) to Avenue Alhambra:

- Highway 1 north to Prospect Way: Class III Bike Route with Paved Shoulders
- North of Prospect Way to Highway 1 south: Class III Bike Route with Sharrows
- Highway 1 south to Avenue Alhambra: Class II Bike Lanes

Discussion: Capistrano Road connects those traveling southbound on Highway 1 directly into Princeton and is a particularly important connection for cyclists and those who may want to access any future Denniston Creek trail facilities at Capistrano Road (N) and Highway 1. It allows Highway 1 southbound cyclists to avoid turning at the intersection at Capistrano Road (S) and bike on a lower-volume street. Providing a designated bikeway will increase access to local businesses and increase the number of trips taken by bicycle, contributing to reduced congestion.

B4. HIGHWAY 92 BIKEWAY

Description: Bikeway designation on Highway 92 of Class III and widening shoulders where feasible
Source: Connect the Coastside, Unincorporated San Mateo County Active Transportation Plan (Draft), and C/CAG Comprehensive Bicycle and Pedestrian Plan (Draft)
Rationale: Traffic safety concern and circulation – increase safety for bicyclists traveling on Highway 92 and shoulders for breakdowns and passing in emergencies
Location: Highway 92 between Half Moon Bay (County boundary) and Canada Road
Discussion: Highway 92 is the primary connection between the coastside and the bayside, and provides access to trailheads and local businesses, and SamTrans Route 294 bus stops. Aside from transit, there are no multimodal connections along Highway 92 and no alternate bikeways connecting the San Mateo County bayside to coastside. Providing a separated bikeway along Highway 92 would likely require extensive grading and fill and impacts to environmental resources. Connect the Coastside recommends providing widened shoulders and Class III Bike Route were feasible to facilitate multimodal connections to existing bus stops, local businesses, and the anticipated increased demand for cycling to and from the Bay Area Ridge Trail.

B5. Bicycle Parking

Description: Install short-term bicycle parking at key destinations throughout the Midcoast
Source: Connect the Coastside and Unincorporated San Mateo County Active Transportation Plan (Draft)
Rationale: Multimodal accessibility – provide adequate bicycle parking as an end-of-trip facility to encourage more bicycling.
Location: Various locations throughout the Midcoast at key destinations including central areas of Montara, Moss Beach, El Granada, Princeton, and Miramar; trailheads; parks; schools; public facilities and transit stops.
Discussion: Secure bicycle parking as a key element of the bicycle network especially at end-trip locations. Two common types of bicycle parking are

- Inverted U-racks, which are typically used for short-term trips and support the bicycle to stand upright at two points, and
- Bicycle lockers, which are typically used for longer-term trips (such as full-day of work) and enclose the bicycle completely.

Map 19: Recommended Bicycle Parking

The proposed project would add short-term bicycle parking at all Midcoast destinations to make bicycling a viable form of transportation, much like vehicular parking is needed to make travel by car easy. The County can partner employers, such as Seton Coastside Medical Center to encourage the implementation of long-term bicycle parking.

Transit (T)

T1. Transit Stop Improvements

Description: Work with San Mateo County Transit District to provide various amenities at existing transit stops to increase safety and comfort, including, where applicable: benches, shelters, signage, and lighting.
Source: Connect the Coastside
Rationale: Multimodal access and transit stop guidelines – providing greater transit stop amenities could encourage more residents to take transit
Location: Midcoast bus stops, primarily for SamTrans Route 17
Discussion: As described in the Transit section of Existing Conditions (page 67), bus frequencies are between 30 and 120 minutes and nearly all bus stops in the Midcoast are a pole with a sign with no additional amenities. Connect the Coastside recommends improving all transit stops with ADA-accessible boarding zone, signage and benches; current estimates assume that 95% of stops require such upgrades. Shelters and lighting should be prioritized at high ridership locations, especially at employment sites and in central business areas (about 5% of stops). Providing amenities can make waiting for transit less onerous and could support additional ridership in the future. Older and disabled persons are more likely to be transit-dependent, making benches critical amenities for health and safety.

T2. Recreational Shuttle

Description: Work with San Mateo County Transit District to implement recreational Shuttle(s) that run from 1) Hillsdale Caltrain Station to the Midcoast via Highway 92, continuing north to Gray Whale Cove and returning, and 2) Colma BART to Highways 1 and 92 intersection and returning.
Source: Connect the Coastside and previous Coastside Beach Shuttle[24]
Rationale: Performance standard deficiency and multimodal access – provide alternate means for those living outside of the Midcoast to visit and to travel without a car to key coastside destinations
Location: Highways 1 and 92
Discussion: A portion of Midcoast congestion leading to projected deficiencies is due to regional growth and visitors to the coast during weekend peak periods. Public transportation to and along the coastside is limited and does not provide the flexibility or frequency necessary to make it viable for visitors outside of the Midcoast. In 2017, the San Mateo County Transit District funded a Coastside Beach Shuttle program, which connected SamTrans Route 17 bus stops in Half Moon Bay to other destinations such as the Fitzgerald Marine Reserve. Connect the Coastside recommends expanding upon this by providing weekend recreational shuttles to improve weekend peak hour conditions. The shuttles would stop at several key destinations on the Coast and connect to local Route 17 transit stops.

[24] https://cmo.smcgov.org/local-shuttle-bus-coast-san-mateo-county-transportation-authority

T3. Increased Midcoast Bus Service

Description: Work with San Mateo County Transit District to provide additional bus service on existing lines serving the Midcoast, new commute express bus service between the Half Moon Bay and the Colma BART station, and align bus schedules to support student travel needs.
Source: Connect the Coastside
Rationale: Additional service will encourage more residents to take transit for everyday transportation and support the implementation of project T2 to address first/last mile connections.
Location: Highway 1, SamTrans Route 17
Discussion: Although current SamTrans ridership does not support expansion to bus service, addressing traffic congestion and climate change will necessitate a significant reduction in trips by automobile and a dramatic increase in transit trips. Connect the Coastside recommends working with regional partners, including the Transit District, C/CAG, and others, to expand transit service on the Midcoast and increasing weekday peak hour frequencies of Route 17 to 20 minutes, aligning service with student travel needs, and increasing weekend frequencies. This project would also increase the frequency of buses that travel to and from the coastside. Lastly, the project would create an Express Bus service from the intersection of Highways 1 and 92 to Colma BART station and back during the weekday peak periods. Providing express bus service should be coordinated with the establishment of necessary park and ride locations; Connect the Coastside does not recommend any specific locations. This is an aspirational project, necessary to achieve the County's greenhouse gas emission targets and to improve mobility in the Midcoast for residents and visitors alike.

PARKING (PA)

The lack of parking capacity for weekday commuters and the large amount of weekend recreational parking demand discourages commuter and visitor 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 Local Coastal Program recommends formalized parking with clear signage for visitors and park and ride users, and includes several policies related to parking:

- 2.52(b) to provide public access parking that is not time restricted and signage indicating parking is available.
- 2.54 to encourage the use of transit by developing a park and ride facility near the intersection of Highways 1 and 92.
- 10.22(c) details specific criteria when developing or relocating new off-street parking facilities for shoreline access areas, such as preference for sites that are currently used for informal shoreline access parking.
- Table 10.6 which includes site specific recommendations for shoreline destinations, which specifies developing or expanding parking at locations including Montara State Beach, Point Montara, at Vallemar Street and Juliana Avenue, Pillar Point Harbor, Princeton Beaches, and others.

Connect the Coastside recommends improvements as stated below and the need for a future comprehensive parking study to confirm the locations, amounts, and design of parking. Park and ride lots should be established in conjunction with expanded transit service or provision of express buses. Similarly, Connect the Coastside does not include recommendations for parking on Highway 1 due to necessary future coordination; for example, establishing formal parking lots to serve Surfer's Beach.

PA1. UPPER GRAY WHALE COVE PARKING LOT IMPROVEMENTS

Description: Improve existing dirt parking lot with pervious concrete, improve drainage and increase parking spaces; provide path of travel to pedestrian crossing of Highway 1
Source: San Mateo County Coastside Access Study (2015)
Rationale: Circulation and traffic safety concerns – defining parking stalls will help increase parking capacity, and reduce parking alongside Highway 1, improving highway circulation
Location: Gray Whale Cove Trail Parking Lot (south of Gray Whale Cove State Beach, east of Highway 1)
Discussion: Connect the Coastside recommends adding pervious pavement and marking parking stalls to ensure that this beach access parking lot is usable year-round and maximizes parking capacity. Paving and marking parking stalls for the Gray Whale Cove Parking Lot can reduce unsafe behaviors along the Highway and reduce delay and congestion caused by visitors parking on the shoulder. This project would complement the planned pedestrian crossing of Highway 1 at Gray Whale Cove and turn and acceleration lanes.

Gray Whale Cove Parking Lot

PA2. WAYFINDING

Description: Install wayfinding signage to help orient drivers seeking various Midcoast destinations, including locations of public parking.
Source: San Mateo County Coastside Access Study (2015), Plan Princeton (draft)
Rationale: Circulation and traffic safety concerns – clarifying available parking locations and destinations will reduce circling and behavior that could lead to additional congestion
Location: Various locations throughout the Midcoast
Discussion: Drivers slowing down and blocking travel lanes while searching for parking can add to traffic congestion. Wayfinding signage can help minimize confusion by providing clear and recognizable signage that points people to potential destinations, such as access points to beaches and local businesses, and to direct people to public parking lots and discourage parking along Highway 1. Wayfinding is especially important in the El Granada and Princeton area, where there are many destinations and public parking lots and informal parking. Connect the Coastside recommends a wayfinding study and set-aside for implementation.

Gateway signage at Pillar Point Harbor

MITIGATED TRANSPORTATION PERFORMANCE

The software tools used to assess the impact of mitigations are limited in what they can consider; primarily, they account for projects that impact traffic operations (e.g., a new roundabout, signal timing changes) or increase intersection or roadway capacity (e.g., if lanes were added to the highway). There is a substantial body of research that shows infrastructure interventions that increase the safety of and promote walking, bicycling, and transit use will ultimately reduce the amount of driving and can improve overall traffic. However, these interventions cannot be modeled effectively and are not incorporated in the analysis of transportation performance. Non-infrastructure approaches (policies, planning efforts, and programs) are critical to reducing the overall demand for driving and can improve overall conditions in the long-term. Connect the Coastside's recommended plans, policies, and programs begin on page 139.

INTERSECTION LEVEL OF SERVICE

The table below compares intersection Level of Service (LOS) under existing, maximum buildout forecast, and mitigated maximum buildout forecast conditions. Only intersection operating improvements are incorporated into the model, therefore, the only differences between maximum buildout and mitigated maximum buildout is where intersection controls are recommended (Highway 1 and 16th Street, California Avenue, and Cypress Avenue; and Highway 92 and Highway 35 upper) and locations with signal timing changes (Highway 92 and Highway 35 lower).

As noted in previous sections, the intersection LOS reported for any uncontrolled location is the LOS of the worst approach, which is typically the minor street where vehicles are attempting to turn onto the Highway. Volumes are low on these minor street approaches, except for Cypress Avenue (current and future) and California Avenue (future).

Table 30: Mitigated Maximum Buildout Forecast Conditions Intersection Level of Service Compared to Existing and Maximum Buildout Forecast Conditions

				AM Peak Hour LOS			PM Peak Hour LOS			Weekend (Midday) Peak Hour LOS		
Street Names	**Existing Control Type**	**Mitigated Control Type**	**LOS Standard[1]**	**Existing[2]**	**Maximum Buildout[2]**	**Mitigated Max. Buildout[3]**	**Existing[2]**	**Maximum Buildout[2]**	**Mitigated Max. Buildout[3]**	**Existing[2]**	**Maximum Buildout[2]**	**Mitigated Max. Buildout[3]**
Highway 1												
SR-1 / 2nd St	TWSC	TWSC	C(D)	C	F	F	C	F	F	C	F	F
SR-1 / 7th St	TWSC	TWSC	C(D)	B	C	C	B	C	C	B	C	C
SR-1 / 8th St	TWSC	TWSC	C(D)	C	F	F	D	F	F	E	F	F
SR -1 / 16th St^	TWSC	RAB (1 L)	C(D)	C	F	B	E	F	C	E	F	C
SR -1 / Carlos St	TWSC	TWSC	C(D)	B	C	C	B	C	C	B	C	C
SR-1 / Vallemar St	TWSC	TWSC	C(D)	C	D	D	C	F	F	C	E	E
SR-1 / California Ave	TWSC	RAB (1 L)	C(D)	D	F	B	E	F	C	F	F	B
SR-1 / Virginia Ave	TWSC	TWSC	C(D)	C	F	F	E	F	F	F	F	F
SR-1 / Vermont Ave (WB)	TWSC	TWSC	C(D)	D	F	F	E	F	F	F	F	F
SR-1 / Cypress Ave (EB)	TWSC	RAB (2 L)	C(D)	E	F	A	F	F	A	F	F	A
SR-1 / Etheldore St (South)	TWSC	TWSC	C(D)	C	F	F	D	F	F	E	C	C
SR-1 / Capistrano Rd (North)	TWSC	TWSC	C(D)	C	C	C	C	C	C	D	D	D
SR-1 / Coral Reef Ave	TWSC	TWSC	C(D)	C	F	F	C	F	F	D	F	F
SR-1 / Capistrano Rd (South)	Signalized	Signalized	C(D)	B	C	C	B	C	C	C	C	C
SR-1 / Coronado St	Signalized	Signalized	C(D)	C	D	D	B	D	D	B	E	E
Obispo Rd / Coronado St	TWSC	TWSC	C(D)	B	B	B	B	B	B	B	B	B

SR-1 / Magellan Ave	TWSC	TWSC	C(D)	F	F	F	F	F	F	F	F	F
SR-1 / Medio Ave	TWSC	TWSC	C(D)	F	F	F	F	F	F	F	F	F
SR-1 / Miramar Dr	TWSC	TWSC	C(D)	C	E	E	F	F	F	E	F	F
SR-1 / Mirada Rd	TWSC	TWSC	C(D)	F	F	F	F	F	F	F	F	F
Highway 92												
SR-92 / Ox Mt. Landfill Rd	TWSC	TWSC	C(D)	F	E	E	F	F	F	D	F	F
SR-92 / Skyline Blvd (Upper)	TWSC	Signalized	C(D)	E	F	C	F	F	D	F	F	D
SR-92 / SR-35 (Lower)[4]	Signalized	Signalized	C(D)	B	D	B	C	F	C	D	F	C

[1]LOS standard provided within parenthesis are for any one individual movement

[2]Signalized intersections and all way stop-controlled (AWSC) are reported by the LOS for the intersection; two-way stop controlled (TWSC) intersections are reported with the worst approach's level of service

[3]Mitigations are applied at 16th, California, and Cypress (EB); other intersections LOS are the same as Maximum Buildout since no operational improvements are assumed. Intersection LOS are from SIDRA reports (overall LOS for all vehicles).

[4]Signal timings were updated to better serve demand, improving level of service; signal timings are generally optimized when looking at cumulative conditions.

^ Level of Service analysis was done as part of draft Intersection Control Evaluation memos; LOS for existing, buildout, and mitigated buildout for each time period are reported for HCM 2010 TWSC

DELAY

The table below compares delay under existing, maximum buildout forecast, and mitigated maximum buildout forecast conditions. Delay is measured in terms of travel time for free-flow conditions compared to peak period conditions. Delay can be impacted through interventions that smooth traffic flow, such as adjusting signal timing, adding stacking lanes (allowing more lanes at intersections where queues build up), and turn lanes at uncontrolled intersections.

Highway 1 meets the delay index threshold of 3.0 for all peak periods under Mitigated Buildout Conditions. Highway 92 meets the delay index threshold of 2.0 for all peak periods under Mitigated Buildout Conditions. Like the Intersection Level of Service Analysis, the projects contributing to changes in delay under Mitigated Buildout Conditions are where intersection controls are recommended (Highway 1 and 16th Street, California Avenue, and Cypress Avenue; and Highway 92 and Highway 35 upper) and locations with signal timing changes (Highway 92 and Highway 35 lower). The analysis also accounts for the addition of turn and acceleration lanes along Highways 1 and 92.

Table 31: Mitigated Maximum Buildout Forecast Delay Index Compared to Existing and Maximum Buildout for Highway 1

	FREE FLOW~	**EXISTING**						**MAXIMUM BUILDOUT***						**MITIGATED MAXIMUM BUILDOUT^**					
		AM		**MD**		**PM**		**AM**		**MD**		**PM**		**AM**		**MD**		**PM**	
Highway 1 - Southbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
1st Street to 16th Street	01:00	00:29	0.49	00:33	0.55	00:32	0.53	00:34	0.58	00:48	0.80	00:39	0.66	01:17	1.29	01:20	1.34	01:29	1.49
16th Street to Capistrano (North)	02:59	03:40	1.23	03:56	1.32	03:50	1.28	03:34	1.19	04:02	1.35	03:41	1.23	08:02	2.70	04:11	1.40	05:44	1.92
Capistrano (North) to Mirada Road	02:29	03:10	1.27	03:21	1.35	03:16	1.31	05:43	2.30	07:45	3.12	10:39	4.28	03:52	1.55	04:15	1.71	03:42	1.49
Total	**06:28**	**07:19**	**1.13**	**07:50**	**1.21**	**07:37**	**1.18**	**09:51**	**1.52**	**12:35**	**1.94**	**14:59**	**2.32**	**13:11**	**2.04**	**09:46**	**1.51**	**10:56**	**1.69**
Highway 1 - Northbound	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
Mirada Road to Capistrano (North)	02:36	03:05	1.18	03:29	1.34	03:27	1.32	03:29	1.34	04:54	1.88	04:32	1.74	03:25	1.31	03:46	1.45	03:42	1.42
Capistrano (North) to 16th Street	02:59	03:24	1.14	03:27	1.16	03:28	1.16	03:15	1.09	03:20	1.12	03:24	1.14	03:46	1.26	03:55	1.32	03:56	1.32
16th Street to 1st Street	00:54	01:00	1.11	01:00	1.10	00:56	1.04	01:09	1.28	01:08	1.25	01:06	1.21	01:16	1.40	01:16	1.39	01:13	1.35
Total	**06:29**	**07:28**	**1.15**	**07:56**	**1.22**	**07:51**	**1.21**	**07:53**	**1.22**	**09:22**	**1.44**	**09:01**	**1.39**	**08:26**	**1.30**	**08:57**	**1.38**	**08:52**	**1.37**
~ Free Flow is segment length divided by the speed limit and an output of Synchro																			
* In Maximum Buildout conditions, segments that do not meet the delay index standard of 2.0 are highlighted in red																			
^ In Mitigated Maximum Buildout conditions, all segments meet the proposed delay index standard of 3.0 because parallel bicycle and pedestrian facilities are provided																			

Table 32: Mitigated Maximum Buildout Forecast Delay Index Compared to Existing and Maximum Buildout for Highway 92

	FREE FLOW~	**EXISTING**						**MAXIMUM BUILDOUT***						**MITIGATED MAXIMUM BUILDOUT***					
		AM		**MD**		**PM**		**AM**		**MD**		**PM**		**AM**		**MD**		**PM**	
Highway 92	*Travel Time*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*	*Travel Time*	*Delay Index*
HMB City Limit to I-280 Ramp (EB)	08:42	12:51	1.48	12:51	1.48	12:43	1.46	12:48	1.47	12:39	1.45	12:40	1.46	17:12	1.98	13:10	1.51	13:12	1.52
I-280 Ramp to HMB City Limit (WB)	08:42	12:25	1.43	12:25	1.43	12:49	1.47	12:21	1.42	12:44	1.46	12:45	1.47	12:32	1.44	13:06	1.51	13:05	1.50

RECOMMENDED PLANNING STUDIES

Planning for Sea Level Rise and Coastal Erosion

Addressing the impacts of climate change in the Midcoast, and specifically sea level rise and subsequent impacts on evacuation, will require additional community-engaged planning studies to allow for deeper stakeholder engagement and collaboration with agency partners, data collection and analysis, and identification of specific improvements that incorporate climate resiliency. The County's new Flood and Sea Level Rise Resilience District will take a lead role in planning for and adapting to sea level rise and coastal erosion in the County.

Plan Princeton (described on page 33) is an ongoing community-based planning process to develop a land use plan, update zoning and create a shoreline management strategy that assesses vulnerabilities and identifies policies and improvements necessary to address the impacts of climate change and sea level rise in Princeton. The Princeton shoreline includes areas of unauthorized rip-rap and other measures to protect properties from erosion; however, this piece-meal approach may have exacerbated erosion in unprotected shoreline areas of the harbor. The intent of the Plan Princeton's Shoreline Management Plan is to address sea level rise and coastal erosion in a sustainable, coordinated, adaptable, environmentally acceptable, and economically viable manner, and to restore the beach for public access and habitat. The Plan will provide important data that can support future sea level rise and coastal erosion assessments. Connect the Coastside recommends the following additional planning efforts and studies.

Highway 1 Realignment Plan

Caltrans recognizes the threat of climate change and sea level rise to the transportation system, and in particular to coastal communities, and has developed resources to support local agencies in assessing sea level rise threats as part of the Caltrans project delivery.[25] Highway 1 in the Midcoast is vulnerable to sea level rise, especially in El Granada. Long-term realignment of Highway 1 may be necessary to comprehensively address sea level rise threats. Connect the Coastside recommends that in partnership with Caltrans, Granada Community Services District, and others, the County engage in a community-based planning process to assess future realignment options of Highway 1 due to impacts from climate change and sea level rise.

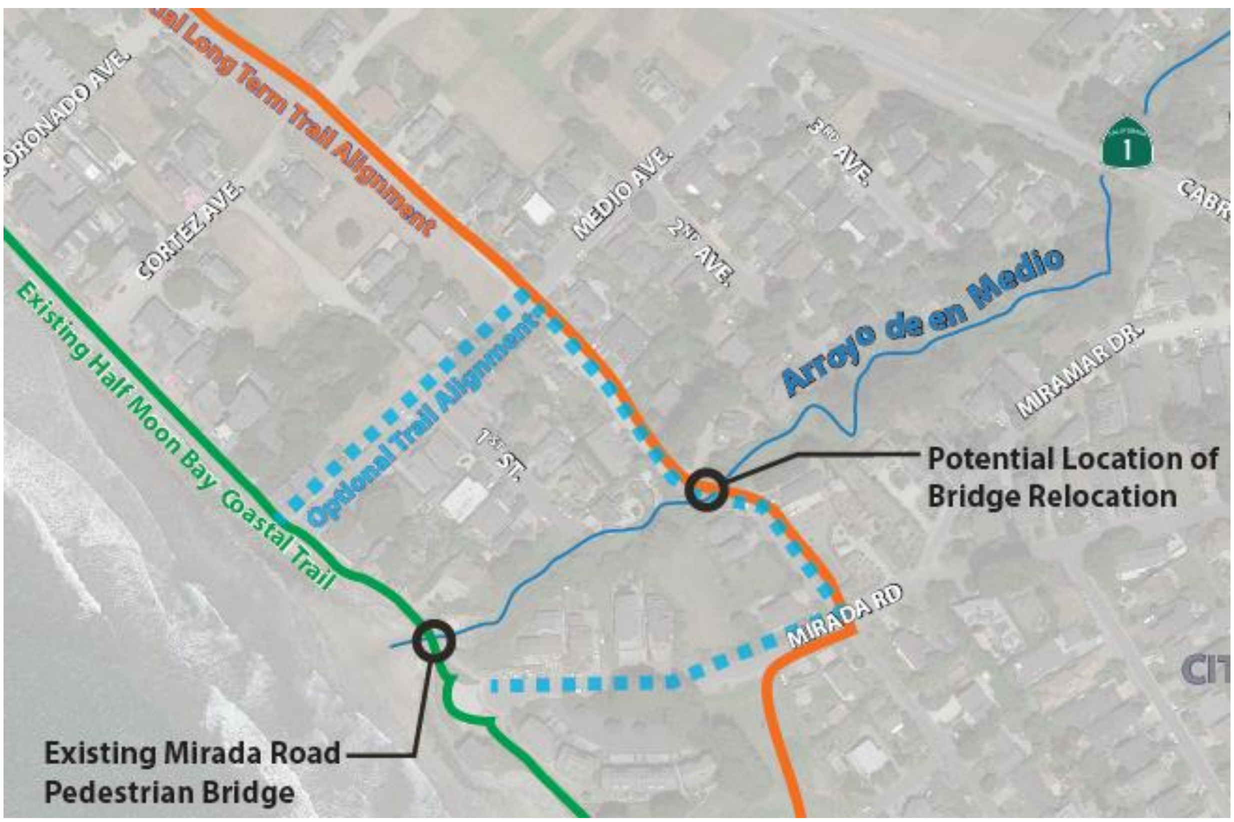
California Coastal Trail Realignment Plan

Sea level rise and coastal erosion has and will continue to impact the California Coastal Trail. The closure of the Medio Creek bridge on the Coastal Trail in 2020 was necessary due to corrosion weakening structural elements of the bridge. As part of the bridge replacement

[25]California Department of Transportation (Caltrans) webpage on Sea Level Rise and the Transportation System in the Coastal Zone. https://dot.ca.gov/programs/environmental-analysis/coastal-program/coastal-act-policy-resource-information/coastal-hazards/sea-level-rise. Accessed 12/21/20.

project, the County Department of Public Works proposes to replace damaged riprap shoreline protection with shotcrete wall and riprap toe shoreline protection near the bridge.
The rate of shoreline erosion in Miramar is uncertain because existing rip-rap shoreline protection has prevented erosion. Interim repair of the Medio Creek bridge is being pursued to restore public access; however, long-term realignment and route alternatives will be necessary in the future. In particular, the segment of the Coastal Trail from Surfer's Beach to Alcatraz Avenue in Half Moon Bay is vulnerable. Connect the Coastside recommends that, in partnership with California Coastal Commission, Coastal Conservancy, Caltrans, San Mateo County Parks, and others, the County engage in a community-based planning process to assess future realignment options of the California Coastal Trail due to impacts from climate change and sea level rise. As identified in the Highway 1 Safety and Mobility Study, and suggested by community stakeholders, Alameda Avenue from Cortez Avenue to the Half Moon Bay border could be an alternate route and would require a bridge to cross the ravine that separates the two segments of Alameda Avenue.

Potential long-term alignment for California Coastal Trail (excerpt from presentation by San Mateo County Department of Public Works on 12/9/20 to Midcoast Community Council)



El Granada and Princeton Parking Study

The section of Highway 1 between Capistrano Road and Mirada Road experiences the greatest delay along Highway 1 in the Study Area and is projected to be deficient under the Maximum Buildout Forecast conditions. There is a need for additional recreational and new park-and-ride parking in El Granada and Princeton, particularly near Surfer's Beach. Drivers park along the Highway 1 shoulder and in informal lots, often causing congestion and safety concerns by slowing down, blocking travel lanes, and as pedestrians cross at various locations.

There are several concurrent projects and interrelated concerns in this area of Highway 1, including Burnham Park (north of Surfer's Beach) led by the Granada Community Services District, impacts of sea-level rise and coastal erosion on the alignment of Highway 1, implementing the Parallel Trail, emergency services and access provided by fire station on Obispo Road and Coronado Street, and more. There is also an opportunity to evaluate "paper lots"[26] as potential candidate sites for future parking. Due to the complex nature of the area, the competing needs and interests, Connect the Coastside recommends a community-based future study to update the 2015 San Mateo County Coastside Access Study with a focus in El Granada and Princeton to address overflow parking at beaches and other popular destinations, parking in central El Granada, and identify necessary resources for implementation. County staff will also continue to participate in studies led by others that can help resolve parking and mobility issues in this area.

[26]Paper lots refer to land parcels that can be bought and sold like other land properties, but the lots only exist on paper and are not necessarily buildable.

RECOMMENDED POLICIES AND PROGRAMS

Connect the Coastside recommends the following programs and policies to further improve traffic conditions on the Midcoast. In general, programs and policies aim to limit new development and fund transportation improvements, promote alternative modes of travel and reduce vehicle use, and improve traffic safety with a focus on multimodal users.

LIMIT NEW DEVELOPMENT AND FUND TRANSPORTATION IMPROVEMENTS

LOT MERGER

Land use policies such as lot merger program would reduce transportation demand by reducing potential buildout, and therefore the potential traffic impacts. The San Mateo County Board of Supervisors adopted a lot merger program in 2006, but it was never implemented. The Lot Merger Program will 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 and will begin as voluntary.

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. The effect of this reduction in lots is already accounted for in the estimate of Maximum Buildout Forecast, because lot mergers were assumed to take place in the Midcoast Local Coastal Program. The project team estimated that a lot merger program could reduce the number of developable residential lots by up to 216 lots (see Table 1). Connect the Coastside recommends the Board authorize implementation of the following policy, first proposed in 2006:

Policy

In accordance with the County Subdivision Regulations, Chapter 9 – Parcel Mergers (Sections 7116-7119 and 7123) and in order to implement the General Plan and Local Coastal Program, the following shall be the policy of the San Mateo County Board of Supervisors:

1. The Staff is hereby authorized to initiate a lot merger process for the applicable Midcoast properties that are: (a) zoned Single-Family Residential (R-1), Multiple-Family Residential (R-3), or Resource Management-Coastal Zone (RM-CZ); and (b) comprised of "substandard" lots created by a recorded major subdivision. Substandard lots located within the Caltrans owned Devil's Slide Bypass property are excluded from this lot merger process.

2. Affected properties are lands that possess the following conditions:
    a. At least two contiguous parcels in the same ownership;
    b. At least one parcel is undeveloped, or is developed only to the extent described in Subdivision Regulations Section 7118; and

c. 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.

3. Lots meeting these criteria in R-1 or R-3 districts shall be merged to create a parcel or parcels that meet the minimum parcel size requirements a. or b. below, whichever is larger:
   a. At least 5,000 square feet plus the area of any remaining contiguous lots that cannot be merged along existing lot lines into a separate parcel that is at least 5,000 square feet; or
   b. At least the minimum parcel size for the applicable zoning district, plus the area of any remaining contiguous lots that cannot be merged along existing lot lines into a separate parcel that is at least the minimum parcel size for the zoning district.

4. Lots on applicable properties zoned RM-CZ shall be merged with a goal to reach at least 5 acres in lot area in the district.

Procedure

1. For undeveloped parcels comprised of at least two substandard lots and developed parcels comprised of at least three substandard lots, the following two-phased lot merger process shall occur:

   a. Phase 1 – Voluntary Merger

   (1) Phase 1 shall begin on the effective date of the resolution adopting Connect the Coastside and last for 12 months

   (2) Within three months of the effective date of the resolution adopting Connect the Coastside, County Planning Staff shall complete the following:
   - a) Mail a notice to the owner of each parcel containing lots eligible for merger under the terms of this policy. The notice shall explain the phased process in this policy, including the voluntary merger incentives provisions, and how to apply for voluntary lot merger.
   - b) Coordinate with the County Assessor to establish a Phase 1 monitoring program to identify when a substandard lot eligible for changes ownership such that it is no longer eligible for merger.

   (3) No later than three months after the effective date of Connect the Coastside, a voluntary lot merger period shall begin. The voluntary lot merger period shall be 9 months unless terminated in accordance with the following provision. If at any time during the voluntary merger period, more than five (5) ownership changes occur such that lots eligible for merger are no longer eligible, Phase 1 shall terminate immediately, and Phase 2 shall begin.

   (4) During the voluntary lot merger period, any property owner who requests merger shall receive a non-expiring voucher that entitles the

bearer to the benefits described below. The voucher may be applied to a new housing unit or improvement of an existing unit on the merged parcel.

a) up to 250 square feet of bonus floor area, or
b) $2,000 (new unit) $1,000 (existing unit) or 5% reduction in building permit fees, whichever is greater, or
c) One required covered parking space may be provided uncovered,
d) for an affordable housing unit, i.e., subject to an income, cost or rent restriction contract with San Mateo County, all of the following:
    - Up to 200 square feet of bonus area
    - One required covered parking space mayb e provided uncovered
    - Ability to obtain a priority reserved water connection, and
    - Waive permit fees, expedited permit processing.

The voucher would be redeemed at the time of building permit application, at which time, the bearer of the voucher will select the benefit to be received. The process for voluntary merger shall be in accordance with the provisions of the Subdivision Regulations Section 7123.

b. Phase 2 - Mandatory Merger

(1) Phase 2 shall begin when Phase 1 terminates, and in no case later than 12 months from the effective date of the resolution adopting Connect the Coastside.

(2) Qualifying substandard lots not voluntarily merged during Phase 1 shall be merged in accordance with the process mandated by Subdivision Regulations Section 7119.

2. For developed parcels comprised of two substandard lots, lot merger shall occur at the time when an application has been received to construct, enlarge or demolish a house on the parcel. The merger shall be in accordance with the process mandated by Subdivision Regulations Section 7119.

Figure 12: Estimated Development Potential Reduction Resulting from a Lot Merger Program (excerpt from Land Use Policy Options report by Dyett & Bhatia, January 2016, Connect the Coastside)

Table 1: Estimated Development Potential Reduction Resulting from a Lot Merger Program

	Vacant Substandard Lots	*Contiguously Owned Substandard Lots*[1]	*Lot Reduction as a Result of Merging*[2]	*Percent Reduction in Vacant Substandard Lots*
San Mateo County Unincorporated Midcoast				
Residential Districts	403	212	165	41%
Resource Management-Coastal Zone District (RM-CZ)	136	65	51	38%
Planned Agriculture District (PAD)	0	0	0	NA
Total, San Mateo County Midcoast	***539***	***277***	***216***	***40%***

Notes:

1 Contiguously owned lots of less than 4,500 square feet in residential districts, less than 5,000 square feet in resource management, planned development, or urban reserve districts. At least one of the contiguously owned lots must be undeveloped.

2 Lots are assumed to be combined to create lots that conform to the criteria outlined in the previous section, or to reduce non-conformance.

Lot Retirement

Based on the outcome of the lot merger program, the County will evaluate 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, reducing the potential for forecasted buildout and lessening the effect of new development on the transportation network. Lot retirement could 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.

The 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. Mandatory lot retirement at a one-to-one ratio (1:1) as a condition of approval for some proposed residential subdivisions could be an effective strategy to mitigate impacts to the transportation system and public access to the coast but will be reevaluated following implementation of the Lot Merger program.

The lot retirement program could support LCP Policy 1.18, which calls on the County to "concentrate new development in urban areas and rural service centers by requiring the 'infilling' of existing residential subdivisions and commercial areas." The program evaluated here would specify potential donor sites as undeveloped legal parcels having at least one of the following characteristics:

- Located outside of existing residential subdivisions where development has taken place, and outside of existing commercial areas;
- Containing sensitive habitat;
- Located in an area designated for Conservation, Open Space, Recreation or Agriculture in General Plans or Local Coastal Land Use Plans

Focusing lot retirement of development rights in undeveloped areas, and not in urban areas, would help support conservation of sensitive habitat areas, agriculture, and priority open spaces, and focus development in infill areas. A successful lot retirement program will require a partnership with a land management agency or organization, such as a park and open space agency or a community land trust to manage the lands where development rights are retired. The project team preliminarily estimates that approximately 148 "donor lots" exist, i.e., undeveloped lots where development rights might be extinguished in the study area (see Figure 13).

Figure 13: Estimated Development Potential Reduction Resulting from a Lot Retirement Program (excerpt from Land Use Policy Options report by Dyett & Bhatia, January 2016, Connect the Coastside)

Table 2: Estimated Development Potential Reduction Resulting from a Lot Retirement Program

	Eligible Donor Lots[1]
San Mateo County Midcoast	
Residential Districts	0
Resource Management-Coastal Zone District (RM-CZ)	104
Planned Agriculture District (PAD)	44
Total, San Mateo County Midcoast	***148***

Notes:

1 Undeveloped legal lots. Each retired lot is assumed to reduce Buildout by one unit.

Development Review

The County's development review process helps to address the traffic or mobility impacts of proposed developments. Projects subject to the County's development review process must conform to County policies and regulations. In most cases, conformance is achieved, in part, by meeting County-imposed permit conditions that modify a project application, including in some cases requirements to build or contribute funding towards new transportation infrastructure or transportation demand measures (TDM).

Measures set forth by the City/County Association of Governments (CCAG) and LCP Policy include, but are not limited to: establishing a shuttle service for employees, subsidizing transit for employees or residents, charging for non-public access parking, establishing a carpool or vanpooling program, having alternate work schedules, providing bicycle storage facilities and showers for employees or residents, and establishing a day care program. Prior to approval of a coastal development permit, the County must be able to make the finding that the project's proposed mitigation measures are adequate to offset new vehicle trips generated by the project to the extent feasible. The County will continue to use the development review process and permit requirements to improve transportation conditions based on appropriate findings.

Transportation Impact Mitigation Fee

A Transportation Impact Mitigation Fee (TIMF) 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. Attaching a mitigation fee to development can lead to reduced development as a result of the additional costs to develop. For the developments that do occur, these fees assist in providing a portion of funding for transportation projects. The TIMF would only apply to new development and would not be charged to residents.

In order to implement a Transportation Impact Mitigation Fee, the County will need to document the "nexus" or linkage between the fees being charged to new development, the benefits to mitigate impacts, and cost allocation. These legal requirements are in California Government Code section 66000-66025 and commonly called the "Mitigation Fee Act" or "AB 1600 requirements." TIMF rates must be based on a specific 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.

Connect the Coastside recommends a new TIMF and has done initial analysis based on the projects in this Plan to inform the future nexus study. The Transportation Impact Mitigation Fee is described further on page 180. Once completed, the San Mateo County Local Coastal Program should be amended to address the TIMF.

PROMOTE ALTERNATIVE MODES OF TRAVEL AND REDUCE VEHICLE USE

SAFE ROUTES TO SCHOOL

The San Mateo County Office of Education already has a robust Safe Routes to School Program (SRTS). The overall goal of the program is to enable and encourage children to walk or bicycle to school by implementing projects and activities to improve health and well-being, safety, and reduce traffic congestion due to school-related trips. Successful programs use a multi-disciplinary approach and engage a wide variety of school stakeholders including parents, students, school facilities staff, law enforcement, and jurisdiction staff to educate students and parents on safe walking and bicycling skills, establish encouragement programs to make walking and bicycling to school fun, use data and evaluation to support program objectives, and build infrastructure to support safe multimodal travel.

Cabrillo Unified School District has a dedicated program and SRTS coordinator and is already implementing encouragement and evaluation programs at local schools, including Farallone View Elementary School in Montara. Connect the Coastside's recommended Safe Routes to School infrastructure improvements support existing SRTS efforts and recommends continued investment in the program by the San Mateo County Transit District, County, and other funding partners. The Plan recommends that the LCP be amended to acknowledge Safe Routes to School as a strategy, alongside others, to reduce the overall demand for driving.

To learn more about SRTS, visit:

- San Mateo County Office of Education SRTS: https://www.smcoe.org/for-schools/safe-and-supportive-schools/safe-routes-to-school/
- Cabrillo Unified School District SRTS: https://www.cabrillo.k12.ca.us/our_community/safe_routes_to_school

TRANSPORTATION DEMAND MANAGEMENT & LCP POLICY 2.52

Transportation Demand Management or TDM refers to policies and strategies that aim to reduce travel demand, particularly single occupant vehicles, or to redistribute that demand to off-peak times. Reducing the demand for single occupant vehicle trips and shifting those trips to carpools, bicycles, pedestrians, and transit trips are ways to reduce congestion and make more efficient use of the existing transportation system.[27]

In 2000, the City/County Association of Governments of San Mateo County (C/CAG) adopted a policy that provided guidelines for analyzing the impacts of land use decisions made by local jurisdictions. This policy is implemented during the environmental review process and applies

[27] C/CAG Transportation Demand Management webpage (Accessed 11/29/20) https://ccag.ca.gov/programs/transportation-programs/transportation-demand-management/#:~:text=Transportation%20Demand%20Management%20or%20TDM,demand%20to%20off%2Dpeak%20times.

to developments that generate 100+ peak-hour trips on the Congestion Management Program (CMP) roadway network. Highways 1 and 92 are part of the CMP roadway network. The policy requires that the TDM plan include strategies that have the capacity to fully reduce the demand for new peak-hour trips; thus, the guidelines also provides a menu of TDM measures and corresponding trip reduction credits.[28] The County adopted the C/CAG TDM Ordinance and implements it as part of the County's development review and permitting process, including for County projects in the Coastal Zone.

The San Mateo County Local Coastal Program (LCP) Policy 2.52[29] complements C/CAG's TDM Ordinance and Policy 2.53, the catalyst for Connect the Coastside. Policy 2.52 requires applicants for new development that generate any net increase in vehicle trips on Highways 1 and/or 92, except for a single-family dwelling, a second dwelling unit, or a two-family dwelling, to develop and implement a traffic impact analysis and mitigation plan (TIMP). The LCP generally states the TIMP must include: (1) traffic mitigation measures, (2) enough information for the County to assess if the mitigation measures are adequate to offset new vehicle trips generated by the project, and (3) project's cumulative impacts combined with other reasonably foreseeable future projects, especially in regards to beach access. Traffic mitigation measures (2.52a) could include shuttle services for employees of the development, subsidizing transit, providing bike storage, and others. C/CAG is responsible for countywide congestion management and recommends TDM measures and the potential number of trips offset as part of its annual Congestion Management Program.[30]

As described in the Development Review section, mobility projects in Connect the Coastside can be considered as part of Transportation Demand Management strategies. The State's adoption of the Vehicle Miles Traveled (VMT) standard to characterize and address impacts under the California Environmental Quality Act will require additional mitigations for projects that have high VMT, or effectively stop those projects from happening. LCP amendments related to VMT will need to be established and are described further in the Recommended Standards and Evaluation section on page 152.

EMERGING TRANSPORTATION TECHNOLOGY

Emerging transportation technology, such as ridesharing applications (e.g., Lyft) and micromobility services (e.g., scooter and bike share) have and will continue to change the way people travel, including car ownership and circulation patterns. When paired with high quality infrastructure, like the Multimodal Parallel Trail, services like scooter share can allow visitors to park (or transit) to the coast and travel easily without a car to other coastal destinations. Service availability is currently largely available dependent upon private companies (like Lyft[31])

---

[28] ibid

[29] San Mateo County Local Coastal Program. 2013. P.2.22. https://planning.smcgov.org/documents/local-coastal-program (Accessed 11/8/20)

[30] C/CAG Appendices for Congestion Management Program, 2019 – Appendix I - https://ccag.ca.gov/wp-content/uploads/2020/04/2019-Final-CMP-Appendix-040920-compressed.pdf

[31] Lyft scooter share offerings https://www.lyft.com/scooters

and can require public-private partnerships, typically led by regional transportation agencies (e.g., Metropolitan Transportation Commission, San Mateo County Transportation Authority, and others).

Connect the Coastside recommends that the County continue partnerships with other agencies to explore how using emerging transportation technologies could address existing and projected traffic conditions on the Midcoast.

SHARED PARKING

During the 2020 engagement process, several stakeholders suggested a "shared parking" strategy to increase parking availability to serve recreational areas and transit riders. Shared parking allows different sites to share parking whose peak parking demands occur at different times. Shared public parking can be more efficient than single-use private parking because fewer spaces are needed to meet the total peak parking demand. Parking that is shared among different establishments allows motorists to park once and visit multiple sites on foot.[32] Stakeholders suggested candidate sites for shared parking, including El Granada Elementary School and the Church of Latter Day Saints in Moss Beach. Implementing shared parking at privately owned sites is complex due to liability, rules related to property tax exempt status for non-profit entities, and maintenance. Connect the Coastside recommends exploring shared parking as a strategy with partners given the potential benefits and reduction in environmental impacts, and potential LCP amendments to promote shared parking.

[32] Shoup, D. "Instead of Free Parking." Access Magazine, Number 15, Fall 1999. P.8-13. Available at: http://shoup.bol.ucla.edu/InsteadOfFreeParking.pdf

IMPROVE SAFETY

LOWER SPEED LIMIT ON HIGHWAY 1

Stakeholders were concerned about speeding on Highway 1 in commercial areas and recommended lowering the speed limit. The California Vehicle Code (Division 11, Chapter 7) dictates speed laws in California. The State of California Department of Transportation (Caltrans) can lower the speed limit on highways under certain conditions. Connect the Coastside recommends that Caltrans engage in the appropriate studies to determine whether the speed limit on Highway 1 can be lowered, especially in the Village zones in central Montara, Moss Beach, and El Granada/Princeton.

EDUCATIONAL CAMPAIGNS

Motor vehicle crashes continue to be a leading cause of death in California and the nation. Media campaigns and educational strategies can be effective in addressing specific behaviors such as impaired driving, distracted driving, and pedestrian and bicycling safety. Connect the Coastside recommends collaborating with Safe Routes to School partners, Caltrans, and others to distribute safe driving materials and implement safety campaigns. The California Office of Traffic Safety offers grants and resources that can support the effort: https://www.ots.ca.gov/

Image from California Office of Traffic Safety Distracted Driving campaign and associated site: https://gosafelyca.org/distracted-driving/

RECOMMENDED STANDARDS AND EVALUATION

The effectiveness of recommended projects in Connect the Coastside is measured using current and new performance standards (see discussion beginning on page 44). Connect the Coastside recommends the following amendments to transportation evaluation standards.

SAN MATEO COUNTY TRAFFIC IMPACT ANALYSIS REQUIREMENTS

San Mateo County's Department of Public Works developed the *Traffic Impact Study Requirements (2013)*. These requirements have not yet been revised to reflect changes in State law related to evaluating transportation impacts under the California Environmental Quality Act (CEQA) that require using Vehicle Miles Traveled (VMT). The County may continue to require level of service evaluation, but any changes in level of service are no longer considered significant environmental impacts under CEQA.

Connect the Coastside assumes that the County will further refine the interim guidance on VMT[33] and incorporate subsequent changes into revised Traffic Impact Analysis Requirements. In the interim guidance on VMT, El Granada/Miramar are categorized as urban/suburban areas, and therefore have interim VMT threshold criteria. Other Midcoast communities are categorized as rural areas, where thresholds will be set on a case-by-case basis. The San Mateo County Local Coastal Program (LCP) designates urban lands as those lands in the Midcoast area within the urban-rural boundary on Land Uses (LCP Map 1.4, p.1.34). The LCP designations currently do not align with the urban/suburban areas definition in the VMT guidelines. Connect the Coastside recommends updating the final VMT guidelines and/or LCP to resolve this difference.

If the County continues to use intersection level of service to assess the need for traffic mitigation, Connect the Coastside recommends that the Traffic Impact Study Requirements are revised so that unsignalized intersections with Highway 1 in the Midcoast are considered deficient if they meet a peak-hour signal warrant.

LCP Policy 2.52 has different threshold requirements for when a traffic impact analysis is required than the current San Mateo County Traffic Impact Study Requirements (i.e., any net new increase in trips on Highways 1 or 92 vs. 100 peak hour trips or 500 daily trips). Connect the Coastside recommends that the San Mateo County Traffic Impact Analysis Requirements be amended to address requirements of LCP Policy 2.52. C/CAG is in the process of updating the County's Transportation Demand Management ordinance, and it would be beneficial when the C/CAG policy is adopted to update LCP Policy 2.52 and the Transportation Impact Analysis Requirements so that these documents are consistent.

[33] Inter-departmental Correspondence – Change to Vehicle Miles Traveled as Metric to Determine Transportation Impacts under CEQA analysis. Available at: https://publicworks.smcgov.org/sites/publicworks.smcgov.org/files/documents/files/Interim%20VMT%20Analysis%20Criteria.pdf

San Mateo County Local Coastal Program

The San Mateo County Local Coastal Program (LCP) contains policies to protect coastal resources and govern decisions in the Coastal Zone, including requirements for new development. Several LCP policies collectively aim to reduce traffic congestion, promote alternative modes of travel, and protect coastal resources from the impacts of new and cumulative residential development.

LCP Policy 2.43 Desired Level of Service states: "In assessing the need for road expansion, consider Service Level D acceptable during commuter peak periods and Service Level E acceptable during recreation peak periods." The San Mateo County Congestion Management Agency (C/CAG) is currently required to use level of service when measuring roadway performance for its Congestion Management Program, but this may change in the future.

Connect the Coastside recommends that the County work with the California Coastal Commission and C/CAG to amend the LCP to incorporate the delay index and vehicle miles traveled as performance measures. A revised policy could read:

> *"In assessing the need for road expansion, consider Delay Index 3.0 acceptable for roadway segments with adjacent Class I or Class II Bikeways for at least 80% of the length and Delay Index 2.0 acceptable for other roadway segments during commuter or recreation peak periods. Induced vehicle miles traveled due to proposed road expansion should be assessed per San Mateo County's Guidelines."*

This change would impact how capacity limits are assessed as noted in other policies within the LCP, including Policy 2.42 Capacity Limits, Policy 2.44 Route 1 and Route 92 Phase I Capacity Limits, and Policy 2.46 Monitoring.

Policy 2.52 Traffic Mitigation for all Development in the Urban Midcoast requires applicants for new development that generate any net increase in vehicle trips on Highways 1 and/or 92 (other than up to a two-family dwelling unit) to develop and implement a traffic impact analysis and mitigation plan (TIMP). The LCP does not define a specific methodology to assess impacts and references transportation demand management measures for mitigations. Connect the Coastside recommends that this policy be revised to reference San Mateo County's Traffic Impact Study Requirements (per the section above), and projects within this Plan (the CTMP) for mitigation measures.

Connect the Coastside Implementation Monitoring

Connect the Coastside recommends County Planning and Building staff report every 5 years on the status of implementation of Connect the Coastside projects and development; LCP Policy 2.46 could be amended to incorporate this recommendation.

OTHER EFFORTS TO IMPROVE TRANSPORTATION CONDITIONS

The County and its partners already engage in efforts to improve travel conditions to and within the Midcoast. The following programs are highlighted to address comments received during Connect the Coastside's engagement efforts.

VEGETATION REMOVAL

Midcoast stakeholders are concerned about the impact of vegetation on traffic safety, including blocking pedestrian, motorist and bicyclist sight lines and ability to evacuate during an emergency, such as a wildfire.

Highway 1 shoulder near Devil's Slide, photo courtesy of Cid Young

The California Department of Transportation (Caltrans) is responsible for most of the maintenance of Highways 1 and 92 and is actively addressing tree die-off and fuel reduction. Caltrans' Maintenance Manual Chapter C2 details Vegetation Control. Per Section C2.06, each Caltrans district prepares an annual plan for vegetation control (VegCon Plan), which considers fire risk management, safety, aesthetics, and community concerns, among others. Section C2.11 details vegetation control of specific areas, including the distance of vegetation control recommended from the paved shoulder edge. Section C2.11.(D) states that "all brush and seedling trees should be controlled nine (9) feet from the pavement edge." Caltrans is also engaging in Wildfire Vulnerability Analysis (2020-2030) to prioritize where to focus fuel-reduction projects for fire prevention and forest health along state highways. Midcoast residents can submit maintenance requests at the link in the "Resources" section below.

Resources:

- Caltrans Maintenance Manual - https://dot.ca.gov/programs/maintenance/maintenance-manual
- Division of Maintenance Customer Service Request - https://csr.dot.ca.gov/
- Caltrans Roadside Fire Fuels Reduction - https://dot.ca.gov/programs/maintenance/roadside-fire-fuels

Lighting

Several commenters during 2020 engagement stated the need for roadway lighting to improve the safety, especially for those walking and bicycling in the evening along Highway 1, Airport Street, and at highway intersections. However, commenters also addressed the need to minimize light pollution to maintain the Coastside character and reduce environmental impacts. Roadway lighting at intersections and pedestrian-scale lighting can increase traffic safety.

The San Mateo County Department of Public Works oversees several lighting districts on the Midcoast. Lighting districts are considered a County-governed special district, governed by the San Mateo County Board of Supervisors and operated by the County; more on these special districts, including when they were established is on the San Mateo County Local Agency Formation Commission (LAFCO) website.

There is currently one light in the State right-of-way on Highway 1 at Virginia Avenue, which is maintained by the Montara Highway Lighting District. It was installed through the streetlight petition process after a crash and with the permission of Caltrans. Airport Street is not currently within any of the service areas of County-maintained lighting districts and there are no County-maintained lights on that street.

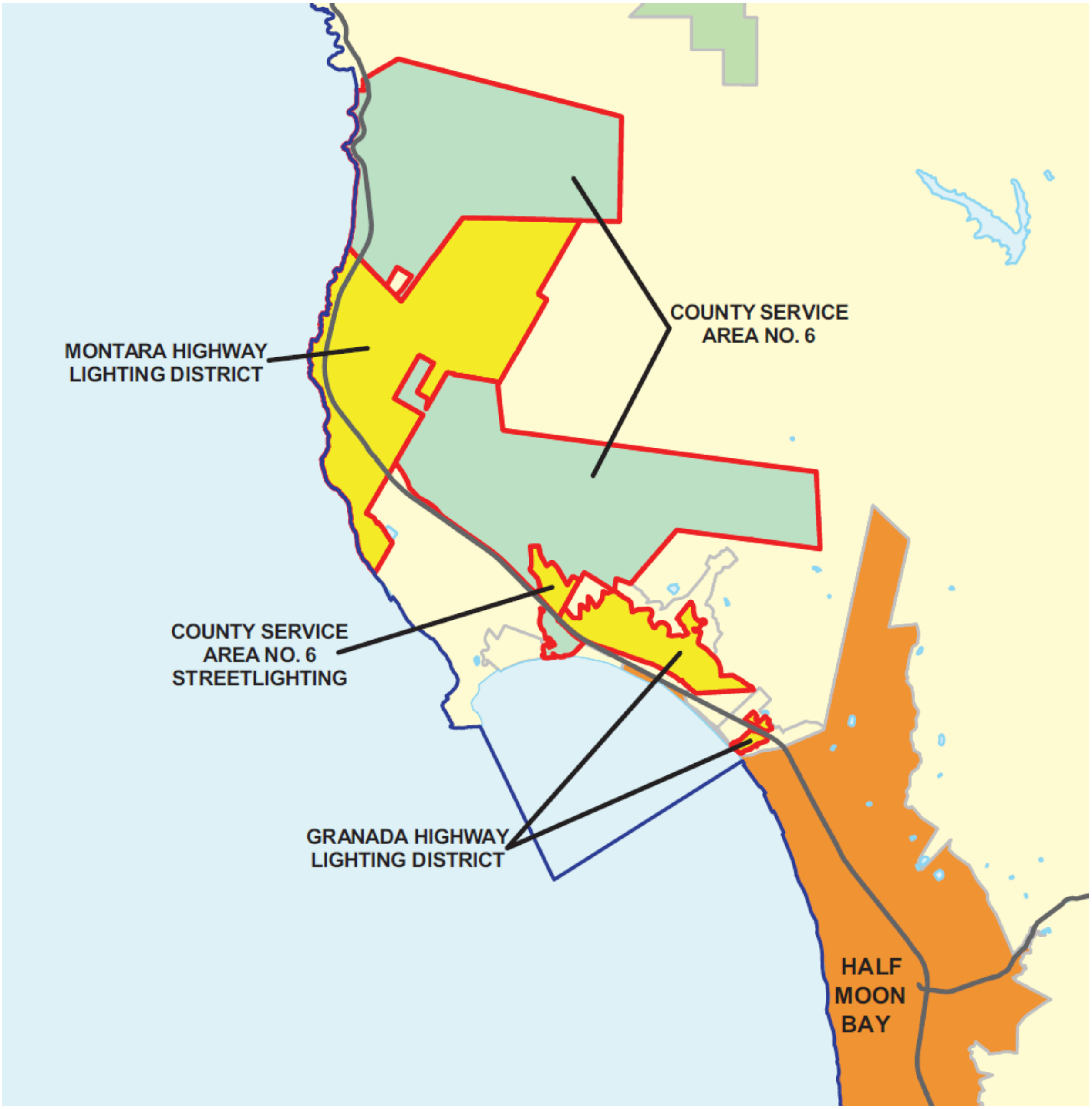
There are two ways to add street lights:

1. Two members of the Board of Supervisors can petition the County Board of Supervisors for installation, or
2. Twenty (20) property owners in the District can petition the Board of Supervisors for the installation of a new light.

The second method is most common and outlined in a Street Light Petition Procedures document. A lighting requestor must send a letter to Lighting District staff requesting the new light at a specific location. District staff verify the location and whether it's feasible to install, and then mail the requestor a letter of instruction and standard petition to be signed by at least 20 property owners. Once received, the District staff will verify the petition and location and prepare a letter to inform property owners within 300 feet of the proposed location and allow 15 days for objections. The Board of Supervisors must then find it just and equitable for additional lights to be installed. In addition, Caltrans must approve any lights in their right of way and could require the removal of County streetlights that are in State right of way at any time. Connect the Coastside recommends that the County work with property owners and agency partners as part of the project implementation process to address lighting needs.

More information about street lighting districts can be found at:
https://publicworks.smcgov.org/street-light-services

Map 20: San Mateo County Lighting Districts



Traffic Calming

Traffic calming uses physical infrastructure to improve safety and slow vehicle speeds. Common traffic calming measure include speed humps, narrower roadways, traffic circles, and curb extensions. Many stakeholders commented about speeding drivers creating unsafe travel conditions, especially for walking and bicycling.

The San Mateo County Department of Public Works has a residential speed control program, which aims to curb excessive speeding in residential neighborhoods on County-maintained roadways by using speed humps and dips. The purpose of the program is to provide a consistent process to evaluate requests for speed control devices throughout unincorporated areas. Residents can use the petition process to request a roadway evaluation, which requires that at least 51% of the property owners on the given street are interested in participating. More information about this program is available at: https://publicworks.smcgov.org/residential-speed-control

Some of the recommended improvements in Connect the Coastside, such as the addition of curb extensions in Montara, high visibility markings, and edge striping could help slow vehicle speeds. However, Connect the Coastside does not make specific recommendations for each street because all traffic calming measures must be approved and reviewed by Caltrans (if in State right-of-way), California Highway Patrol, Fire Department, and Department of Public Works. Non-infrastructure approaches, such as safe driving campaigns, can also help curb speeding.

Example of a traffic calming demonstration in the City of Redwood City of a mini-traffic circle - https://www.redwoodcity.org/departments/community-development-department/engineering-transportation/transportation-and-parking/traffic-calming-projects

Emergency Response and Evacuation

The projects recommended in Connect the Coastside have been selected to improve safety and mobility for residents, businesses and visitors and ease roadway congestion. In the event of an emergency, keeping traffic moving efficiently will be important for both emergency responders and those leaving during a possible evacuation. Projects in Connect the Coastside that will improve the flow of traffic include intersection controls and turn lanes.

Connect the Coastside also suggests improvements to bicycle, pedestrian, and transit infrastructure that could aid in the evacuation of visitors and residents in certain emergency situations. For example, in the event of a Tsunami Warning, the County of San Mateo Office of Emergency Services (OES) suggests walking to high ground or inland immediately. Improvements to trails and walking paths will make it easier and safer for people to travel by foot.

The following is an overview of different County departments and special projects related to emergency response:

- In the event of a disaster, the Office of Emergency Services coordinates countywide response and protection services. One of the missions of the Office of Emergency Services is to maintain and improve the Countywide Emergency Operations Plan. This plan establishes policies and procedures and assigns responsibilities to keep residents safe during an emergency situation.
- During an emergency or disaster, law enforcement is responsible for evacuation and the movement of the public away from a hazard area. Representatives from law enforcement and public safety agencies were part of the Connect the Coastside Technical Advisory Committee that reviewed and helped refine the plan proposals.
- In the event of an emergency, public safety agencies such as police and fire will be able to provide emergency information directly to people who have registered for the San Mateo County (SMC) Alert service[34]. These alerts may include life safety, fire, weather, accidents involving utilities or roadways or disaster notifications. For example, the SMC Alert service would be used to notify Coastside employees and citizens of available evacuation routes during an emergency.
- In March of 2019, Supervisor Don Horsley allocated $75,000 of discretionary Measure K funds to launch the development of a countywide standardized emergency evacuation zone project (Zonehaven). The goals of the project are to reduce the amount of time it takes to notify the public, create a common operating evacuation platform for all jurisdictions, information sharing, and help people to safely and efficiently evacuate in case of an emergency. Since the project began, the CAL FIRE San Mateo Division has worked with every fire and law enforcement agency in San Mateo County to identify over 300 evacuation zones. The project includes a public webpage that shows a map of each evacuation zone and a software application that helps first responders call for

[34] San Mateo County (SMC) Alert Service - https://hsd.smcsheriff.com/smcalert

evacuations using the standard zones. This will greatly reduce the time from when an evacuation is called to when the public is notified. Additionally, the application integrates with Waze and Google Maps, so as soon as a zone is closed people will be directed accordingly. Zonehaven was used to create an Evacuation Zone Map for the CZU Lightning Complex Fire in August 2020. The platform is available at https://community.zonehaven.com/

- The County of San Mateo will be updating the Local Hazard Mitigation Plan and the Safety Element of the General Plan beginning in the winter of 2021. The County will be working with emergency service providers such as CalFire, the Office of Emergency Services, and the new Flood and Sea Level Rise Resiliency District. These efforts will further evaluate hazard risks and identify safety measures on the Midcoast.

Recreational Trails

Creating continuous and easily accessible trail systems along the coast was mentioned in many comments during 2020 outreach. Commenters stated support and excitement for the Parallel Trail and seeing improvements that complete the Coastal Trail in the Midcoast. Open space trails, such as the Bay Area Ridge Trail or more isolated segments of the Coastal Trail are unlikely to contribute to significant traffic reduction or circulation improvements; however, they continue to be important destinations for local and regional traffic. Therefore, improvements to trailheads and trail access could help improve circulation on the Midcoast. Connect the Coastside recommends collaborating with partners on projects that could enhance or impact recreational trails including trail crossings, wayfinding, and parking. Notable opportunities are described below.

Green Valley Trail

The Green Valley Trail is a proposed trail segment of the California Coastal Trail on State of California Lands, south of the Devil's Slide Tunnel that connects to the parking area at Gray Whale Cove. The recreational trail would accommodate pedestrians, bicyclists and equestrians on a natural surface trail. The County began the environmental review and permitting process to begin construction in 2016 and encountered regulatory and financial hurdles. For example, several of the permit conditions of approval set by the United States Fish and Wildlife Service are too costly and infeasible to meet with the Parks Department current budget. Parks continues to engage with State partners and other agencies who may be able to take on the construction and management of the Trail and meet requirements.

Ohlone-Portola Heritage Trail

The Ohlone-Portola Heritage Trail in San Mateo County is a proposed recreation trail route system of Class I, II and III bikeways, multi-use trails, riding and hiking trails and sidewalks. The trail would designate 90-miles, tracing the expedition of Spanish explorer, Gaspar de Portolà, and the impacts on and stories of the native Ohlone people. The Trail would begin at the Año Nuevo State Park Visitor Center, pass over Sweeney Ridge, and extends to the State Historic Landmark in Menlo Park. Once completed, the recreational route will link the bayside of San Mateo County with its coastside. The recommended Trail alignment includes segments of the

California Coastal Trail and would overlap with the recommended alignment in Connect the Coastside. More information is available on the San Mateo County Parks website: https://parks.smcgov.org/ohlone-portol%C3%A1-heritage-trail-project

Bay Area Ridge Trail

The Bay Area Ridge Trail is envisioned to link the ridges encircling the Bay Area into one continuous 550-mile trail. In 1987, the Greenbelt Alliance, the Golden Gate National Recreation Area, the National Park Service as well as citizen advocates came together to help form the Bay Area Ridge Trail Council. The Bay Area Ridge Trail Council works collaboratively with major land management agencies to advance the trail. To date, about 385 miles of the trail have been built. In June 2020, the San Francisco Public Utilities Commission released a Draft Environmental Impact Report for the Southern Skyline Ridge Trail, a part of the Bay Area Ridge Trail through its Peninsula Watershed Lands. As described earlier, the Highway 92 and Highway 35 intersection (West, Upper) is near the start of the trail and could help connect the two sections of trail. Any improvements to this intersection must consider trail-user needs. More information about the Bay Area Ridge Trail is available at: https://ridgetrail.org/

Bay to Sea Trail

The Bay to Sea Trail is envisioned to be a 40-mile continuous trail from the San Francisco Bay, across the Peninsula to the coast. The initiative is led by the Peninsula Open Space Trust (POST) in close partnership with the Midpeninsula Regional Open Space District, California State Coastal Conservancy, and others. The conceptual alignment is south of Highway 92 and ends south of Half Moon Bay. The Bay to Sea Trail, or a separate route closer to Highway 92, could help alleviate some congestion along Highway 92 as noted in project B4. More information about the Bay to Sea Trail is available at: https://www.baytoseatrail.org/

8.Implementation

OVERVIEW

Implementation of Connect the Coastside will require strong partnerships with actors like Caltrans, other agencies, and ongoing support from the community to work together to find common ground on detailed project designs and funding mechanisms. The implementation horizon of Connect the Coastside is 30 years (through 2050) and some projects, like intersection control at Highways 92 / 35 (upper), are not needed until the traffic conditions warrant them. Some projects, like missing stop signs at side streets, are existing safety concerns that could be implemented in a shorter timeframe. Other projects, like a pedestrian overcrossing, will take longer to implement due to complexity and cost. This chapter describes how the County will approach implementation, including considerations in project design, mechanisms to support implementation, and phased implementation.

MOVING A PROJECT TOWARD IMPLEMENTATION

Moving a project from concept – like those in Connect the Coastside – to implementation is an involved and complex process and can take many years to complete, even for projects that may appear to be “easy” to implement. The following section summarizes key phases to move a project from concept to construction.

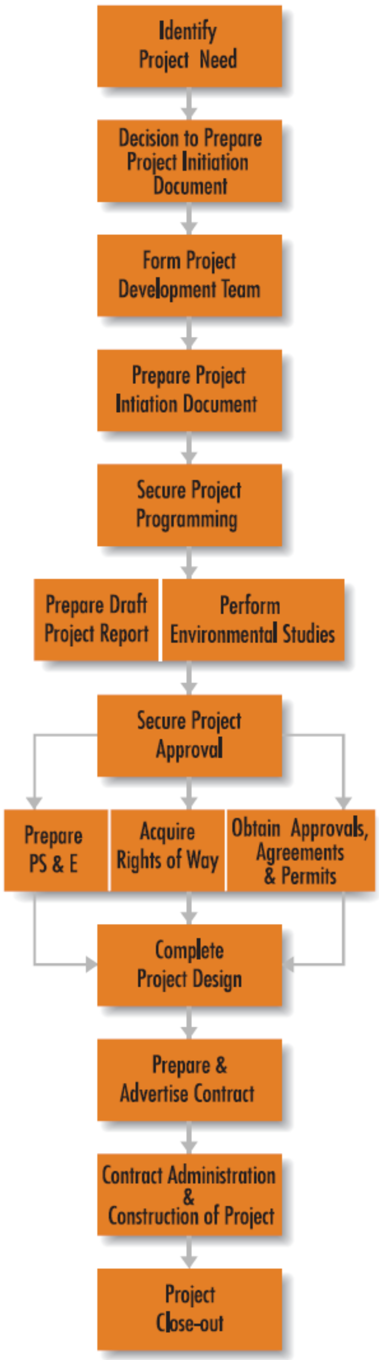
1. COLLABORATE WITH OTHER ACTORS AND PARTNERS TO ADD PROJECTS TO LOCAL, REGIONAL, AND STATE TRANSPORTATION PLANS.

Connect the Coastside is the first step to position individual projects for implementation because it establishes a coherent mobility vision and priorities for the Midcoast. The projects need to be integrated into local, regional and state transportation plans to ensure they are coordinated with regional projects and become eligible for most sources of funding. Relevant plans include:

- San Mateo County Transportation Authority Strategic Plan
- San Mateo County Congestion Management Plan (C/CAG)
- Plan Bay Area (Sustainable Communities Strategy and Regional Transportation Plan)
- State Transportation Improvement Program
- State Highway Operations and Protection Plan (SHOPP)

Since most of the recommended projects in this Plan are not under the exclusive jurisdiction of the County, the County must collaborate closely with other actors, like Caltrans, and participate in other agencies’ planning processes, like Reimagine SamTrans to achieve successful project implementation.

Figure 14: How Caltrans Builds Projects



Graphic from "How Caltrans Builds Projects," Office of Project Development Procedures, August 2011. Available at: https://dot.ca.gov/-/media/dot-media/programs/sustainability/documents/2011-how-caltrans-builds-projects-a11y.pdf

2. Project Initiation and Preliminary Design

Developing project designs that address mobility and safety challenges requires staff, funding, and a Project Development Team. The County of San Mateo will, in most cases, need to be the "Project Sponsor" to move projects forward, and would need to use existing funds or grant funds to support this phase. The Project Development Team brings together experts and key agencies together to identify various options that balance specific challenges, like potential environmental impacts, available right-of-way, and others. In order to engage Caltrans on any highway projects, the County would also need to commit to developing a Project Initiation Document (PID). A PID is required by Caltrans and provides stakeholders, decision-makers, and others an understanding of the issues for the proposed transportation project, including potential costs. The County (or other project sponsor) would need to fund Caltrans oversight of PID preparation.

There are multiple phases to project design, and the design gets refined and more detailed in each successive phase. As each individual project is developed, the Project Development Team must consider:

- Engaging community stakeholders, including community-based organizations in a collaborative scoping and project review process
- Other detailed design recommendations from past plans, such as the Highway 1 Safety and Mobility Study Phases 1 and 2)
- Conducting additional data gathering and analysis (specifically for intersection control evaluations (ICE))
- Characterizing topography, habitat and right-of-way constraints
- Designing for accessibility with minimum design standards (ADA, minimum design for trails, bikeways, bus stops, community desire for wide smooth surfaces)
- Minimizing environmental impacts, e.g., avoiding wetlands, streams, and other sensitive habitats and incorporating environmentally friendly elements such as green infrastructure and referencing the County's Green Infrastructure Plan[35] and compliance with Local Coastal Program policies protecting sensitive habitats and wildlife and scenic resources

[35] https://www.smcsustainability.org/download/energy-water/SMC-GI-PLAN-Final_09-17-19-with-Appendices.pdf

- Overcoming property limitations (right-of-way, property acquisition)
- Evaluating impacts on evacuation and emergency response
- Operations and maintenance (brush, vegetation clearance)
- Climate change impacts (Coastal erosion, sea level rise, impacts of heat/flood)

For projects in Caltrans right of way, the project initiation process will produce a Project Initiation Document, such as a Project Study Report (PSR) and Project Environmental Study (PES). For all projects, this phase will lead to a preliminary project scope and design and a characterization of environmental impacts, all based in a robust community engagement process.

3. Identify and secure funding for implementation.

Once preliminary designs have been completed, the County and its partners can seek additional funding for the project or allocate existing resources for additional design and implementation. 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 (potential sources are described later in this chapter). 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 Department of Public Works administers the County's Road Fund, which includes state and federal tax monies returned to the County. The County may also commit general funds or voter approved sales tax funds to Connect the Coastside projects.

4. Conduct environmental studies and detailed design.

Once a project has secured funding for at least project initiation, detailed environmental review and project studies and design can begin. The Project Development Team would refine the preliminary design, and engage in additional engineering, right-of-way and utilities assessments. In addition, individual projects would be assessed under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) (if using federal funds). Depending on the scope and scale of the project, the environmental assessment will address impacts to special status plants and wildlife, historic sites, wetlands, visual impacts, and other issues. It may also include a discussion of mitigation measures for those impacts and discuss alternatives to the project. After environmental studies are complete, the Project Development Team would develop Project Approval/Environmental Documentation (PAED) for any Caltrans-related projects. The project would then need to be approved with the selected preferred alternative and environmentally cleared. After that, the Team would move forward with a more detailed design phase (Plans, Specifications, and Estimate or PS&E) with Caltrans.

5. Secure approvals, agreements, and permits.

After environmental studies and detailed designs are complete, the project must go through final review and approval with the appropriate agencies, including permits. Each project will require a Coastal Development Permit issued by the County of San Mateo (except for a few projects that are outside the Coastal Zone). Other agencies that may need to issue approvals or permits include the Department of Fish and Wildlife, US Army Corps of Engineers, including consultation with the U.S. Fish and Wildlife Service. For highway projects, the County may need to enter into agreements with Caltrans, including addressing long-term maintenance and operations of the project, and securing any necessary encroachment permits.

6. Construct and close-out project.

Once a project is designed, funded, and permitted, it can be constructed. Many infrastructure projects are built by private contractors hired by local government. In order to have a contractor implement the project, the County must engage in a competitive public bidding process. This allows construction companies to compete for a project by responding to a request for proposals (RFP) issued by the County. Once a contract is awarded, the contractor can begin to build the project. Once the project is constructed, the project must be "closed out," which includes compiling final records including right-of-way improvements completed, as-built plans, updated right-of-way maps, and others.

7. Project Maintenance.

All projects require maintenance, which is a considerable cost to the agency responsible. Properly maintained infrastructure is safer, functions better and is more likely to meet its intended purpose.

NEXT STEPS

Several factors influence next steps and the Connect the Coastside's implementation, including:

- **Local Coastal Program**: There are several LCP Policies (2.6, 2.7, 2.9, 2.42, 2.47) that dictate the timing and development of public works facilities to be phased and limited to meet the needs of projected buildout without inducing new development; in short, infrastructure should not be implemented purely to serve a projected need.
- **Funding Timeliness**: Grants are offered by funders on different cycles and are available for different types of projects. The County will need to be opportunistic and match projects that will compete well with funding opportunities.
- **Staff Resources**: Implementation requires County and partner agency staff resources. Available staff will limit the number of projects and programs that can be pursued and managed.
- **Project Cost and Ease of Implementation**: Low project design, capital and permitting costs, and projects with little or no environmental impacts, generally make it easier for a project to be implemented.
- **Multimodal Connectivity**: Projects that fill a gap in existing bicycle, pedestrian or transit networks are of higher importance.
- **Safety and Circulation**: Projects that improve an identified safety concern and/or circulation issue are of higher importance.
- **Coastal Access**: Projects that enhance access to the California coast for all modes of travel are of higher importance.
- **Operations and Maintenance**: Projects that have lower annual expected Operations and Maintenance (O&M) costs will be easier to implement.

Below is the expected implementation timeline based on the considerations above and the 6 phases of implementation: 1) Collaborate, 2) Project Initiation, 3) Secure Funding, 4) Environmental and Design, 5) Approvals and Permits, and 6) Construction. Connect the Coastside's implementation will be reported on every 5 years by County Planning and Building staff. The timeline is subject to change based on staffing, County resources, and grant availability.

Table 33: Project Implementation Timeline

Project #	Project	Near-term (0 to 7 years)	Medium-term (8 to 16 years)	Long-term (17 to 30 years)
R1	SR-1 Shoulder Treatment (Village and Fringe)		Phases 1 - 4	Phases 5 - 6
R2	SR-1 Side Street Stop Signs	Phases 1 - 4	Phases 5 - 6	
R3	Gray Whale Cove Turn and Acceleration Lanes	Phases 1 – 4	Phases 5 - 6	
R4	Highway 1 Turn and Acceleration Lanes at 8th Street		Phases 1 – 4	Phases 5 - 6
R5	16th St / Highway 1 Intersection Control		Phases 1 – 2	Phases 3 - 6
R6	California Ave / Highway 1 Intersection Control		Phases 1 – 2	Phases 3 - 6
R7	Cypress Ave / Highway 1 Intersection Control	Phases 1 - 2	Phases 3 - 6	
R8	Main Street Traffic Calming and Bike/Ped Connectivity	Phases 1	Phases 2 - 6	
R9	Carlos Street Realignment to 16th Street		Phases 1 – 4	Phases 5 - 6
R10	Carlos Street Traffic Calming	Phases 1	Phases 2 - 6	
R11	Highway 92 / Highway 35 (East, Lower) Intersection Improvements		Phases 1 - 6	
R12	Highway 92 / Highway 35 (West, Upper) Signal			Phases 1 - 6
R13	Highway 92 Truck Signs	Phases 1 - 6		
R14	Highway 92 Left-turn Pockets		Phases 1 - 2	Phases 3 - 6
Pe1	New and Improved Pedestrian Crossings of Highways 1 and 92	Phases 1 – 6 (subset of crossings)	Phases 1 – 6 (subset of crossings)	Phases 1 – 6 (completion)
Pe2	Highway 1 Multimodal Parallel Trail	Phase 1 – 2	Phases 3 - 6	
Pe3	Midcoast Alignment of California Coastal Trail		Phases 1 - 4	Phases 5 - 6
Pe4	Highway 1 Sidewalks in Moss Beach and Montara		Phases 1 - 4	Phases 5 - 6
Pe5	Central Moss Beach Bicycle and Pedestrian Improvements	Phases 1 -2	Phases 3 - 6	
Pe6	Montara Safe Routes to School		Phases 1 - 6	
Pe7	El Granada Safe Routes to School		Phases 1 - 6	
Pe8	Capistrano Road (South) Intersection Improvements		Phases 1 - 6	
B1	Highway 1 Bikeway	Phase 1	Phases 2 - 6	
B2	Airport Street Bikeway and Princeton Connections	Phases 1 – 2	Phases 3 - 6	
B3	Capistrano Road Bikeway	Phases 1 – 2	Phases 3 - 6	
B4	Highway 92 Bikeway			Phases 1 - 6
B5	Bicycle Parking	Phases 1 - 6		
T1	Transit Stop Improvements	Phases 1	Phases 2 - 6	
T2	Recreational Shuttle	Phases 1	Phases 2 - 6	
T3	Increased Midcoast Bus Service	Phases 1	Phases 2 - 6	
Pa1	Upper Gray Whale Cove Parking Lot Improvements	Phases 1 – 3	Phases 4 - 6	
Pa2	Wayfinding	Phase 1	Phases 2 - 6	

County Planning and Building staff anticipates leading the following actions with the support of other actors and partners within five years of Connect the Coastside's approval by the Board of Supervisors:

Table 34: Early Implementation Actions

CTC Recommendation	Action
Lot Merger	Initiate and implement the lot merger program when Connect the Coastside is adopted.
Transportation Impact Mitigation Fee	Seek funding and commit Planning and Building staff resources to engage in a nexus study to establish the Transportation Impact Mitigation Fee.
Highway 1 Multimodal Parallel Trail (Pe2)	Complete project implementation for Phase 1 of the trail. Seek funding to begin the design process for the rest of the Multimodal Parallel Trail, with the intention of completing design from El Granada to Moss Beach.
Highway 1 Pedestrian Crossings (Pe1)	Engage Caltrans and seek funding to begin the design process for at least one Highway 1 pedestrian crossing in each community. Complete the Gray Whale Cove pedestrian crossing.
Highway 1 and Cypress Avenue (R7), Highway 1 and California Avenue (R6)	Complete Project Initiation Documents for the intersections of Highway 1 at Cypress Avenue and at Highway 1 and California Avenue.
Bicycle Parking (B5)	Pursue funding to plan and implement short-term bicycle parking throughout the Midcoast.
Parking Studies	Seek funding for community-engaged planning process to develop specific parking recommendations for El Granada, Princeton, and Miramar.
Transit Amenities (T1), Recreational Shuttle (T2), and Increased Midcoast Bus Service (T3)	Engage with SamTrans as part of the Reimagine SamTrans process to begin planning around future service changes, including identifying potential park and rides, opportunities for improved transit stop amenities, and pursuing funding for additional services.
Carlos Street Realignment to 16th Street (R9)	Identify necessary partners and establish working group for a feasibility analysis.
Gray Whale Cove Parking Lot (Pa1)	Evaluate whether lot is candidate for stormwater funding and pursue funding if so.
Gray Whale Cove Turn and Acceleration Lanes (R3)	Continue engagement with Caltrans to add turn and acceleration lanes for Gray Whale Cove parking lot.
Airport Street Bikeway and Princeton Connections (B2)	Seek funding to engage in a planning-level corridor study for 30% design for Airport Street and connected bike and pedestrian accommodations.
Highway 1 Side Street Stop Signs (R2)	Evaluate feasibility of Highway 1 side street stop signs with Caltrans and County Department of Public Works to add projects to repaving schedule.
Highway 92 Truck Signs (R13)	Work with Caltrans to install the trucks use right lane signs.
Sea Level Rise and Planning Efforts	Continue efforts to maintain the current California Coastal Trail alignment with replacement of Medio Creek Bridge, while pursuing funding in partnership with FSLRRD to support planning studies related to Highway 1 and California Coastal Trail realignment to effectively address impacts of sea level rise.
Connect the Coastside Monitoring	Leverage County's existing web and data infrastructure to make existing and future transportation and development data publicly available, for the purpose of informing status reports on Connect the Coastside every 5 years.

EQUITY AND ENGAGEMENT

Equity is the condition that would be achieved if one's identity no longer predicted, in a statistical sense, how one fares. Equity is one part of justice, and thus includes work to address the root causes of inequities, not just their manifestation. This includes elimination and reversal of policies, practices, attitudes and cultural messages that reinforce differential outcomes by race, sexuality, gender, religion, ability/disability, or socioeconomic status. San Mateo County is committed to advancing equity[36] and is in the process of hiring a Chief Equity Officer to help the County engage in the necessary systems and policies change to do so. Necessarily, equity will be central to how transportation projects countywide – and those in Connect the Coastside - will be prioritized and implemented. An equity-driven approach is also central to stakeholder engagement. The County intends to advance equity through future planning and implementation processes of Connect the Coastside by ensuring engagement methods and outreach materials reach a broad range of stakeholders by using appropriate methods and languages.

[36] Board of Supervisors page on Equity https://bos.smcgov.org/equity

FUNDING AND IMPLEMENTATION MECHANISMS

This section describes potential project funding sources and other opportunities to further implementation.

Planning-Level Cost Estimates

The following section summarizes the planning-level cost estimates of the recommended infrastructure improvements. The total cost for recommended projects is nearly $77 million. As projects undergo further planning as part of the implementation process, assumptions will be revisited and revised which will affect costs.

*Table 35: Recommended Infrastructure Planning-Level Cost Estimates**

Number	Project Name	Cost (rounded to nearest $1,000)
R1A	Highway 1 Shoulder Treatment – Village	$2,401,000
R1B	Highway 1 Shoulder Treatment – Fringe	$1,603,000
R2	Highway 1 Side Street Stop Signs	$27,000
R3	Gray Whale Cove Turn and Acceleration Lanes	$438,000
R4	Highway 1 Turn and Acceleration Lanes at 8th Street	$387,000
R5	16th St / Highway 1 Intersection Control	$5,442,000
R6	California Ave / Highway 1 Intersection Control	$4,961,000
R7	Cypress Ave / Highway 1 Intersection Control	$13,983,000
R8	Main Street Traffic Calming and Bicycle/Pedestrian Connectivity	$655,000
R9	Carlos Street Realignment to 16th Street	$1,123,000
R10	Carlos Street Traffic Calming	$329,000
R11	Highway 92 / Highway 35 (East, Lower) Intersection Improvements	$254,000
R12	Highway 92 / Highway 35 (West, Upper) Intersection Control	$619,000
R13	Highway 92 Truck Signs	$2,000
R14	Highway 92 Left-turn Pockets	$685,000
Pe1A	Highway 1 Uncontrolled Pedestrian Crossings	$2,262,000
Pe1B	Highway 1 Pedestrian Overcrossing	$4,804,000
Pe1C	Highway 1 and Coronado St. Improved Pedestrian Crossing	$121,000
Pe2	Highway 1 Multimodal Parallel Trail	$9,116,000
Pe3	Midcoast Alignment Completion of California Coastal Trail	$1,951,000
Pe4	Highway 1 Sidewalks in Moss Beach and Montara	$568,000
Pe5	Central Moss Beach Bicycle and Pedestrian Improvements	$65,000
Pe6	Montara Safe Routes to School	$310,000
Pe7	El Granada Safe Routes to School	$1,162,000
Pe8	Capistrano Road (South) Intersection Improvements	$256,000
B1	Highway 1 Bikeway	$5,908,000
B2	Airport Street Bikeway and Princeton Connections	$2,017,000
B3	Capistrano Road Bikeway	$297,000

B4	Highway 92 Bikeway	$4,833,000
B5	Bicycle Parking	$340,000
T1	Transit Stop Improvements	$4,274,000
T2A	Recreational Shuttle (Fixed Costs)	$1,260,000
T2B	Recreational Shuttle (Annual Operating Costs)[1]	$926,000
T3A	Increased Midcoast Bus Service (Fixed Costs)	$3,060,000
T3B	Increased Midcoast Bus Service (Annual Operating Costs)[1]	$3,400,000
Pa1	Upper Gray Whale Cove Parking Lot Improvements	$1,219,000
Pa2	Wayfinding	$185,000
TOTAL[1]*		**$76,917,000**

*Cost estimates are planning-level and preliminary and subject to change
[1]Total excludes annual operating costs for transit service (T2B and T3B)

OPPORTUNITIES FOR IMPLEMENTATION

Partnerships with agencies, like Caltrans, SamTrans, and others, along with community stakeholders, such as the MCC, community-based organizations, and private sector partners are critical to compete for grant funding opportunities and successfully implement projects. Many funding sources prioritize allocating resources for disadvantaged communities to work towards rectifying past planning and policy practices that have led to vast inequities. Federal and State goals also prioritize addressing climate change and improving community health by reducing greenhouse gas emissions; therefore, many grant resources also prioritize areas with high population density near high quality transit and locations with demonstrated transportation safety concerns. Projects in Connect the Coastside may not compete as readily for these opportunities given its current conditions. Opportunities to further implementation of Connect the Coastside's recommendations, beginning with the most likely opportunities, are listed below.

Table 36: Priority Funding Sources

Source	Description	Potentially Eligible Projects	Website
1. Coastal Conservancy Grants	Administered by the California Coastal Conservancy, grants are provided to non-profit organizations and public agencies for projects that restore and protect the California coast and increase public access to it. Grants are awarded through a standing pre-proposal solicitation and through scheduled grant rounds. This includes disbursements from Proposition 1, Prop 68, and the Greenhouse Gas Reduction Fund. Funds focus on ecosystem and watershed protection, restoration projects, rivers and wetlands and protection, and climate adaptation.	Coastal trail, Multimodal Parallel Trail	https://scc.ca.gov/grants/ and https://scc.ca.gov/grants/grant-programs/
2. State Highway Operation and Protection Program (SHOPP)	Led by Caltrans, the SHOPP is the State Highway System's "fix it first" program that funds the repair and preservation, emergency repairs, safety improvements, and some highway operational improvements on the State highway system. Caltrans leads the submission of eligible projects.	Highway pedestrian crossings, acceleration/turn lanes	https://dot.ca.gov/programs/financial-programming/state-highway-operation-protection-program-shopp-minor-program-shopp
3. California Office of Traffic Safety Grants (OTS)	Administered annually by the California Office of Traffic Safety, OTS grants are for traffic-safety education, awareness, and enforcement programs aimed at specific issues and behaviors (like distracted or drugged driving) that can lead to serious injuries and fatalities on roads.	Traffic safety campaigns to address speeding	https://www.ots.ca.gov/grants/
4. Recreational Trails Program (RTP)	Administered by the California Department of Parks and Recreation, this program supports trail maintenance, building, restoration, trailhead facilities, and maintenance equipment. The program is being updated and is usually available annually.	Coastal Trail, Multimodal Parallel Trail	https://www.parks.ca.gov/?page_id=24324
5. Transportation Funds for Clean Air (TFCA)	Administered by the Bay Area Air Quality Management District and C/CAG, this program funds projects that improve air quality. Eligible projects are broad and can include shuttle, vanpool, or smart growth projects; alternative vehicles; bikeways; signal timing; and engine replacement.	Bike and pedestrian infrastructure, and recreational shuttles	https://www.baaqmd.gov/funding-and-incentives/funding-sources/regional-fund and https://www.baaqmd.gov/funding-and-incentives/public-agencies/county-program-manager-fund

6. Vehicle Trip Reduction Grant Program	Administered by the Bay Area Air Quality Management District, the Vehicle Trip Reduction Grant Program provides funding to support projects that improve air quality and reduce greenhouse gas emissions by reducing vehicle trips and miles traveled in the Bay Area. Eligible projects include transportation service projects to reduce single-occupancy vehicle use, shuttle service, and bike facilities.	Bike and pedestrian infrastructure, and recreational shuttles	https://www.baaqmd.gov/?sc_itemid=B056735B-74BD-4CD0-A744-936A1CFD05A3
7. Storm Water Grant Program (Prop 1)	Administered by the State Water Resources Control Board, this program distributes approximately $200 million statewide for the development of Storm Water Resource Plans and multi-benefit storm water management programs including green infrastructure, rainwater, and storm water capture projects.	Parking lot improvements, if includes green infrastructure	https://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/
8. Transportation Development Act Article 3 (TDA Article 3)	Administered annually by C/CAG using pass-through funding from MTC, this program funds projects to encourage walking and bicycling. TDA Article 3 funds are derived from Local Transportation Funds (LTF, which is a ¼ cent statewide sales tax) and State Transit Assistance funds (state sales tax on gasoline and diesel fuel). Eligible projects include construction of bike/ped projects, planning, and restriping bike lanes.	Bike and pedestrian infrastructure	https://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/funding-sales-tax-and-0
9. Measure A	The San Mateo County Transportation Authority (TA) was formed in 1998 with the passage of the voter-approved half-cent sales tax for countywide transportation projects and programs, known as Measure A which is authorized through 2033. The TA administers the Measure A funds through various calls for projects every two years.	Bike and pedestrian infrastructure, and transit projects	https://www.smcta.com/about/Measure_A.html
10. Measure W	Measure W is a voter-approved half-cent sales tax (passed in 2018) that provides additional resources to improve transit and relieve traffic congestion. The funds are administered by the San Mateo County Transportation and SamTrans Board of Directors. The TA Strategic Plan guides project evaluation and can fund highway projects, local street repair, expanded bicycle and pedestrian facilities, and improved transit connections. Call for projects typically happen every two years.	Bike and pedestrian infrastructure, transit projects, acceleration/turn lanes	https://www.smcta.com/about/Measure_W.html
11. San Mateo County Safe Routes to School	Administered by C/CAG and the San Mateo County Office of Education, this program intends to increase the number of students able to walk and bike to school. Funds are available to school districts for education, enforcement and promotion/encouragement activities, evaluation and project coordination; and for small capital projects.	Safe Routes to School	https://www.smcoe.org/for-schools/safe-and-supportive-schools/safe-routes-to-school/ and https://ccag.ca.gov/programs/transportation-programs/safe-routes-to-school/

12. San Mateo County Bicycle Parking Reimbursement Program	Administered by Commute.org with funds from C/CAG, San Mateo County Transportation Authority, and Bay Area Air Quality Management District, this program reimburses applicants up to 50% of the total cost of purchasing and installing bicycle parking facilities up to $500/unit with a $5,000 cap per applicant per fiscal year.	Bicycle parking	https://www.commute.org/employer-services/179-bike-parking-at-half-cost
13. San Mateo County Road Fund	The Road Fund was established by the Boards of Supervisors in 1935, in accordance with Streets and Highways Code section 1622, for all amounts paid to the county out of money derived from the Highway Users Tax Fund. A portion of the Federal Forest Reserve revenue received by the county also is required to be deposited into the Road Fund (Government Code section 29484). In addition, the Board may authorize the deposit of other sources of revenue into the Road Fund. Once money is deposited into the Road Fund, it is restricted to expenditures made in compliance with Article XIX of the California Constitution and Streets and Highways Code sections 2101 and 2150. The fund is largely administered by the Department of Public Works.	Various	https://publicworks.smcgov.org/our-organization https://www.sco.ca.gov/aud_rfa_2016.html

Table 37: Secondary Funding Sources

Source	Description	Website
1. Federal Lands Access Program (FLAP)	The Federal Lands Access Program (Access Program) was established in 23 U.S.C. 204 to improve transportation facilities that provide access to, are adjacent to, or are located within Federal lands. The Access Program supplements State and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators. Projects are selected by a Programming Decision Committee (PDC) established in each State. The PDCs request project applications through a call for projects. The frequency of the calls is established by the PDCs. This program has funded transportation improvements in relevant areas, including roundabouts and bridges.	https://highways.dot.gov/federal-lands/programs-access
2. Better Utilizing Investments to Leverage Development (BUILD) Grant (Formerly TIGER)	Administered annually by the United States Department of Transportation (USDOT), BUILD (formerly TIGER) is a nationally competitive grant for capital investments on surface transportation projects that achieve a significant impact for a metropolitan area, region, or the nation. Eligible projects include roads, bridges, transit, rail, ports, or intermodal transportation.	https://www.transportation.gov/BUILDgrants

3.	**Congestion Management & Air Quality (CMAQ)**	Administered annually by the Federal Highway Administration (FHWA), CMAQ provides funding for state and local governments for transportation programs and projects that support the Clean Air Act, improving air quality and providing congestion relief. Eligible projects include bikeways, alternative fuel infrastructure, and diesel engine retrofits.	https://www.fhwa.dot.gov/environment/air_quality/cmaq/
4.	**Surface Transportation Block Grant (STBG) Program**	Administered by the Federal Highway Administration, this program funds projects to preserve and improve the conditions and performance on any Federal-aid highway, bridge and tunnel projects on any public road, pedestrian and bicycle infrastructure, and transit capital projects, including intercity bus terminals. STBG supports California's local Highway Bridge Program.	https://www.fhwa.dot.gov/specialfunding/stp/ and https://www.fhwa.dot.gov/fastact/factsheets/stbgfs.cfm
5.	**California Active Transportation Program (ATP)**	Administered every two years by the California Transportation Commission (CTC) and Caltrans, the ATP consolidates of former federal and state programs to fund planning, programs, and infrastructure that support safe walking and bicycling. A strong preference is given to projects in disadvantaged communities and with demonstrated safety issues. Eligible projects include bicycle and pedestrian capital infrastructure, non-infrastructure (encouragement, education programs), and jurisdiction-wide active transportation plans.	https://catc.ca.gov/programs/active-transportation-program and https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/active-transportation-program
6.	**Regional Active Transportation Program**	Administered by the Metropolitan Transportation Commission (MTC), this is the companion program to the statewide ATP.	https://mtc.ca.gov/our-work/invest-protect/investment-strategies-commitments/protect-our-climate/active-transportation
7.	**California Sustainable Transportation Equity Project (STEP)**	Administered as a pilot project by the California Air Resources Board (CARB), STEP is a transportation equity pilot project for Fiscal Year 2019-20 that aims to increase transportation equity in disadvantaged and low-income communities by addressing community residents' transportation needs, increasing access to key destinations, and reducing greenhouse gas emissions by funding planning, clean transportation, and supporting projects. Eligible projects include subsidizing active transportation with new bicycle and pedestrian infrastructure.	https://ww2.arb.ca.gov/our-work/programs/low-carbon-transportation-investments-and-air-quality-improvement-program-1
8.	**Clean Mobility Options (CMO)**	Administered annually by CARB, the Clean Mobility Options Voucher Pilot Program provides voucher-based funding for zero-emission carsharing, car- and van-pooling, bike- and scooter-sharing, innovative transit services, and ride-on-demand services in California's historically underserved communities. Eligible projects must be in a disadvantaged community, tribal land, or serves a deed-restricted affordable housing facility within an AB 1550 low-income community.	https://www.cleanmobilityoptions.org/

9. Sustainable Transportation Planning Grants	Administered annually by Caltrans, Sustainable Transportation Planning Grants fund planning for studies and preliminary design to identify and evaluate projects that further statewide sustainability goals. Eligible projects include corridor studies, pilot projects, community engagement, and more.	https://dot.ca.gov/programs/transportation-planning/regional-planning/sustainable-transportation-planning-grants
10. Highways Safety Improvement Program (HSIP)	Administered every few years by the Caltrans Division of Local Assistance, Caltrans manages California's local agency share of federal HSIP funds to reduce fatalities and serious injuries on all public roads. HSIP projects should be identified based on crash experience, crash potential, crash rate, and other data. Eligible projects include safety-related pedestrian, bikeway, or roadway projects.	https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program
11. Transit and Intercity Rail Capital Program (TIRCP)	Administered by the California State Transportation Agency (CalSTA), this program funds capital improvements that modernize California's intercity rail, bus, ferry, and rail systems to reduce greenhouse gas emissions, expand transit service to increase ridership, and improve transit safety. Eligible projects include bus transit improvements, including vanpool services operated as public transit and first-/last-mile solutions.	https://calsta.ca.gov/subject-areas/transit-intercity-rail-capital-prog
12. State Transportation Improvement Program (STIP)	Administered every two years by the California Transportation Commission, the State Transportation Improvement Program (STIP) is the biennial five-year plan adopted by the CTC for future allocations of certain state transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. State law requires the Commission to update the STIP biennially, in even-numbered years, with each new STIP adding two new years to prior programming commitments. Projects need to be nominated in the Regional Transportation Improvement Program (RTIP) to be eligible for the STIP. C/CAG submits projects from San Mateo County to the Metropolitan Transportation Commission for proposed inclusion in the RTIP to the State.	https://catc.ca.gov/programs/state-transportation-improvement-program
13. State-Local Partnership Program (LPP)	Administered by the California Transportation Commission, the LPP provides funding to jurisdictions in which voters have approved fees or taxes dedicated solely to transportation. Funding is distributive through competitive and formulaic programs and must be matched by the local jurisdiction. Eligible projects include state highway system rehabilitation, improvements to transit facilities, local roads, bicycle and pedestrian safety, and more.	https://catc.ca.gov/programs/sb1/local-partnership-program
14. Affordable Housing and Sustainable Communities Program (AHSC)	Administered annually by the California Strategic Growth Council (SGC), this program is available to government agencies, developers, and non-profits to fund affordable housing combined with multi-modal improvements aimed to reduce greenhouse gas emissions and advance sustainability goals. Eligible projects include affordable housing construction, bicycle, pedestrian, and transit improvements near the affordable housing.	https://sgc.ca.gov/programs/ahsc/

15. Transformative Climate Communities Program (TCC)	Administered by the Strategic Growth Council and Department of Conservation every few years, TCC funds community-led development and infrastructure projects with economic, environmental, and health benefits to disadvantaged communities and those disproportionately burdened by pollution. Eligible projects include bicycle and pedestrian improvements, bike share programs, and others.	https://sgc.ca.gov/programs/tcc/
16. Environmental Enhancement and Mitigation Grant Program (EEMP)	Administered annually by the California Natural Resources Agency, this program funds government and non-profit organizations to mitigate the environmental impacts caused by new or modified transportation facilities.	https://resources.ca.gov/grants/environmental-enhancement-and-mitigation-eem/
17. Urban Greening Grant Program	Administered annually by the California Natural Resources Agency, this statewide grant program allocates cap-and-trade dollars to projects that reduce greenhouse gas emissions, particularly in disadvantaged communities. Eligible projects include bike and pedestrian facilities, conversion of built environment into green space, and incorporates green infrastructure.	https://resources.ca.gov/grants/urban-greening/
18. Recreational Trails and Greenways Grant Program	Administered by the California Natural Resources Agency, this program funds projects that expand access to the outdoors and boost recreational opportunities for communities and prioritizes disadvantaged communities. Eligible projects include non-motorized infrastructure that promotes access to parks, waterways, and outdoor recreational areas.	https://resources.ca.gov/grants/trails
19. Local Streets and Roads Program (LSR)	Administered annually by the California Transportation Commission, the LSR program apportions revenue from SB 1 ($1.5 billion statewide) to jurisdictions for basic road maintenance, rehabilitation, and safety projects. Jurisdictions submit proposed project lists to the CTC for review and approval.	https://catc.ca.gov/programs/sb1/local-streets-roads-program
20. Solutions for Congested Corridors (SCCP)	Administered annually by the California Transportation Commission, this program aims to reduce congestion throughout California, focusing on multimodal corridor improvements and prioritizing safety, congestion, accessibility, economic development, and air pollution/GHG reductions.	https://catc.ca.gov/programs/sb1/solutions-for-congested-corridors-program
21. One Bay Area Grant Program (OBAG)	Administered every five years by the Metropolitan Transportation Commission (MTC), this grant program distributes federal funds to Congestion Management Agencies (in San Mateo County, C/CAG) to advance regional goals. Funds can be used for streetscape enhancements, local road maintenance, bicycle and pedestrian improvements, and more.	https://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/focused-growth/one-bay-area-grants
22. Measure M San Mateo County Vehicle Registration Fee	Measure M was approved by voters in 2010 and imposes a $10 fee on vehicles registered in San Mateo County. Administered by C/CAG, 50% of funds are allocated to jurisdictions for local streets and roads, and 50% is used for countywide transportation programs such as transit, regional congestion management, and safe routes to school.	https://ccag.ca.gov/funding/measure-m/

23. Lifeline Transportation Program (LTP)	Administered by C/CAG through funds from the Metropolitan Transportation Commission, this program funds community-based transportation projects that are developed through a collaborative process. Projects must address transportation gaps or barriers identified in plans, and specifically, address low-income and disadvantaged neighborhood needs.	https://mtc.ca.gov/our-work/fund-invest/investment-strategies-commitments/transit-21st-century/lifeline-transportation
24. Measure K	Measure K is a countywide half-cent sales tax extension passed by local voters in November 2016 to support essential County services and to maintain or replace critical facilities. Measure K funds are allocated in three ways: 1) through the County's two-year budget cycle, 2) through mid-year adjustments to address emerging needs not anticipated at the time the budget was adopted, and 3) for one-time loans or grants to fill specific needs as recommended by a member of the Board of Supervisors. Funds can be used for addressing the effects of sea level rise, keeping County parks open, maintaining health care for low-income children, seniors, and people with disabilities, and maintaining paratransit services.	https://cmo.smcgov.org/measure-k-frequently-asked-questions
25. Regional Measures 1, 2 and 3	Approved by voters in 1988, 2004, and 2016, Regional Measures 1, 2, and 3 allocate tolls on state-owned toll bridges and are used to finance state highway and transit improvements. Projects in the approved expenditure plan for RM 3 include more frequent transbay bus service, interchange improvements, expanded express lane network, and others.	https://mtc.ca.gov/our-work/invest-protect/toll-funded-investments and https://mtc.ca.gov/our-work/fund-invest/toll-funded-investments/regional-measure-3

Other opportunities include:

- **Road Maintenance and Repaving**: Road maintenance and repaving creates an opportunity to change the way a street looks and functions; for example bike lanes or marked crosswalks can be more easily added when a street is undergoing maintenance. Senate Bill 1 Road Repair and Accountability Act of 2017 (which funds in part the San Mateo County Road Fund) increases the amount of revenue local jurisdictions will receive for local street maintenance and rehabilitation. Funds are generated through an increase in the gas and diesel excise tax, among others. Most revenues will be allocated on a per capita basis and come out of a Road Maintenance and Rehabilitation Account (RMRA), where jurisdictions will have to prioritize fixing existing infrastructure first and provide an adopted list of projects by the California Transportation Commission. To learn more about SB 1, see https://cmo.smcgov.org/faqs-road-repair-and-accountability-act-senate-bill-1, https://www.cacities.org/Policy-Advocacy/Hot-Issues/Transportation-Funding and https://sco.ca.gov/Files-AUD/gas_tax_guidelines31219.pdf.
- **Other Agency Partnerships**: As described in the Actors, Partners, and Stakeholders chapter, there are other decision-making bodies, agencies, and partners that can further implementation of Connect the Coastside, such as the Granada Community Services District, Montara Water and Sanitary District, Caltrans, Midpeninsula Regional Open Space District, and others. These entities build and maintain infrastructure in the Midcoast and may incorporate Connect the Coastside's recommendations into their future planning and implementation efforts.
- **Foundations, Private Sector, and Non-profit Partners**: Aside from public sector partners, foundations and private and non-profit partners are often interested in funding projects and programs that align with their interests and goals. Potential foundations can be found here: https://ncg.org/directory
- **Development**: In some cases, the County can impose conditions on new development that can help incrementally implement Connect the Coastside and keep with its goals. Examples include: providing or complete sidewalks, public bicycle parking, public vehicle parking, and others.
- **Transportation Impact Mitigation Fee**: The proposed Transportation Impact Mitigation Fee is a key opportunity to raise funds to implement projects in Connect the Coastside and is detailed further below.

Transportation Impact Mitigation Fee (TIMF)

What is a TIMF?

A transportation impact mitigation fee is a type of development impact fee and is a way to collect a proportional share of funds from new development to offset transportation impacts of that new development. The TIMF 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.

How is a TIMF established?

In order to establish a Transportation Impact Mitigation Fee, the County will need to document the "nexus" or linkage between the fees being charged to new development, the benefits to mitigate impacts, and cost allocation. These legal requirements are in California Government Code section 66000-66025 and commonly called the "Mitigation Fee Act" or "AB 1600 requirements." Only a portion of Connect the Coastside's recommended projects' costs can be allocated to new development because some of the locations in the study area are already deficient without the addition of new development. The nexus study would show the specific connection between the transportation project need and the new development. The TIMF does not go into effect automatically if Connect the Coastside is adopted.

How much money would a TIMF generate for transportation?

The total amount of money generated by the TIMF is dependent upon how much development ultimately gets built. The calculation for the TIMF is based on the amount of forecasted development, the cost of projects needed to address the impacts of the forecasted development, and the allocation of a fee per housing unit (or per square foot for commercial). All of the forecasted development, in the amount that it is estimated by each land use type, would have to occur in order to generate the full need.

What happens if the TIMF does not move forward?

Without the adoption of a TIMF, proposed developments of a certain size would cause transportation impacts where they could be required to fund transportation improvements; these projects are evaluated on a case by case basis. Smaller projects may not be required to fund transportation improvements. The County, other actors, and partners would still pursue implementation of projects using other sources of revenue and grants.

What can a TIMF be spent on?

Transportation impact fees can be used to fund a variety of transportation improvements, which help to mitigate or "offset" transportation impacts. By law, these fees cannot go to a general fund. The final nexus study would include the final project list. Cities in California have used fees to fund transit services, bicycle and pedestrian infrastructure, transportation demand management programs, roadway improvements, and other fee-eligible projects.

How is a TIMF calculated?

The level of funding that might be available from a transportation impact mitigation fee program can be estimated using:

(1) **Transportation Project List** – Projects to be included in the fee program and their cost estimates

(2) **Forecast of Future Land Use** - The potential for new residential units and new nonresidential uses within the study area

(3) **Allocation of Costs to New Development** – The percentage of project costs that can be associated with new development

(4) **Traffic Forecast** – The volume of traffic over specific roadway segments during the peak period as well as vehicle trip origins and destinations

These are then used to determine the fee amounts per dwelling unit or per square foot.

Connect the Coastside Preliminary TIMF Calculation

(1) Transportation Project List

The list of projects that would be included in the mitigation fee program is consistent with those described Table 29: Recommended Infrastructure Projects on page 93. 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.

(2) Forecast of Future Land Use and Growth Potential

Transportation impacts first must be scaled to the impacts of one single-family residential household or Dwelling Unit Equivalent (DUE). Standard trip generation rates, average trip lengths, and pass-by trip percentages were used in this process (see Table 38: Dwelling Unit Equivalent (DUE) Rates). These Dwelling Unit Equivalent rates are then applied to divide improvement costs on an equivalent unit basis for the transportation impact fee calculation. The quantity of new development expected in the study area is from the land use buildout analysis based on the Constrained Development Forecast (Table 11 and Table 12 on page 40). The Constrained Development Forecast provides a more realistic estimate of the number of dwelling unit equivalents that the fee will collect over the planning horizon, which is a key input into the calculation. Using the Maximum Buildout Forecast would be an overstatement of growth, resulting in a lower than needed fee. The projected new development was then allocated to land uses based on zoning.

Table 38: Dwelling Unit Equivalent (DUE) Rates

Land Use Category	Unit	PM Peak Hour Trip Rate per Unit[1]	Trip Length (miles)[2]	Percent New Trips	VMT per Unit	DUE per Unit
Formula		[A]	[B]	[C]	[D] = ([A] x [B] x [C])/100	[E] = [D] / [D for single-family]
Single-family	Dwelling Unit	0.99	5.0	100%	4.95	1.00
Multi-family	Dwelling Unit	0.56	5.0	100%	2.80	0.57
Retail[2]	Square Feet x 1000	3.81	2.3	76%	6.66	1.35
Office	Square Feet x 1000	1.40	4.5	92%	5.80	1.17
Industrial	Square Feet x 1000	1.15	5.1	92%	5.40	1.09

Source: DKS Associates, 2017
Notes:
[1]ITE Trip Generation Web-based App (https://itetripgen.org)
[2]ITE Journal, May 1992

Table 39: Constrained Development Forecast (Year 2040) by Land Use and Growth in DUEs

Land Use Category	Unit	DUE per Unit[1]	(A) Existing Uses	(B) Existing DUEs	(C) Future (2040) Uses[2]	(D) Future DUEs	(E) Expected Growth[3]	(F) Expected Growth DUEs
Single-Family	Dwelling Unit	1.00	7,498	7,498	8,835	8,835	1,213	1,213
Multi-Family		0.57	1,283	726	1,916	1,084	575	325
Retail	Square Feet x 1000	1.35	234	315	400	538	165	221
Office		1.17	708	828	1,280	1,499	494	578
Industrial		1.09	298	325	711	775	191	208
Total:				9,691		12,731		2,546
Percent growth DUEs:				**=(F)/(D)**	**0.20**			

Notes:
[1]Dwelling Unit Equivalent (DUE) per thousand square feet for non-residential uses
[2]Includes existing uses, projects already in development pipeline, and remaining capacity
[3]Does not include projects in development pipeline

(3) Traffic Forecast for 2040

Traffic forecasts were generated with the City/County Association of Governments (CCAG) travel demand model. The C/CAG 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 40).

Table 40: Percentage of Local Growth Traffic at Select Locations, 2040 PM Peak Period

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

Notes:
[1] Trips with an origin and/or destination in the study area.
[2] Trips beginning and ending outside the study area
[3] "Local" trips associated with existing development (calculated with percent existing DUEs)
[4] "Local" trips associated with new development (calculated with percent growth DUEs)

(4) Allocation of Costs to New Development

Some improvements included in Connect the Coastside address existing 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 in the study area, excluding any new through (not beginning or ending in the Midcoast) trips (Local Growth percentage in Table 40: Percentage of Local Growth Traffic at Select Locations, 2040 PM Peak Period).

Bicycle and pedestrian improvements serve local trips, those that have their origin or destination within the study area. The lack of bicycle and pedestrian facilities is an existing deficiency. Since improvements will benefit both existing and future residents, the cost of projects allocated to new development will equal the new development's proportional share of the total future development (existing plus new development) in the study area measured in DUEs.

$$New\ Development\ Share = \frac{New\ Development\ DUEs}{Study\ Area\ DUEs\ (Existing + New\ Development)}\ x\ 100\%$$

Similarly, there are 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 the new development's proportional share of the total future development (existing plus new development) in study area, measured in DUEs. This is the total percent growth DUEs (Table 39: Constrained Development Forecast (Year 2040) by Land Use and Growth in DUEs). The table below summarizes the amount per project allocated to the fee program.

Table 41: Project Costs Allocated as Percentage of Growth Dwelling Unit Equivalents or Local Growth Traffic Percentage

Number	Project Name	Total Cost (rounded to nearest $1,000)	Cost Allocated to Fee Program (rounded to nearest $100)
R1A	Highway 1 Shoulder Treatment – Village	$2,401,000	$480,200
R1B	Highway 1 Shoulder Treatment – Fringe	$1,603,000	$320,600
R2	Highway 1 Side Street Stop Signs	$27,000	$5,400
R3	Gray Whale Cove Turn and Acceleration Lanes	$438,000	$87,600
R4	Highway 1 Turn and Acceleration Lanes at 8th Street	$387,000	$77,400
R5	16th St / Highway 1 Intersection Control	$5,442,000	$1,088,400
R6	California Ave / Highway 1 Intersection Control	$4,961,000	$992,200
R7	Cypress Ave / Highway 1 Intersection Control	$13,983,000	$2,796,600
R8	Main Street Traffic Calming and Bicycle/Pedestrian Connectivity	$655,000	$131,000
R9	Carlos Street Realignment to 16th Street	$1,123,000	$224,600
R10	Carlos Street Traffic Calming	$329,000	$65,800
R11	Highway 92 / Highway 35 (East, Lower) Intersection Improvements	$254,000	$50,800
R12	Highway 92 / Highway 35 (West, Upper) Intersection Control	$619,000	$111,400
R13	Highway 92 Truck Signs	$2,000	$400
R14	Highway 92 Left-turn Pockets	$685,000	$137,000
Pe1A	Highway 1 Uncontrolled Pedestrian Crossings	$2,262,000	$452,400
Pe1B	Highway 1 Pedestrian Overcrossing	$4,804,000	$960,700
Pe1C	Highway 1 and Coronado St. Improved Pedestrian Crossing	$121,000	$24,200
Pe2	Highway 1 Multimodal Parallel Trail	$9,116,000	$1,823,100
Pe3	Midcoast Alignment Completion of California Coastal Trail	$1,951,000	$390,200
Pe4	Highway 1 Sidewalks in Moss Beach and Montara	$568,000	$113,600

Pe5	Central Moss Beach Bicycle and Pedestrian Improvements	$65,000	$13,000
Pe6	Montara Safe Routes to School	$310,000	$62,000
Pe7	El Granada Safe Routes to School	$1,162,000	$232,400
Pe8	Capistrano Road (South) Intersection Improvements	$256,000	$51,200
B1	Highway 1 Bikeway	$5,908,000	$1,181,500
B2	Airport Street Bikeway and Princeton Connections	$2,017,000	$403,400
B3	Capistrano Road Bikeway	$297,000	$59,400
B4	Highway 92 Bikeway	$4,833,000	$966,500
B5	Bicycle Parking	$340,000	$68,000
T1	Transit Stop Improvements	$4,274,000	$854,700
T2A	Recreational Shuttle (Fixed Costs)	$1,260,000	n/a
T2B	Recreational Shuttle (Annual Operating Costs)[1]	$926,000	n/a
T3A	Increased Midcoast Bus Service (Fixed Costs)	$3,060,000	n/a
T3B	Increased Midcoast Bus Service (Annual Operating Costs)[1]	$3,400,000	n/a
Pa1	Upper Gray Whale Cove Parking Lot Improvements	$1,219,000	$243,800
Pa2	Wayfinding	$185,000	$37,000
TOTAL[1]*		**$76,917,000**	**$14,506,500**

Notes:

Percentage allocation for all is based on overall growth percent DUEs, which is 0.2 (20%), except for:

[1]Local growth percentage increase is 0.2 (20%)

[2]Local growth percentage increase is 0.18 (18%)

*Costs for recreational shuttle and increased bus service are excluded from the mitigation fee

(5) Estimated Fees

Table 42 summarizes the transportation impact fee calculation. A total of approximately $14.5 million has been allocated to the fee program. The total allocated costs are distributed across an expected 2,546 DUEs, resulting in a fee of $5,698 for each single-family dwelling unit, $3,223 for each multifamily dwelling unit, and costs of $7.67, $6.67, and $6.21 per square foot for retail, office and industrial development, respectively.

Table 42: Transportation Impact Mitigation Fee Rates

Cost of Improvements Allocated to Coastside Area Growth			$14,506,500
Growth in Dwelling Unit Equivalents (DUEs)			2,546
Cost per DUE			$5,698
Land Use	**Units**	**DUE**	**Fee per Unit or Square Foot[1]**
Single-Family	Dwelling Unit	1.00	$5,698
Multi-Family	Dwelling Unit	0.57	$3,223
Retail	Square Foot	1.35	$7.67
Office	Square Foot	1.17	$6.67
Industrial	Square Foot	1.09	$6.21

9.Appendices

APPENDIX A – ENGAGEMENT

2020 Engagement Report

Moss Beach Charette Meeting Notes

APPENDIX B – PROJECT REPORTS

APPENDIX C – PLANNING AND POLICY CONTEXT

APPENDIX D – VEHICLE COUNTS COMPARISON

APPENDIX E – ANALYSIS WORKSHEETS

Existing Conditions – Highways 1 and 92 – Synchro and Simtraffic Output

Buildout Conditions – Highways 1 and 92 – Synchro and Simtraffic Output

Mitigated Buildout Conditions – Highways 1 and 92 – SIDRA, Simtraffic, and Synchro Output

Appendices are available for download on the Connect the Coastside webpage at https://planning.smcgov.org/connect-coastside

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

Connect the Coastside

San Mateo County Midcoast
Comprehensive Transportation Management Plan
Appendices

Final Administrative Draft – January 2021

COUNTY OF SAN MATEO

9. Appendices

APPENDIX A – ENGAGEMENT

2020 ENGAGEMENT REPORT

MOSS BEACH CHARETTE MEETING NOTES

APPENDIX B – PROJECT REPORTS

APPENDIX C – PLANNING AND POLICY CONTEXT

APPENDIX D – VEHICLE COUNTS COMPARISON

APPENDIX E –ANALYSIS WORKSHEETS

EXISTING CONDITIONS – HIGHWAYS 1 AND 92 – SYNCHRO AND SIMTRAFFIC OUTPUT

BUILDOUT CONDITIONS – HIGHWAYS 1 AND 92 – SYNCHRO AND SIMTRAFFIC OUTPUT

MITIGATED BUILDOUT CONDITIONS – HIGHWAYS 1 AND 92 – SIDRA, SIMTRAFFIC, AND SYNCHRO OUTPUT

APPENDIX A - ENGAGEMENT

Community Input Shapes the Future of Transportation on the Midcoast

Connect the Coastside 2020 Outreach Summary Report

Thank You

San Mateo County staff would like to thank everyone who provided feedback on the public working draft of the Connect the Coastside plan (CtC), a Comprehensive Transportation Management Plan for the San Mateo County Midcoast. The goal of Connect the Coastside is to improve mobility and safety for residents and visitors of the Midcoast, and the input received from community members is vital to creating a strong plan that outlines the vision of transportation on the Midcoast.

The purpose of this report is to summarize the Connect the Coastside outreach efforts that took place from January through August 2020. This report:

- Provides an overview of the outreach efforts
- Summarizes the feedback on the draft Plan and proposed updates
- Presents the timeline for finalizing Connect the Coastside and previews additional opportunities for future input and involvement

Greater detail and additional materials relating to the outreach efforts, comments, and proposed updates to CtC can be found in the Appendices 1 through 7 of this report.

Background

The original stimulus for Connect the Coastside came from the San Mateo County Local Coastal Program (LCP) Policy 2.53, which requires the development of a comprehensive transportation management plan to address the cumulative traffic impacts of residential development on the Midcoast. Development for CtC began in 2014 and included creating development forecasts, projecting future traffic, identifying transportation deficiencies, and analyzing potential improvements and development constraints.

On January 15, 2020, San Mateo County released a public working draft of the Connect the Coastside Plan for public review and feedback. The Plan recommends programs and infrastructure projects to improve mobility and accommodate transportation needs due to future development and growth through the year 2040. The Plan's recommendations are focused on the areas surrounding Highway 1 and Highway 92 and includes the unincorporated Midcoast communities of Montara, Moss Beach, El Granada, Princeton and Miramar.

The Connect the Coastside project team consists of staff from the San Mateo County Planning and Building Department working in collaboration with staff from the Office of Sustainability, County Manager's Office, the Department of Public Works and consultants from DKS Associates. The Plan has also been shaped with the help of a Technical Advisory Committee (TAC) that includes Caltrans, City of Half Moon Bay, SamTrans, and many more.

Outreach Efforts

The bulk of recent Connect the Coastside outreach efforts took place from April to August 2020 and are summarized in this section. In-person outreach events were originally planned for March and April 2020, but due to the COVID-19 pandemic, the project team postponed and reimagined outreach efforts to ensure the safety of participants. The goals of the outreach efforts were to hear from as many different Coastside stakeholders as possible and to provide multiple ways to learn about and provide comments on the Plan. Several outreach opportunities focused on reaching a broad cross-section of Coastside stakeholders including youth, mono-lingual Spanish speakers, workers, renters, and low-income residents.

Listening to the Midcoast Survey

The project team reviewed findings from the Listening to the Midcoast Mobility **online survey**, led by the Midcoast Community Council and Supervisor Horsley's office. These findings helped to inform and shape the Connect the Coastside outreach efforts.

Updates to the Website

To share information and provide an opportunity for people to provide comments, the project team made the following updates to the Connect the Coastside website:

- Created and posted a **library** of past CtC documents and meeting materials
- Posted a recorded CtC overview **presentation**
- Developed and shared 7 **factsheets** summarizing the CtC proposed projects and policies
- Added a **comment box** for community members to submit comments and sign up for the CtC emailing list

Comments received through both the comment box and emailed to the project team are incorporated into the summary of comments and proposed changes, detailed in Appendix 7.

Virtual Community Meetings

Between May and June 2020, the Connect the Coastside project team held three virtual community meetings with Coastside community members to share information about the draft Plan and to gather community input to inform the Plan's goals and proposed projects. Each meeting included the following:

- Welcome from County District 3 Supervisor Don Horsley
- Presentation on Connect the Coastside
- Polls to learn about the participants and their transportation priorities
- Question and answer session
- Breakout rooms for small group discussions with feedback recorded by notetakers
- Report out to the larger group from the small group discussions
- Explanation of next steps for moving forward with the Plan

The three virtual community meetings were conducted in English and were not translated into Spanish, as the project team heard feedback that bilingual virtual meetings with real time translation did not provide the best experience for Spanish speakers. In total, about 132 community members participated across the three public workshops. Some participated in all three workshops while others attended one or two. A detailed summary of the meetings and responses to questions are provided in Appendices 1 through 5.

Meeting Date and Topic		Approximate # of Attendees
5/30	Overview of Connect the Coastside	40
6/15	Moss Beach, Montara	60
6/30	El Granada, Princeton, Miramar	32

Youth Group Meeting

The project team collaborated with the Youth Leadership institute (YLI) to host a virtual Zoom meeting on July 7, 2020 to connect with youth who live, work, and/or visit the Coastside, hear about their transportation experiences and needs, and ensure that their needs are incorporated in CtC. The County provided an overview presentation on Connect the Coastside similar to the May 30th virtual community meeting. Youth participants shared their perspectives on what's working well and what is challenging when it comes to transportation, which Plan ideas are most important, how to improve access to their favorite places, and their vision for transportation on the coast. Students also responded to several poll questions about how they get around. Biking, walking and transit improvements were most important to this group who rely on family members and friends to get around since they cannot drive. Notes from youth meeting are included in Appendix 6.

Outreach Method	Views and Responses
July 7, 2020 Youth focus group	7 youth and 2 staff members from YLI

Spanish Language Outreach

To hear from monolingual Spanish speakers who live and work on the Midcoast, the project team used a combination of strategies to provide information about the Plan and ask for input. Outreach was designed to make participation easy and accessible by reaching people in places they already visited and by providing multiple options for participation. The Spanish language options for learning about Connect the Coastside and providing feedback included:

- A Spanish language Connect the Coastside **webpage**
- Seven Spanish language Connect the Coastside **factsheets**
- A 20-minute recorded **presentation** in Spanish that provides an overview of Connect the Coastside and was posted to the Spanish language CtC webpage
- Short (2-3 minute) **videos** in both Spanish and English posted to the ALAS and Coastside Hope Facebook pages, describing Connect the Coastside and asking for input
- A **paper survey** in Spanish and English distributed through the Coastside Hope front desk and food distribution, ALAS food distribution, Pillar Ridge, and El Granada Elementary School lunch service
- **Phone and online surveys** conducted in Spanish

These efforts were successful in reaching a number of people, including:

Outreach Method	Views and Responses
20-minute recorded presentation	14 views
ALAS Facebook Spanish video & comments	137 views, 2 comments
Coastside Hope Spanish video & comments	77 views
Coastside Hope English video & comments	92 views
Paper Survey	25 returned, 16 in Spanish and 9 in English
Online Survey	8 responses
Phone Survey	6 phone surveys completed in Spanish

Montara Water and Sanitary District Board Meeting

On April 4, 2020, County staff presented information about Connect the Coastside to the Montara Water and Sewer District Board and received feedback. This feedback is incorporated into the summary of comments and proposed changes, detailed in Appendix 7.

Midcoast Community Council Meetings

The Midcoast Community Council (MCC) is an elected Municipal Advisory Council to the San Mateo County Board of Supervisors, representing Montara, Moss Beach, El Granada, Princeton, and Miramar. The MCC has played an important role in the development of Connect the Coastside, providing advice on how to reach the Midcoast community and providing feedback and guidance on the Plan. Two MCC meetings in the summer of 2020 solicited feedback from community members on the Connect the Coastside:

- **July 8, 2020**: County staff presented on topics that were not covered in the May and June 2020 virtual meetings, including proposed projects for Highway 92 and land use programs.
- **July 29, 2020**: The MCC held a special meeting to conduct a study session on Connect the Coastside for members of the community to provide feedback.

Feedback received during the MCC meetings are incorporated into the summary of comments and proposed changes, detailed in Appendix 7.

MCC Meeting Date	Responses
July 8, 2020	4 MCC members and 5 members of the public provided comments
July 29, 2020	5 MCC members and 11 members of the public provided comments

Summary of Comments & Proposed Changes

The project team received feedback on various topics in the Plan. Below is a summary of major themes we heard and a snapshot of proposed changes to update Connect the Coastside. The complete summary of comments and proposed changes to the Plan is available in Appendix 7.

What We Heard

In general, commenters were supportive of the recommended projects that create safer places to walk, bike, and take transit. These include:

- The Multimodal Parallel Trail
- Marked crossings of Highway 1 with other safety features like median islands and lights
- Safe routes to school
- Bicycle lanes and bicycle parking
- Shelters and benches at bus stops
- More frequent and express buses

Commenters were more divided on the Plan's recommendations to improve driving. There were different opinions about the following:

- Whether intersections should have roundabouts, traffic signals or any control
- Providing additional parking and where it should be located
- The roadway design treatments that are best for the Midcoast

Several commenters focused feedback on specific locations in Moss Beach, including the proposed recommendations for Carlos Street. Others had concerns about the transportation and land use data used to inform the Plan's recommendations and wanted to know more about the impact of projects on traffic congestion and emergency response. Several commenters highlighted inconsistencies between the recommendations in the draft Plan and other planning efforts, like Plan Princeton. Many commenters were concerned about how long it would take to implement projects and wanted to know more about how projects would be funded. A few commenters were interested in the land use policy recommendations and suggested making them mandatory.

Proposed Changes to Connect the Coastside

The project team will work to update the Plan to clarify the recommendations, planning process, and next steps. Below are some of the proposed revisions to the Plan:

- Ensure consistency with ongoing and past planning efforts (like Plan Princeton and the Highway 1 Safety and Mobility Study), including updating maps and project descriptions.
- Add a chapter to describe the history of Connect the Coastside, including past outreach efforts.
- Revise the Plan's goals and include more to address environmental sustainability, accessibility for all ages and abilities, emergency response, and evacuation.
- Update and/or change specific project recommendations including: revise Highway 92 bikeways recommendation to widened shoulders only; remove Highway 92 climbing lanes; change Highway 92 roundabouts to signals; removing the recommendation for the Moss Beach Park and Ride lot; recommend roundabouts on Highway 1 with additional description about necessary studies and approval from Caltrans; removing recommendation for bus stop at Carlos St / 16th St and re-routing bus.
- Expand the implementation chapter to include a potential timeline and phased approach for project implementation, including a description of the community engagement process that will need to accompany certain projects during future project-level implementation.

Next Steps

An estimated timeline of future meetings and actions on the Connect the Coastside Plan is provided below.

Estimated Timeline	Action
September 2020	Present proposed updates at a Midcoast Community Council study session
October 2020	Update plan
November 2020	Present updated plan to Midcoast Community Council
December 2020	Planning Commission workshop on updated plan
January 2020	Final updates the plan and environmental review documents
February 2021	Publish final draft and environmental review documents
February 2021	Midcoast Community Council meeting to consider recommendation on plan
February 2021	Half Moon Bay Planning Commission meeting to consider recommendation on plan
March 2021	Planning Commission meeting to consider recommendation on plan
April 2021	Board of Supervisor meeting to consider plan approval

To Stay Involved and to Learn More:

- Visit the County's [Connect the Coastside web page] to sign up for email updates and for detailed plan and meeting information
- Visit the [Midcoast Community Council webpage] for information on MCC meetings and documents related to CtC
- Share this meeting report with your networks and people who were not able to attend
- For questions on Connect the Coastside, please contact Katie Faulkner at kfaulkner@smcgov.org

Appendices

Appendix 1 - Virtual Community Meeting Summary

Appendix 2 - Response to Connect the Coastside Virtual Meeting Inquiries

Appendix 3 - May 30th Meeting Poll Data & Small Group Discussion Notes

Appendix 4 - June 15th Meeting Poll Data & Small Group Discussion Notes

Appendix 5 - June 25th Meeting Poll Data & Small Group Discussion Notes

Appendix 6 - July 7th Youth Meeting Group Poll Data & Discussion Notes

Appendix 7 - Summary of Comments on Connect the Coastside & Proposed Changes

Appendix 1 – Virtual Community Meetings Summary

Between May and June 2020, the Connect the Coastside (CtC) project team held three virtual community meetings with Coastside community members to share information about the draft Plan and to gather community input to inform the Plan's goals and proposed projects. Objectives for the meetings were:

- Participants learn about Connect the Coastside: what it is, why and how it's being developed; and
- Participants learn with each other and share their feedback with the County about Connect the Coastside.

Meeting Format and Process

Due to the COVID-19 pandemic and San Mateo County shelter-in-place orders, the community meetings were held virtually using the Zoom online videoconferencing platform to enable community members to participate via computer or phone. Meetings were held on weekday evenings and a Saturday morning in response to feedback from community members to maximize attendance.

The meetings were designed collaboratively by a facilitation consultant and County staff from the Office of Sustainability, County Manager's Office, Planning and Building Department, and Supervisor Horsley's office, and recommendations from community members to reach a diverse group of Coastside community members and balance the needs of those who are very familiar with CtC with those who were less familiar with the Plan.

Figure 1 May 30, 2020 Virtual Meeting

Each meeting began with a welcome from County District 3 Supervisor Don Horsley followed by a presentation on Connect the Coastside by County Planner, Katie Faulkner. Attendees participated in polls before and during the presentation that aimed to learn about the participants (where they lived/worked and how familiar they were with the Connect the Coastside plan) and asked about their reactions to the Plan's goals and priorities. There was a brief question and answer session following the presentation to respond to clarifying questions. Community members were then divided into breakout rooms for small group discussions in which participants provided input on CtC and shared their ideas. The small group discussions were facilitated by trained facilitators who were either volunteers from the Peninsula Conflict Resolution Center or County staff. The small group discussions were designed to encourage participants to dialogue with each other and hear their neighbor's perspectives. This approach provided an opportunity for all individuals to share their ideas and created a more welcoming setting for everybody to participate, from people who were new to the plan and people who were more familiar with it. Groups ranged in size from two to five participants. In some groups, there was a Midcoast Community Council member or County staff person who listened to the discussion. Feedback was recorded by notetakers who shared their screen so that participants could view the notes. Each breakout group briefly reported back to the large group on key discussion themes. This was followed by an explanation of next steps for moving forward with the plan.

Some community members and MCC members expressed frustration with the limitations of the virtual meeting platform, and felt that the meeting format limited opportunities for public input. County staff acknowledges the frustration, but believes that the importance of completing the Plan justified using the virtual platform, and that there remain several future opportunities for public comment to shape the Plan.

The three virtual community meetings were conducted in English and were not translated into Spanish, as County staff heard feedback that bilingual virtual meetings with real time translation did not provide the best experience for Spanish speakers because of the limitations of a virtual meeting. Instead County staff focused on providing dedicated Spanish language outreach through phone and paper surveys, as staff understood this was preferable to many mono-lingual Spanish speakers.

Getting the Word Out

County staff, members of the Midcoast Community Council (MCC) and several organizations on the Midcoast helped spread the word to community members about the Connect the Coastside Plan and the community meetings. Efforts were made to reach a broad range of community members from the Midcoast, including people who were familiar with Connect the Coastside and those who were less familiar with the project. The meetings were promoted through the following methods:

- Email invitations sent to people who expressed interest in receiving updates on Connect the Coastside
- Personalized emails from County staff to community connectors (representatives of local schools, agencies, community groups and organizations) asking them to spread the word about the meetings
- Articles in the Half Moon Bay Review and Coastside Buzz
- Posting on the County of San Mateo Nextdoor page
- Postings on the San Mateo County Planning & Building website, the San Mateo County District 3 website, and Midcoast Community Council website
- Flyers posted at post offices, apartments, and shared at Midcoast food distribution events

- Announcements at public meetings including the San Mateo County Planning Commission and the Midcoast Community Council

Meeting Highlights

In total, about 132 community members participated across the three public workshops. Some participated in all three workshops while others attended one or two.

May 30th Workshop: Approximately 40 community members participated in the May 30th workshop. Based on responses to a poll during the meeting, half of the participants lived or worked in Moss Beach, with 20% from El Granada, 12% from Montara and the remainder living or working elsewhere.

The County's presentation provided an overview of Connect the Coastside, the goals of the plan and some of the major proposed projects including the Parallel Trail, the completion of the Coastal Trail, proposed improvements for driving and transit, and land use changes. County staff also presented information on a recent mobility survey that was completed by more than 600 Coastside residents. The survey indicated that reducing traffic and improving safety for pedestrians and bicyclists are the issues most important to respondents, followed by improving bus service and access to bus stops. In small group discussions, participants shared their thoughts about their transportation experience during the COVID-19 shelter-in-place, their reactions to the goals of the plan, and which projects they felt were most important for improving transportation.

June 15th and June 25th Workshops: The second workshop held on June 15th was attended by approximately 60 community members and focused on the Connect the Coastside plan and projects specific to Montara and Moss Beach. Most participants (64%) indicated that they lived and/or worked in Moss Beach, 20% were from Montara, and the remainder were from elsewhere.

The third workshop on June 25th focused on plans and projects for El Granada, Princeton and Miramar. Of the 32 community members in attendance, 50% lived or worked in El Granada, 3% each were from Princeton and Miramar, and 30% were from elsewhere on the Coastside.

At both workshops, participants in small groups discussed which projects they felt were most important and what else could be done to improve transportation in the area.

Spring/Summer 2020 Connect the Coastside Virtual Meetings

Meeting Date	Topic	Approximate # of Attendees
5/30	Overview of Connect the Coastside	40
6/15	Moss Beach, Montara	60
6/30	El Granada, Princeton, Miramar	32

Appendix 2 - Response to Connect the Coastside Virtual Meeting Inquiries

Connect the Coastside is a community-based transportation plan to help improve mobility and safety for residents and visitors of the San Mateo County Midcoast. The San Mateo County Planning and Building Department released a draft of Connect the Coastside in January 2020. In May and June 2020, the Connect the Coastside project team held three virtual public meetings to engage Coastside residents and other stakeholders in learning about the plan and to provide input into plan goals and proposed projects. The meetings included a presentation by County staff, question and answer session, small group discussions, and report-outs with all meeting attendees. About 130 community members attended the three meetings, provided feedback, and asked additional questions about Connect the Coastside.

The purpose of this document is to provide preliminary responses and clarifications to questions asked during the virtual meetings on May 30, June 15 and June 25, 2020. This document includes several of the frequently asked questions (FAQs) already present on the Connect the Coastside website (https://planning.smcgov.org/connect-coastside-faq); these are denoted with an asterisk (*).

TABLE OF CONTENTS

PLAN BACKGROUND AND STUDY AREA

1) How does Connect the Coastside relate to the Coastal Act and Local Coastal Program (LCP)?*

The California Coastal Act and the San Mateo County Local Coastal Program (LCP) require the preparation of Connect the Coastside, guide the content of the plan and will continue to guide the implementation of the plan after adoption.

Adopted in 1976, the California Coastal Act is a state law that directs the planning and management of the California coastal zone, the statewide stretch of coastline along the Pacific Ocean. The Coastal Act establishes a number of foundational goals that aim to protect the coastal environment and ensure maximum public access to the coast. The California Coastal Commission and local governments are responsible for carrying out the Coastal Act and for coastal management. The implementation of Coastal Act policies is accomplished primarily through the preparation of Local Coastal Programs (LCPs), which when completed by cities and counties located in the coastal zone, allow local governments to administer the Coastal Act within their jurisdiction, subject to certain retained powers held by the Coastal Commission.

San Mateo County's Local Coastal Program (LCP) is used to guide development in the coastal zone while protecting coastal resources. Any and all development projects in the Coastal Zone require either a Coastal Development Permit or an exemption from Coastal Development Permit requirements. For a permit to be issued, the development must comply with the policies of the Local Coastal Program (LCP). Before any of the transportation infrastructure proposals in Connect the Coastside are constructed, they must be evaluated and found to be consistent with the policies of the Local Coastal Program and authorized by a Coastal Development permit.

In 2012, the Board of Supervisors adopted significant amendments to San Mateo County's Local Coastal Program regarding the Midcoast. One of these amendments was Policy 2.53, which called for the preparation of a "Comprehensive Transportation Management Plan" to address the cumulative impacts of Midcoast development. Connect the Coastside is designed to fulfill the requirements of Policy 2.53 and inform the County's implementation of several other components of the Local Coastal Program, including the public works and new development components. Some of the standards proposed in Connect the Coastside, such as the Delay Index, need to be incorporated into the Local Coastal Program through an amendment.

2) What are the boundaries of Connect the Coastside compared to the Local Coastal Program (LCP)?

The San Mateo County LCP policies apply within the unincorporated San Mateo County coastal zone, which extends at varying widths from the southern border of Pacifica to the Santa Cruz County line. Connect the Coastside focuses on future development and traffic within the urbanized Midcoast (Miramar, El Granada, Princeton, Moss Beach and Montara). Connect the Coastside's traffic analysis studied an expanded area (which includes Half Moon Bay) outside of the urbanized Midcoast, to understand how traffic impacts the urbanized Midcoast.

Figure 7 (p.53) of the report "Connect the Coastside Buildout Analysis and Traffic Projections Final Report" (November 2014) shows the various jurisdiction and study area boundaries, including the coastal zone boundary and planning boundary. The report is available on the Connect the Coastside Documents & Meeting Materials webpage in the Public Drafts section. The project team will clarify the map in the next draft of the plan.

3) Is Half Moon Bay included in Connect the Coastside? In what ways?

Development and traffic projections for Half Moon Bay are included in the Connect the Coastside traffic analysis, because development and traffic in Half Moon Bay and the Midcoast are interconnected. The traffic analysis was used to create the recommendations to improve transportation in the unincorporated Midcoast, which is under the jurisdiction of the County of San Mateo. However, Connect the Coastside does not include project recommendations for the City of Half Moon Bay, because Half Moon Bay is a separate jurisdiction from the County.

The Connect the Coastside consultant team developed several recommended traffic improvements for Half Moon Bay that were included in past public presentations, but drafts of the Connect the Coastside plan have not included those recommendations. The County has shared these recommendations with the City of Half Moon Bay for consideration during its planning efforts.

The City of Half Moon Bay and the County have been preparing separate but coordinated transportation plans over the last several years. The Planning Director for the City of Half Moon Bay also serves on the Technical Advisory Committee for Connect the Coastside. The planning staffs of the two agencies continue to coordinate on these planning efforts.

4) How is Connect the Coastside related to other County planning efforts, like Plan Princeton?*

Connect the Coastside was shaped by previous planning efforts and will help inform future planning on the Coastside. Connect the Coastside was guided by existing community plans and regulations, including:

- 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 (Phases 1 and 2)

The goals and policies of these documents helped inform the Connect the Coastside public participation process, the contents of the plan, and the evaluation of possible projects.

The list of potential infrastructure improvements recommended in Connect the Coastside was compiled from a variety of sources, including several past and concurrent planning efforts. These planning efforts include Plan Princeton, the Highway 1 Safety and Mobility Study, the Highway 1 Congestion & Safety Improvement Project, the Coastside Access Study, and the SamTrans Coastside Plan. Additionally, some of the proposed infrastructure improvement recommendations were developed during the Connect the Coastside process.

There are several concurrent planning efforts that will also influence transportation on the Midcoast. These projects include Reimagine SamTrans, the San Mateo County Active Transportation Plan, Plan Princeton, County Climate Action Plan, and the Half Moon Bay Bicycle and Pedestrian Master Plan. The Connect the Coastside project team has been working to make sure the various plans are appropriately coordinated and complement each other.

Once Connect the Coastside is adopted by the Board of Supervisors, the recommended projects will need to be incorporated into local, regional, and state transportation plans to secure funding. These plans include:

- San Mateo County Transportation Authority Strategic Plan
- San Mateo County Congestion Management Plan
- San Mateo County Road Fund
- County of San Mateo's Five-Year Capital Improvement Plan (CIP)
- Plan Bay Area
- State Transportation Improvement Program

Following adoption of Connect the Coastside by the Board of Supervisors, a priority action for County staff will be to integrate Connect the Coastside projects in local and state transportation plans.

5) How does Connect the Coastside address the cumulative impact of development?

The purpose of Connect the Coastside is to recommend a suite of transportation projects and programs to address the impact of forecasted future development in an effort to maintain access and mobility to the California coast for visitors and for coastside residents. The cumulative development projections in the "Development Forecast for the San Mateo County Comprehensive Transportation Management Plan" (available on Connect the Coastside's project website) serve as the basis to forecast future development, traffic and conditions of the transportation system, including projected levels of service and delay. In addition to recommending transportation projects to address cumulative development impacts, Connect the Coastside recommends land use policies to reduce future development on the Coastside. The lot merger, transportation impact fee and lot retirement program are described in Section 4.3 (p.64) of the draft Connect the Coastside Plan.

6) How will Connect the Coastside advance County sustainability goals?

As described in the 2013 Community Climate Action Plan entitled San Mateo County Energy Efficiency Climate Action Plan, the transportation sector accounts for over 60% of emissions annually countywide. The County is committed to implement actions that reduce greenhouse gas emissions to meet local and statewide goals and mandates. Projects in the Connect the Coastside are aimed to reduce traffic congestion and encourage a shift from vehicles to walking, bicycling, and transit and help implement goals 6 and 9 of the Climate Action Plan. As individual plan projects are designed in detail, the County will ensure opportunities for green streets (e.g., bioswales, permeable pavement, and others) are considered. The Planning and Building Department is working closely with the Office of Sustainability to update the County's Community Climate Action Plan and to coordinate with the County's Active Transportation Plan, both of which promote alternatives to driving and County policies to support projects in Connect the Coastside.

7) How does Connect the Coastside promote roadway safety?*

The Connect the Coastside plan proposes many infrastructure projects that will make walking, biking, and driving on the Midcoast safer for both residents and visitors. The plan addresses safety by analyzing existing conditions and developing improvement strategies. The proposed projects are evaluated and prioritized using six measures, one of which is safety and circulation. For more information on the six prioritization measures see Chapter 6 Plan Implementation in the public draft of the Connect the Coastside plan. Many of the proposed projects score highly on the safety and circulation measure, such as projects that would add:

- Turn lanes or acceleration lanes
- Stop signs
- Standardized paved shoulders
- Roundabouts
- Bike lanes
- Sidewalks
- Curb extensions
- Crosswalks

PLAN DEVELOPMENT PROCESS

8) How were the projects in Connect the Coastside derived? Can you summarize the process?

The projects in Connect the Coastside originate from a variety of places. Most of the projects come from ideas or concerns heard from the community, some projects are carried over from previous planning efforts, and some projects were added to fix a specific problem found by the traffic analysis. Recommendations were developed through input from the community, county staff, the consultant team, and the technical advisory committee (which includes agency partners).

Generally, recommended projects aim to address transportation safety and roadway performance based on current transportation and land use conditions, and future conditions inclusive of forecasted new development and land uses. The projects borrow heavily from past planning efforts (such as the Highway 1 Safety and Mobility Study) and concurrent planning efforts (such as Plan Princeton and the San Mateo County Unincorporated Area Active Transportation Plan). As such, Connect the Coastside addresses a broad range of Midcoast stakeholder needs and viewpoints.

The project team will clarify the history of Connect the Coastside and project development process in the next draft update.

CLARIFYING INFRASTRUCTURE RECOMMENDATIONS

9) Can Connect the Coastside clarify the purpose of each proposed pedestrian crossing?

The project team will look for opportunities to further clarify the purpose of each proposed pedestrian crossing in the next draft update. In the current draft plan, Section 2.2 describes the conditions that form the basis of recommendations, including pedestrian movements, performance standards and design, and existing conditions. Proposed marked pedestrian crossings are based on pedestrian demand for key destinations and associated traffic volumes. In locations with higher traffic volumes, higher visibility pedestrian facilities are needed to alert drivers to pedestrian crossings and create safer conditions for pedestrians. Figure 2 (p.27) shows the location of key pedestrian hot spots and points of interest, such as beaches, trails, viewpoints, surfing destinations, shopping areas, and trail crossings. Section 4.2.2.4 (p.56) describes proposed pedestrian and bicycle facilities, Figure 6 (p.58) shows proposed pedestrian crossings on a map, and Appendix A, Project Pe-1, p.16 (p.112 of 309) lists recommended striped pedestrian crossing locations. Marked pedestrian crossings will be included at locations recommended for intersection control.

10) Will people continue to cross the freeway at various locations with the proposed pedestrian crossings in place?

The proposed pedestrian crossings intend to connect key destinations and provide a higher quality and safer crossing experience so that people are less likely to cross at different locations on a given roadway stretch. Research has shown that pedestrians typically use the shortest distance to reach their destination; further, people walking will go out of their way more often if a high-quality crossing facility is provided. For example, a marked crossing of Highway 1 will be more likely to draw people to it if it includes additional safety features, such as signage and flashing beacon. The location of a pedestrian crossing also needs to be near destinations it intends to serve.

11) What will be the impact of the recommended pedestrian crossings on traffic flow?

The ultimate design of pedestrian crossings will influence traffic flow. Pedestrian crossings that are designed to halt traffic to allow pedestrians to cross will contribute a modest amount to overall delay. However, the programming of crossing signals can reduce potential impact on traffic flow. If signals are designed to hold pedestrians for a time to keep traffic moving and only allow crossings on fixed intervals (e.g., no more than one crossing every few minutes), then the impact on traffic flow can be minimized. The final design of highway crossings will have to be determined in collaboration with Caltrans.

12) Why does Connect the Coastside recommend at-grade crossings instead of over/underpass crossings for pedestrians?

Although pedestrian overpasses and underpasses have the advantage of complete separation of pedestrians from vehicle traffic, there are several drawbacks:

- They can be visually intrusive and poorly utilized when a more at-grade crossing is possible
- The must meet ADA requirements, often requiring extensive ramping, creating longer crossing distances and steeper slopes for people walking
- They are much more costly to provide ($1 M to $11 M)

- Research has shown that pedestrians may not use them if they can cross the street in a shorter or same amount of time
- Underpasses are often perceived as unsafe, can flood and require ongoing maintenance, such as lighting and cleaning

The Federal Highway Administration recommends that these be implemented as a measure of last resort and that it is usually more appropriate to use traffic-calming measures and/or install a pedestrian-activated signal. For these reasons, Connect the Coastside recommends improved at-grade pedestrian crossings; however, one location in Moss Beach near the northern terminus of Carlos Avenue is a candidate for an overcrossing and this will be evaluated in the next draft of the plan.

13) Will street lighting along Highway 1 be provided in Moss Beach as part of Connect the Coastside?

Additional street lighting is not included in the current draft of Connect the Coastside. Based on the feedback received from community members, the project team will consider this as part of the next draft and discuss feasibility as part of a technical advisory committee meeting. New intersection controls may include lighting based on Caltrans and Federal Highway Administration safety criteria.

14) What influences the types of intersection controls along Highway 1?

Many factors shape when and what type of control (traffic signal and roundabout are two examples) can be placed at the intersection of two roadways. Transportation engineers must consider the needs of all potential users, including drivers, trucks, buses, bicyclists, and pedestrians. Other factors like speeds, crashes, delay, turning movements, and roadway geometry are also important considerations. Highway 1 is under the jurisdiction of Caltrans, the California State Department of Transportation, which means Caltrans will have to approve the final intersection control choice and design. In order to weigh the compatibility of different intersection control types with the specific context, Caltrans requires the completion of an Intersection Control Evaluation (ICE). The County will collaborate closely with Caltrans to complete the ICE process and determine the different tradeoffs between intersection controls where they are needed along Highway 1. The County continues to include roundabouts in the Connect the Coastside draft plan, and will analyze their effectiveness, cost and environmental impacts as part of a Caltrans' required ICE analysis (https://dot.ca.gov/programs/traffic-operations/intersection-evaluation-control).

15) Will roundabouts be effective in areas with varying levels of traffic congestion? Are they feasible considering sewer and water locations? Will they accommodate large vehicles?

Roundabouts are circular intersections designed to eliminate left turns by requiring traffic to exit to the right of the circle. The design of roundabouts results in lower vehicle speeds, generally 15-25 miles per hour, throughout the roundabout. Commonly cited advantages of roundabouts include traffic calming, less maintenance (compared to signalized intersection control), opportunities for landscaping, and reduce certain crash types and their severity. Roundabouts can be single or multiple lanes, depending on traffic volume levels on each approaching roadway to facilitate traffic flow. Roundabout projects may require relocation of existing utilities to allow for safe ongoing maintenance. Roundabouts can be designed to accommodate large trucks (e.g., emergency vehicles and recreational vehicles); this has been done in many locations in California. If roundabouts are recommended through the intersection control evaluation process described above and funding for implementation secured, the County will prepare detailed roundabout designs that address these considerations.

16) Why doesn't Connect the Coastside recommend road widening or new roads?

As described in the Executive Summary of the 2016 Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Draft Report, early recommendations for transportation projects to address level of service (LOS) deficiencies included roadway-capacity projects (e.g., road widenings). However, these projects were not adequately supported by the community and therefore, community members encouraged the provision of a different set of roadway performance metrics that emphasized multi-modal (walking, bicycling, and transit) improvements in addition to those supporting driving. In addition to community concern of road widening or new roads impacts on Midcoast character and emphasis on automobile use, the County is aware of environmental constraints such as endangered species and topography that would make road widening and creating new roads challenging to implement. Lastly, providing increased road capacity can often lead to a challenge called “induced demand,” where new road lanes fill up quickly by people who either would not have made a trip otherwise or would have previously used an alternative mode of travel. Finally, any widened section of Highway 1 could eventually lead to a one-lane bottleneck, either at the Tom Lantos tunnel or eastbound Highway 92.

17) Can Connect the Coatside clarify the purpose of new parking lots, where they will be located, environmental impacts, and if street parking be removed along Highway 1 with the addition of new parking lots?

The project team will work to further clarify proposed parking in the next update of the draft. Section 4.2.4 (p.61) of the draft plan describes recommended recreational and transit parking facilities and Figure 8 (p.62) shows the proposed locations of parking improvements. Additional parking paired with wayfinding and active transportation facilities is recommended to improve circulation. Parking is recommended to allow for park and ride facilities for transit use and to address the performance measure of 85% parking occupancy (i.e., 85% of parking spots filled with 15% open) during peak recreational times. The 2014 San Mateo County Buildout Analysis and Traffic Projections Report (beginning on p.34) and 2015 San Mateo County Coastside Access Study includes detailed information on parking utilization and recommended strategies to address parking demand. Environmental impacts of proposed projects, including parking lots, will be addressed in the environmental review of Connect the Coastside. Individual projects will also go through environmental review prior to implementation. The current draft plan does not recommend removing street parking along Highway 1; the project team will identify if removal of roadside parking in El Granada near Surfer’s beach is necessary to improve traffic flow and pedestrian safety.

18) Why does Connect the Coastside recommend wayfinding?

Wayfinding can help residents and visitors understand how to best reach their destinations. Wayfinding is a recommended strategy from previous studies to minimize circling for parking and directing visitors to designated areas to minimize congestion. Wayfinding can encourage walking and bicycling by showing how much time it would take to use active transportation to reach key points of interest and can promote transit use by directing people to where and how to use the transit system.

19) Why are there bicycle facilities parallel to each other?

To make bicycling accessible for as many people as possible, Connect the Coastside includes different types of bicycle facilities. A multimodal path completely separated from traffic could best serve people walking, jogging, biking, and scooting, and may be better for children, recreational cyclists, or those new to bicycling. Bicycle speeds tend to be slower on shared paths. Experienced cyclists hoping to commute or travel long distances at higher speeds may prefer a facility that is dedicated for bicycling and follows the roadway network. Ideally, when the projects in long-range plans, such as Connect the Coastside, Caltrans' District 4 Bicycle Plan, and the Unincorporated San Mateo County Active Transportation Plan are implemented, there will be a complete, low-stress bicycle network.

20) Will future trail alignments be multiuse (e.g., for bicyclists, pedestrians, dog walkers)?

Proposed trails in the current draft of Connect the Coastside (e.g., Highway 1 Multi-modal Parallel Trail) are envisioned to serve people walking (includes those using scooters, wheelchairs, walking dogs, etc.) and people bicycling. The trails are not intended to serve equestrians.

21) Can you clarify the alignment and status of the Parallel Trail?

The alignment of the Multimodal Parallel Trail is shown in the draft plan Appendix A, project Pe-2, p.17 (p.113 of 309). The project was conceptualized in the Highway 1 Safety and Mobility Improvement Study in Phase 1 and is planned from Montara south to Miramar to connect to the Naomi Patridge Trail in Half Moon Bay. The first funded segment of the trail is from Mirada Road to Coronado Street. More detail on the funded project section is available on the Midcoast Multimodal Trail Project website.

TRAVEL DELAY AND DATA

22) Why does Connect the Coastside recommend using the delay index?

Connect the Coastside recommends using the delay index to understand how well a roadway is performing and to recommend roadway improvements that meet the specific needs and character of the Midcoast community.

Currently, the Midcoast Local Coastal Program (LCP) includes "Level of Service" or LOS to measure roadway performance. To measure how well a segment of roadway is performing, level of service measures the ratio between traffic volume and roadway capacity and assigns letter grades. A letter grade of "A" can be considered free-flow and "F" can be considered as stop and go (see the San Mateo County Traffic Impact Study Requirements for more information). Level of Service measures the impact to people in cars, leaving out the experience for people taking any other mode of travel (i.e., people walking, bicycling, or taking transit). The Midcoast Local Coastal Program sets the LOS performance standard for Highway 1 and Highway 92 at LOS E during commute times and recreation peak periods, and at LOS D during all other times. For example, Highway 1 is not meeting the defined performance standard if level of service is an "F" during commute hours. In order to improve roadway segment LOS, roadway capacity needs to be increased or traffic volumes need to be decreased. This is typically achieved by increasing the number of cars that can go on a road through road widening or by reducing the number of cars on that road by diverting traffic to another road.

A primary goal of Connect the Coastside is to address future roadway deficiencies due to development and meeting the standards as defined by the LCP. As described in the Executive Summary of the 2016 Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Draft Report, early recommendations for Connect the Coastside's transportation projects to address deficiencies as measured by LOS included roadway-capacity projects (e.g., road widenings) along Highway 1. However, these projects were largely unsupported by the community and community members encouraged providing a different set of roadway performance metrics that emphasized multi-modal (walking, bicycling, and transit) performance, in addition to driving performance. The 2016 Evaluation report (referenced above) describes the existing and proposed roadway performance standards beginning on page 5. The Delay Index is one of the proposed roadway performance standards.

Using the Delay Index instead of LOS to measure the performance of roadway segments responds to the community's desire to broaden the types of projects included in Connect the Coastside. The Delay Index is defined as the ratio of peak period travel time on a segment to the free-flow travel time. For example, the delay index would be 2 if a trip took 5 minutes during free-flow travel conditions and 10 minutes during the morning commute period (10 minutes divided by 5 minutes is equal to 2). In contrast to LOS, the delay index focuses on travel times and user experience for people driving.

The delay index allows for different thresholds for performance. If a high-quality multimodal facility is provided parallel to a roadway, then the delay index deficiency threshold is above 3; in other words, a roadway is deficient if it takes longer than three times to travel it by car during peak periods than free-flow conditions. If a roadway segment provides for vehicle-only travel, then the threshold at which it becomes deficient is above 2.

The goal of Connect the Coastside's recommended projects are both to meet community desires and needs under current conditions and address future traffic conditions based on projected new development. Changing the standard by which roadway performance is measured influences the types of projects that can be recommended. For example, if the Multimodal Parallel Trail is built, Highway 1 would no longer be considered deficient under future conditions as measured by the delay index; delay index projections for Highway 1 fall under 3.0. If roadway segment LOS is used as the roadway performance measure, the Multimodal Parallel Trail would no longer be an effective strategy because adding the trail does not change projected LOS. Using the delay index allows Highway 1 to meet roadway performance measures by adding walking and bicycling projects as an alternative to widening the highway. Therefore, Connect the Coastside recommends amending the LCP to use the delay index to measure roadway segment performance instead of roadway segment LOS.

23) Does the County plan to update the data used in Connect the Coastside?

Connect the Coastside began in 2014, and the data used for projecting development and traffic was gathered in 2014. Since that time, the County has tracked development using building permits and found that the forecast, based on 2014 data, is over-predicting development. Building permits are approximately half of what is predicted by the model. In addition, the County gathered traffic data in 2017 and 2019 to inform the design of roundabouts in Moss Beach. Although these are targeted traffic counts, they provide an opportunity to check 2014 projections, particularly for weekend traffic. Recent traffic counts show no appreciable change in traffic since 2014. The project team will look to provide additional context and data to clarify this in the next update of the plan.

24) How does Connect the Coastside reduce the number of drivers on the road?*

Connect the Coastside recommends projects that will increase transportation options and policies that will reduce development. More transportation options and less development on the Midcoast can help to reduce the number of drivers on the road.

The way land is used has a significant impact on travel patterns. Midcoast communities are mostly low density, suburban and residential. Small commercial areas can be found along Highway 1 in each of the Midcoast communities. This type of community layout encourages automobile trips. A range of other factors also encourage driving on the Midcoast, including:

- The configuration of local streets
- Limited access provided by Highway 1 and State Route 92
- Distance from major job centers and local services
- A lack of multi-modal transportation choices

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. Improving safe routes to schools will provide parents and students alternatives to driving to school, such as walking and bicycling.

The lot merger program could reduce the number of homes built in 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.

A transportation impact mitigation fee program would collect fees for new residential and non-residential development. Fees would be collected on a per-housing-unit basis for residential and per-square-foot basis for non-residential development. These fees would help pay for projects included in Connect the Coastside and serve as a potential check on development.

Many of the recommended projects will increase transportation choices for residents and visitors. Bike lanes, sidewalks, trail improvements and safe 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.

25) Which projects will reduce traffic congestion and specifically on the weekends?

The project team will aim to clarify these findings in the next plan update. In section 5.1 of the current draft plan, Table 18 includes proposed projects and their "network impact" or ability to address deficiencies. A more detailed description of potential projects and their ability to address roadway performance standards beginning on p.37 of the 2016 Evaluation of Recommended Alternatives to Address Potential Future Transportation Deficiencies; however, not all of the projects as listed in the 2016 document are in the current draft of Connect the Coastside.

26) Can vehicular speeds be slowed without causing additional travel delay?

As summarized by the Federal Highway Administration's Office of Operations, traffic congestion and its associated travel delay is typically linked to traffic incidents, work zones, weather, fluctuations in normal traffic, special events, traffic control devices, and physical bottlenecks. Interventions to slow speeds must be carefully planned and placed to not cause physical bottlenecks, but rather, create a normal fluctuation and flow of traffic that is predictable at the desired speed.

PROGRAM RECOMMENDATIONS

27) Can you clarify the lot merger and retirement programs and their impacts?

The lot merger and retirement programs are described in Section 4.2.4 (p.63) of the current draft plan and in the 2016 Evaluation of Recommended Alternatives to Address Potential Future Transportation Deficiencies (p.35 and p.52).

The lot merger program would establish a process (first voluntary, then mandatory) for substandard (undeveloped and less than the minimum size requirement) parcels next to each other and under the same ownership to be merged. Voluntary mergers would be eligible for certain development incentives. The lot merger program would reduce the number of undeveloped parcels along the Midcoast; draft plan estimates showed the lot merger program could reduce development potential by about 216 lots.

The lot retirement program would be a mandatory program that would require one-to-one retirement of development rights on existing lots in exchange for new lots as part of a subdivision.

Draft plan estimates show that development potential could be reduced by approximately 148 units. The project team plans to update these assessments in the next Connect the Coastside draft.

28) Can you clarify the definitions of each zone (village, fringe) recommended in Connect the Coastside?

The current draft plan describes the village and fringe zones in section 4.2.1 (p.46). Figure 3 (p.49) shows where village and fringe shoulder treatments are recommended. The recommendations for creating standardized shoulder and edge treatments is originally from the Highway 1 Safety and Mobility Improvement Study Phase 1 and Phase 2. The definitions are:

- Fringe Zone: Transitional segments approaching or leaving coastal communities with increased pedestrian and bicycle activity and side street access/egress with lower vehicle speeds. Design recommended is valley gutter to define roadway edge and consistent lane widths less than 12' 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. Design recommended is curb and gutter to define roadway edge, consistent lane widths less than 12 feet and raised medians where currently striped.

29) Can Connect the Coastside include enforcement a strategy that can be used to address speeding?

The California Highway Patrol and County Sheriff both have representatives on Connect the Coastside's Technical Advisory Committee and are the responsible entities for law enforcement. The project team will share this feedback with them for consideration. It is possible for future draft of Connect the Coastside to include traffic calming measures on certain County-maintained roads that commonly experience speeding by people driving.

30) Why doesn't Connect the Coastside recommend roadway pricing (tolls for tunnel)?

Roadway pricing of highways and the tunnel are out of the scope of the Connect the Coastside plan and are beyond the authority of the County to implement on a state highway. In addition, the Coastal Commission's policies and the County's Local Coastal Program encourage the provision of low-cost visitor access to public beaches and tolls could be an additional burden, especially for disadvantaged residents.

31) What is the impact of short-term rental properties on traffic and does Connect the Coastside take this into account?

The current draft of Connect the Coastside does not discuss the transportation impacts of short-term rental properties (e.g., Airbnb). The project team will research whether data is available on the numbers and locations of short-term rental properties in the Midcoast.

CLARIFYING PROJECT IMPLEMENTATION

32) What is the process to get a project funded, designed, permitted and built?*

Each of the transportation-related projects proposed in Connect the Coastside will require separate funding, design, permitting, environmental review, and construction. Local governments often seek grant funding to prepare project designs. Project designs are necessary before permitting and environmental review can start.

Each project will require a Coastal Development Permit issued by the County of San Mateo, except for a few projects that are outside the Coastal Zone. Although the overall Connect the Coastside plan is evaluated based on the California Environmental Quality Act, individual projects will need specific assessments of environmental impact as part of the Coastal Development Permit process.

Once a project is funded, designed, and permitted, it can be published for bids. This competitive public process allows construction companies to compete for a project by responding to a request for proposals (RFP) issued by the County. Once a contract is awarded, the contractor can begin to build the project.

Projects identified through Connect the Coastside will take place in phases, as funding becomes available. While some projects or parts of projects could be implemented fairly quickly, some high priority projects will likely take a long time to get through all of the steps required. Implementing transportation projects can be challenging, due to the variety of funding sources, environmental concerns and the permitting process.

It is anticipated that many projects identified in this plan will be implemented independently as stand-alone projects. However, some projects or parts of projects will instead be incorporated into other transportation or non-transportation projects on the Midcoast. 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.

33) Who will provide funding for improvements identified in Connect the Coastside?*

The Connect the Coastside plan creates a vision for transportation on the Midcoast and clarifies the Board of Supervisor's priorities for investments in transportation infrastructure. Funding for different Connect the Coastside projects could potentially come from a mix of a number of local, regional, state, or federal programs. Agencies that could potentially fund various recommended improvements through grants and other programs include:

Federal:

- US Department of Transportation (US DOT)
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)

State:

- California Department of Transportation (Caltrans)

- California Transportation Commission (CTC)
- Office of Traffic Safety (OTS)
- California State Parks
- California Strategic Growth Council
- California Natural Resources Agency
- California Air Resources Board
- State Coastal Conservancy

Regional:

- Metropolitan Transportation Commission (MTC)
- Bay Area Air Quality Management District (BAAQMD)
- City/County Association of Governments of San Mateo County (C/CAG)
- The San Mateo County Transit District (SamTrans)
- San Mateo County Transportation Authority (TA)

Local:

- County of San Mateo

For a list of potential grant programs and funds, please see Table 23 (p.74) in the public draft of the Connect the Coastside plan.

Another possible funding source is a "transportation impact mitigation fee." This kind of fee could be charged to new development projects on the Midcoast to help pay for transportation projects needed to address the impacts of growth. For more information on this fee, see section 5.2.2 (p.77) in the public draft of the Connect the Coastside plan.

34) What is the cost, timeline, and priority of each recommended project in Connect the Coastside? When will the projects in Connect the Coastside be implemented? Can project implementation be phased so implementation happens more quickly?

The estimated costs of proposed projects are discussed in Chapter 5 (p.68) of the draft plan. The project team is planning to update and refine the cost estimates in the next plan update.

Connect the Coastside includes a project evaluation system to prioritize projects and project timing (pg. 81-86). Projects are evaluated based on six metrics: project cost, ease of implementation, multimodal connectivity, safety and circulation, shoreline access, and annual cost. Table 28 (p.84) shows the project implementation performance scores, and Table 29 shows the short, medium, and long-term project implementation priorities. The project team plans to update this project prioritization system to incorporate the feedback received at the virtual meetings.

Connect the Coastside is a planning document; because there is no dedicated funding allocated for any specific projects, the timeline for implementation of each project will vary. If Connect the Coastside is adopted by the San Mateo County Board of Supervisors, County staff will work to implement its recommendations and seek funding (as described above) to engage partners in developing detailed designs, project costs, and environmental review. Once the Plan is adopted, it can also serve as a basis for requiring improvements as a part of new development. The project team will address project phasing and opportunities to implement low-cost improvements as a part of routine maintenance in the next draft.

35) How will the County collaborate with other agencies, like SamTrans, on implementation?*

Putting the Connect the Coastside plan into action will require the County to work with a number of other agencies. These agencies may play a wide range of roles, including:

- Owning the land where Connect the Coastside recommends projects
- Overseeing the construction of recommended projects
- Playing a part in permitting improvements
- Providing recommended transportation services
- Providing money to help pay for projects
- Providing support or guidance to ensure plan goals are met

Likely collaborators include Caltrans, SamTrans, the California Coastal Commission, San Mateo County Parks, the California State Parks Department, the City of Half Moon Bay, San Mateo County Transportation Authority, the Metropolitan Transportation Commission, and the City County Association of Governments.

Below is a list of those agencies with an explanation of how they can support the Connect the Coastside implementation.

Caltrans

Caltrans is the State's transportation agency and the manager of Highways 1 and 92. Many of the projects contained in Connect the Coastside rely on active partnerships between the County of San Mateo and Caltrans. Caltrans must approve all modifications within the Highway 1 and Highway 92 right of way. Caltrans will also most likely construct many of the improvements within the right of way envisioned in Connect the Coastside. Caltrans can provide funding for improvements from state and federal funding sources, as well. The County will need Caltrans' assistance for design, planning, funding and constructing these improvements.

SamTrans

Connect the Coastside will rely on a partnership with SamTrans, San Mateo County's transit agency. 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 identify further improvements to Coastside service.

California Coastal Commission (CCC)

The California Coastal Commission (CCC) implements the California Coastal Act and oversees development within the Coastal Zone. The County's Local Coastal Program (LCP), which is certified by the Coastal Commission, includes a policy requiring preparation of the Connect the Coastside plan. The LCP includes policies that address roads and transit, promoting coastal access and protecting coastal resources. These policies will be used in evaluating transportation projects within the Coastal Zone.

San Mateo County Parks and California State Parks Departments

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

City of Half Moon Bay (HMB)

San Mateo County will coordinate with the City of Half Moon Bay on key transportation investments and management strategies. Half Moon Bay is an important partner in alleviating the traffic congestion on Highways 1 and 92 that can hamper coastal access and affect quality of life for residents. Half Moon Bay can collaborate with the county, plan, design and fund improvements, including obtaining grant funding for its own projects.

San Mateo County Transportation Authority (TA)

The San Mateo County Transportation Authority administers the proceeds from Measure A, which is a voter-approved half-cent sales tax that funds many different transportation-related projects and programs. The County can apply to the Transportation Authority for Measure A funds to help pay for many of the recommended improvements in the Connect the Coastside plan.

The Metropolitan Transportation Commission (MTC)

The Metropolitan Transportation Commission (MTC) is the transportation planning, financing and coordinating agency for the nine-county San Francisco Bay Area. MTC collaborates with a network of other public agencies to help support the streets, roads, highways, transit systems and other transportation resources that help millions of people get to where they need to be. MTC and the Association of Bay Area Governments (ABAG) lead the preparation of Plan Bay Area 2050, which includes the regional transportation plan and allocates and prioritizes a variety of transportation funding.

City/County Association of Governments, Congestion Management Agency (C/CAG-CMA)

The City/County Association of Governments (C/CAG), is a Joint Powers Authority whose membership includes San Mateo County and its 20 cities. The City /County Association of Governments works on multiple issues that affect quality of life in general and is the Congestion Management Agency (CMA) for San Mateo County. As the Congestion Management Agency, the City/County Association of Governments prepares a Congestion Management Program every two years. This program identifies future transportation needs and incorporates projects intended to ease and control congestion. The Congestion Management Program also includes priority allocations of federal, state and regional monies for City and County transportation projects. The Congestion Management and Environmental Quality Committee (CMEQ) provides advice and recommendations to the Board of Directors of the City County Association of Governments. The committee provides guidance 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.

36) How does COVID-19 and impacts to the County budget affect Connect the Coastside?

Funding to develop the Connect the Coastside plan was allocated before the COVID-19 crisis. At present, County staff is working to revise and finalize the plan. For implementation of the plan, the County will be largely dependent on state, federal, and local grant funds. At present, these opportunities continue to exist, underscoring the importance of plan completion; however, COVID-19 may impact future transportation funds available for implementation.

37) How will future infrastructure projects be maintained?

Maintenance of improvements on County-maintained rights-of-way will be assumed by the County and incorporated into standard planned maintenance cycles; this is detailed further on the Department of Public Works webpage on road maintenance. Maintenance agreements would need to be established for projects that are outside of County-owned rights-of-way and depend on facility location and type. In some cases, the County may maintain projects that are within Caltrans' right-of-way.

38) How much money is expected from the Transportation Impact Mitigation Fee and over what period of time? What portion of projects recommended will be paid for by new development?

Section 5.2.2 of the current draft plan (p.77) describes the Potential Transportation Impact Mitigation Fee (TIMF). Only a portion of the plan's recommended projects' costs can be allocated to new development because some of the locations included in the study area are already deficient, without the addition of new development. In order for new development to pay fees and/or contribute to projects, there must be a nexus (i.e., specific connection) between the transportation project need and the new development. Based on the current project cost estimates, approximately $15.7 million of the total project costs could be attributable to future development. The fee has been divided across different development types based on the projected growth estimates through 2040 (see Tables 24, 25, and 26). The proposed TIMF would need to undergo a separate nexus study and adoption process; it does not go into effect automatically if the Connect the Coastside plan is adopted. If a TIMF is adopted, all of the forecasted development, in the amount that it is estimated by each land use type, would have to occur in order to generate the projected $15.7 million. Without the adoption of a TIMF, only developments of a certain size would cause transportation impacts where they could be required to fund transportation improvements; these are evaluated on a case by case basis.

OTHER CONSIDERATIONS

39) What kind of environmental review process will be done for Connect the Coastside? How does Connect the Coastside address environmental concerns, like endangered species?

The project team anticipates preparing an Initial Study/Mitigated Negative Declaration (IS/MND) in accordance with the California Environmental Quality Act (CEQA), which can be found in the California Public Resources Code Section 21000 et seq., and the CEQA Guidelines found in California Code of Regulations Title 14, Chapter 3, Section 15000 et seq., as amended. An initial study is a document that describes a project's potential impacts and determines what type of environmental review document should be prepared. A mitigated negative declaration is prepared when a project has significant environmental impacts under CEQA and describes the mitigation measures that will reduce impacts below a level of significance. Pursuant to State Law, the environmental document will be made available to the public for a minimum 30-day review period prior to Board of Supervisors' consideration for plan adoption. Endangered species and other related concerns will be further addressed as part of the environmental review for Connect the Coastside.

40) How does Connect the Coastside address other needs of residents, such as more health care facilities, improved school facilities, water, and sewer?

Connect the Coastside is a transportation and land use plan. It plans for the provision of transportation facilities and services and proposes certain limited land use policies. Provision of other services such as schools, health care, water and sewer are beyond the scope of the plan, and generally are provided by agencies other than the County.

41) How does the County plan for emergency situations and evacuations?*

Mobility on the Coastside is of particular concern in emergency situations and if an evacuation is required. The following is an overview of different County departments and special projects related to emergency response:

- In the event of a disaster, the Office of Emergency Services (OES) coordinates countywide response and protection services. One of the missions of the Office of Emergency Services is to maintain and improve the Countywide Emergency Operations Plan. This plan establishes policies and procedures and assigns responsibilities to keep residents safe during an emergency situation.
- During an emergency or disaster, law enforcement is responsible for evacuation and the movement of the public away from a hazard area. Representatives from law enforcement and public safety agencies were part of the Connect the Coastside Technical Advisory Committee that reviewed and helped refine the plan proposals.
- In the event of an emergency, public safety agencies such as police and fire will be able to provide emergency information directly to people who have registered for the San Mateo County (SMC) Alert service. These alerts may include life safety, fire, weather, accidents involving utilities or roadways or disaster notifications. For example, the SMC Alert service would be used to notify Coastside employees and citizens of available evacuation routes during an emergency.

- In March of 2019, Supervisor Don Horsley allocated $75,000 of discretionary Measure K funds to launch the development of a countywide standardized emergency evacuation zone project. The goals of the project are to reduce the amount of time it takes to notify the public, create a common operating evacuation platform for all jurisdictions, information sharing, and help people to safely & efficiently evacuate in case of an emergency. Since the project began, the CAL FIRE San Mateo Division has worked with every fire and law enforcement agency in San Mateo County to identify over 300 evacuation zones. The project includes a public webpage that will show a map of each evacuation zone and a software application that will help first responders call for evacuations using the standard zones. This will greatly reduce the time from when an evacuation is called to when the public is notified. Additionally, the application integrates with Waze and Google Maps, so as soon as a zone is closed people will be directed accordingly. The project team anticipates launching this evacuation management platform in summer 2020.
- The County of San Mateo will be implementing updates of the Local Hazard Mitigation Plan and the Safety Element of the General Plan in the fall of 2020. The County will be working with emergency service providers such as CalFire, the Office of Emergency Services, and the new Flood and Sea Level Rise Resiliency District. These efforts will further evaluate hazard risks and identify safety measures on the Midcoast.

42) How does Connect the Coastside promote safety in the event of an emergency?*

The projects recommended in Connect the Coastside have been selected to improve safety and mobility for residents, businesses and visitors. In addition to the projects that promote everyday roadway safety, Connect the Coastside also evaluates traffic conditions during times of peak traffic and suggests improvements to ease roadway congestion. In the event of an emergency, keeping traffic moving efficiently will be important for both emergency responders and those leaving during a possible evacuation. Many of the projects in Connect the Coastside will improve the flow of traffic, such as projects for additional turn lanes, intersection controls and passing/climbing lanes.

Connect the Coastside also suggests improvements to bicycle, pedestrian, and transit infrastructure that could aid in the evacuation of visitors and residents in certain emergency situations. For example, in the event of a Tsunami Warning, the County of San Mateo Office of Emergency Services suggests walking to high ground or inland immediately. Improvements to trails and walking paths will make it easier and safer for people to travel by foot.

43) How does Connect the Coastside address the needs of older adults, children, and people with varying abilities?

Goal 3 of the draft Connect the Coastside plan is to "Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic." In meeting this goal and its objectives, the County aims to better meet the needs of older adults, children, and people with varying abilities, who are often less likely able to drive. When specific projects are implemented, the County will aim for universal accessibility and ensure projects meet Americans with Disabilities Act design requirements. The project team will incorporate opportunities for other support projects and programs, like Safe Routes to School, as part of the next draft.

NEXT STEPS TO UPDATE CONNECT THE COASTSIDE

44) How will community feedback be incorporated into Connect the Coastside?

The draft plan incorporates community feedback received prior to January 2020. The project team is reviewing feedback received since then to identify potential changes to the draft plan. This may include revisions to plan language for clarity, adding projects that are missing due to safety concerns, modifying recommended projects, and adding sections to address other concerns such as Safe Routes to School and emergency operations. The project team will add a chapter to the plan to summarize community engagement and feedback received.

45) What is the approval process for Connect the Coastside? What is the timing projected for final adoption of the plan?

The Connect the Coastside project homepage includes a tentative timeline of next steps. Once the final draft plan and associated environmental documents are produced, the project team anticipates the following review and approval process:

- Midcoast Community Council meeting to consider recommendation on plan,
- Half Moon Bay Planning Commission meeting to consider recommendation on plan,
- Planning Commission meeting to consider recommendation on plan, and
- Board of Supervisor meeting to consider plan approval.

The project team anticipates the final review and approval process commencing in December 2020 and ending in February 2021.

VIRTUAL MEETING DESIGN

46) How will comments and questions received during the virtual meetings be addressed and shared?

This document addresses frequently asked questions from the May and June 2020 Connect the Coastside (CTC) virtual meetings. Comments and questions from the virtual meetings will also be shared, summarized and addressed in a forthcoming meeting summary report, which the County anticipates completing by September 2020. The meeting summary report will be posted on the Connect the Coastside website and shared through email with everyone who registered for the virtual meetings. Additionally, materials from the workshops are current available on the Connect the Coastside website under the Documents & Meeting Materials page. Materials include meeting presentations, large group discussion recordings, small group discussion notes, and meeting room chat transcripts (where applicable).

47) Why were participants arranged in small group discussions during the virtual meetings instead of having everyone participate in one room?

The virtual meetings were designed to offer a wide variety of Coastside community members the opportunity to learn about Connect the Coastside and have a conversation with each other about how to shape the future of transportation on the Midcoast. Breakout groups have several benefits:

- They allow participants to have a dialogue with each other
- Breakout groups allow more time for each individual to share their ideas, rather than restricting attendees to 2-3 minutes of comment as is common in public town hall meetings
- The small group discussion format can provide a less intimidating setting for those who are not yet ready to speak in front of a large group or who may feel uncomfortable expressing a different perspective than others
- Breakout groups allow for shorter meetings, which makes it possible for more people to find time to attend

The County heard both positive and negative feedback on the format of the virtual meeting breakout rooms. For those who prefer providing public comments in a large setting, there will be other opportunities to do so at future Midcoast Community Council, Planning Commission and Board of Supervisors meetings.

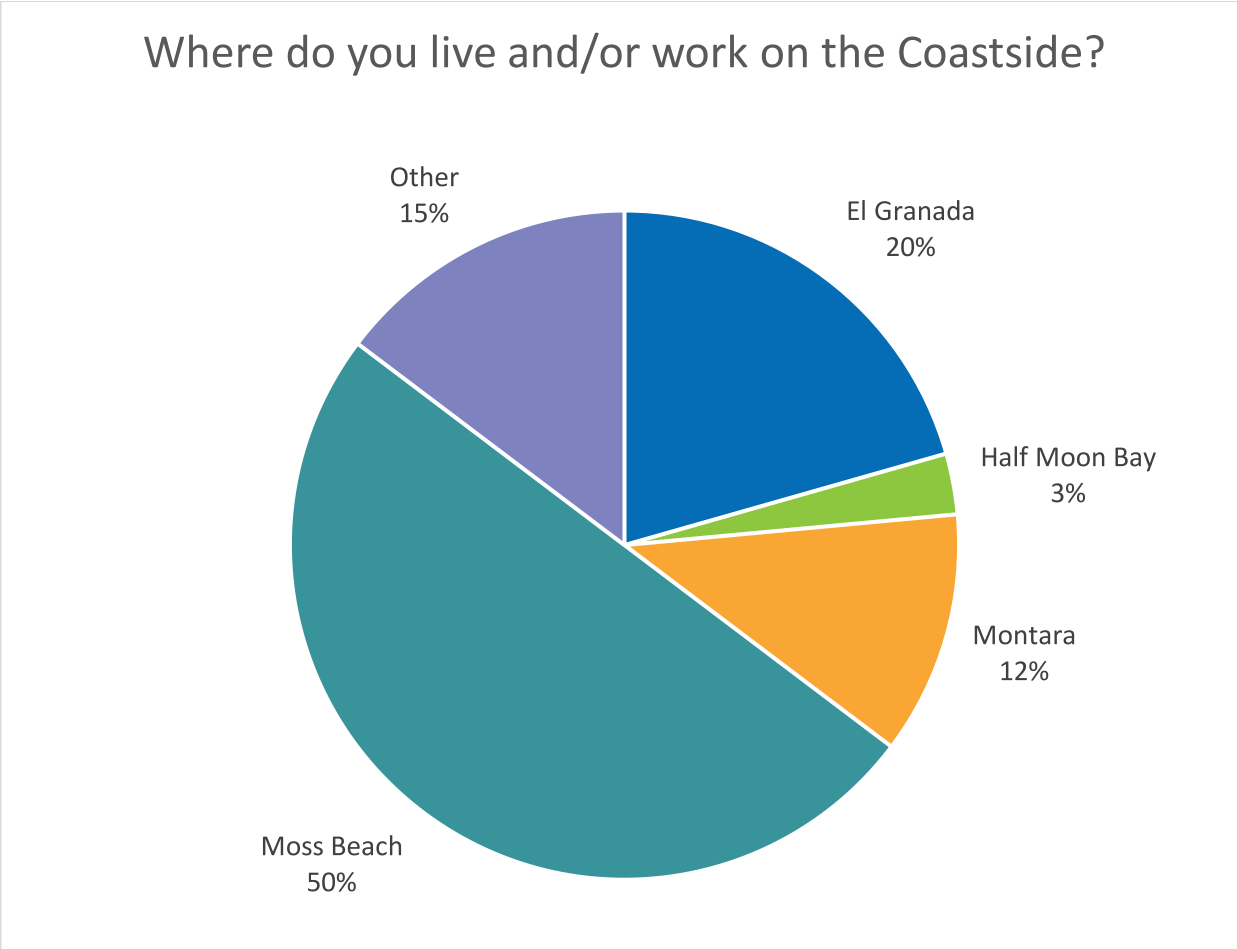
48) Why is the County continuing to work on Connect the Coastside during COVID-19?

Connect the Coastside has been in development since 2014 and its completion continues to be a priority for County staff and elected officials in order to begin implementation of the important transportation safety and congestion relief projects in the plan. The project team had to change its engagement approach to receive feedback on the most recent January 2020 draft of Connect the Coastside from in-person to virtual meetings due to COVID-19. The project team requested feedback about the format of the virtual meetings in a post-meeting evaluation survey. Some community members appreciated the virtual meetings because they would not have been able to attend an in-person meeting. Other community members gave feedback that they would have preferred to engage in person. The project team continues to learn and refine its engagement efforts to reach as broad and large of a stakeholder group as possible. Presentations at forthcoming Midcoast Community Council and Planning Commission meetings will allow for additional engagement opportunities.

Participants at the virtual meetings noted changes in travel patterns and travel demand due to COVID-19-restrictions. The long-term impacts of COVID-19 on the transportation system are unknown; however, notable safety concerns still exist. Opportunities for implementation of transportation safety improvements through grants and new development continue and without an adopted plan, the County cannot take advantage of these opportunities.

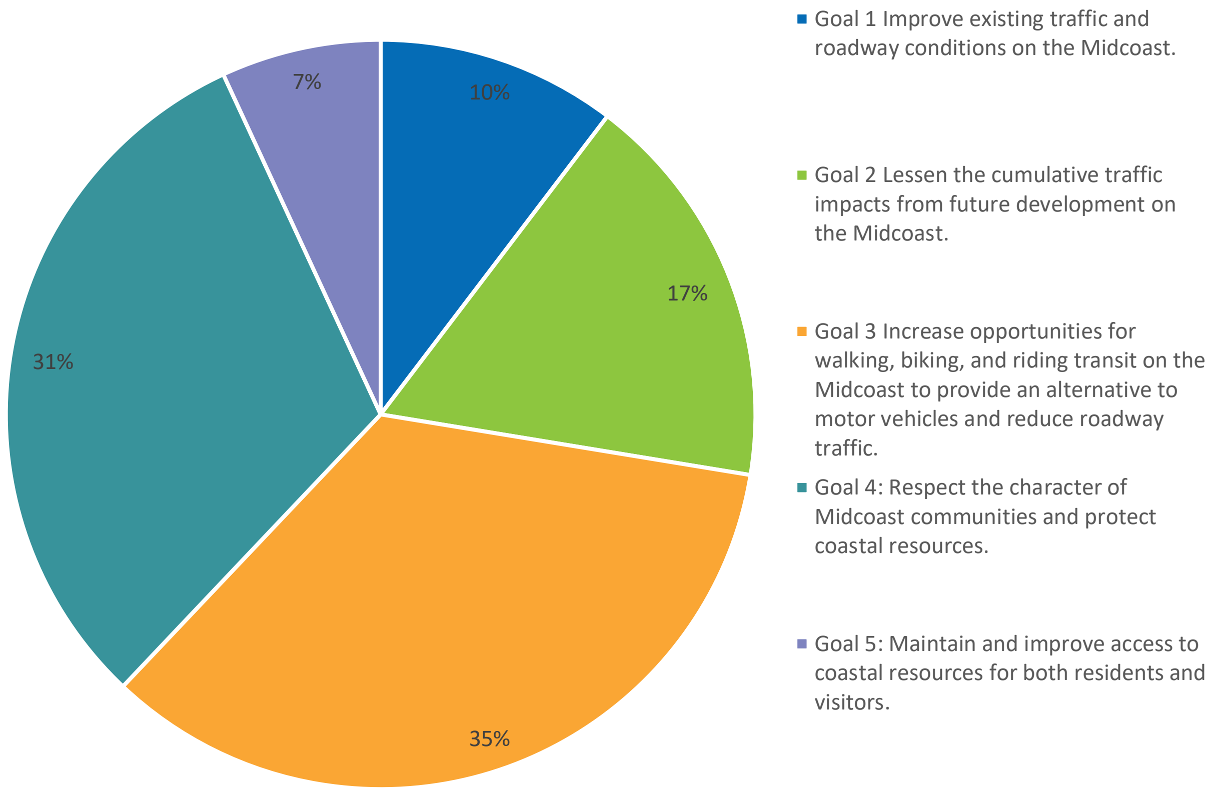
Appendix 3 - May 30th Meeting Poll Data & Small Group Discussion Notes

Poll Data

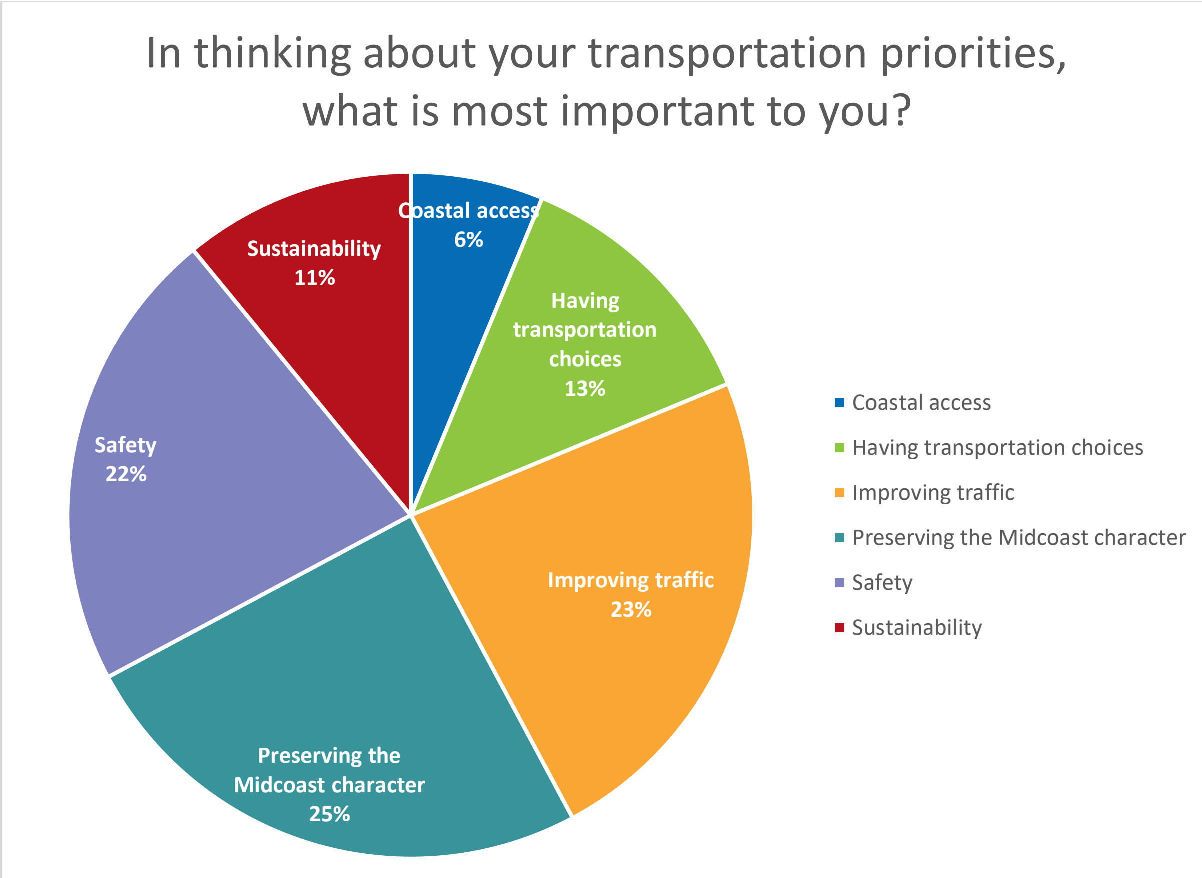


Answers	Number of Votes
El Granada	7
Half Moon Bay	1
Montara	4
Moss Beach	17
Other	5
Total	**34**

Focusing on the goals of the plan, which one is your highest priority?

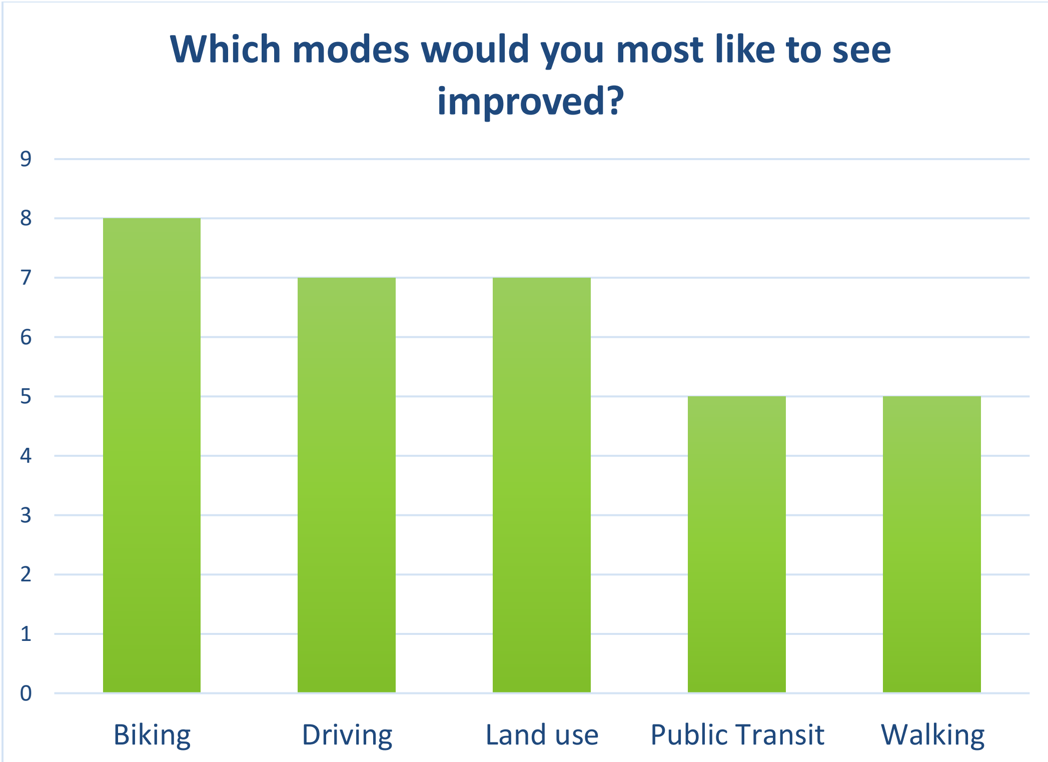


Answers	Votes
Goal 1 Improve existing traffic and roadway conditions on the Midcoast.	3
Goal 2 Lessen the cumulative traffic impacts from future development on the Midcoast.	5
Goal 3 Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic.	10
Goal 4: Respect the character of Midcoast communities and protect coastal resources.	9
Goal 5: Maintain and improve access to coastal resources for both residents and visitors.	2
Grand Total	**29**



Answers*	Votes
Coastal access	4
Having transportation choices	8
Improving traffic	15
Preserving the Midcoast character	16
Safety	14
Sustainability	7
Grand Total	**64**

*Participants could vote for multiple answers



Answers	Votes
Biking	8
Driving	7
Land use	7
Public Transit	5
Walking	5
Grand Total	**32**

Small Group Discussion Notes

What have you learned about your transportation experience during this time of shelter in place?

Group	Notes
A	• Traffic has been great during shelter in place. Traffic has recently gotten worse during the weekends. • Shelter in place (SIP) showed us how bad traffic was previously. • More people may be teleworking at least part time, so daily commute traffic on the coast may get worse. Non-commute traffic may get worse, though.
B	• Gardening, love Zoom, need for cars • Not much travelling, flights are not crowded at all (one person took a flight to the Midwest) • Hardly any traffic, faster and easier to get around • Gridlock: coming back with beach restrictions lifted, Highway 92 and Highway 1, parking lot closures created difficulty for visitors, parking in neighborhoods

	• Facilities challenges during shelter in place • Older adults: people who do not drive are in danger, driving services were not available, leaving people stuck in their homes. • Communication from disability transportation • Trying to get funding for coordinated transportation system for older adults (lyft, Uber type service). Not everybody can use the bus. • Sign up for ready coast and Redi-Wheels: transit to medical appointments, with stops on the way • Challenges: people who do not have smart phone with App
C	• Haven't travelled to the coast, due to COVID restrictions. • Visitor traffic is irrepressible, coast experiencing problems during SIP; governor mistook closing parking for closing beach—parking just pushed into neighborhoods, significant impact. Beaches still in use; trash, waste, other impacts as well. Public's desire to visit coast is not diminished. • Initially there was a big decrease, then approx. 2 weeks later, returning to normal, despite SIP. Spillover parking is a big impact, as well as trash in neighborhoods… In general, a lot more pedestrian traffic on streets; some people using streets because it's easier to maintain social distancing, versus trails where distance can't be maintained. Possibly generating more danger for cars and pedestrians. • During SIP, easier to see daily patterns; garbage is increasingly worse—Cypress & Fitzgerald is fenced off, but many cars parked there, and much bad garbage. Not enough awareness of the impacts of visitors, residents on beaches, neighborhoods. • Overall, what mitigations can be added to projects to address these issues.
D	• Are breakout rooms discussion being recorded? • Why is the discussion limited to these 3 questions? • I was expecting a Zoom meeting where I could hear what everyone had to say vs. a small group discussion • Available parking, lack of bike racks • Traffic worst in the last week, normal problems exacerbated, lower speed limits, litter fines (problem at the highway), traffic enforcement needs to improve • Hopeful that this experience will allow employers to let people work from home. We won't need anywhere near as many transportation improvements if people can work from home more. • The pandemic has solved our transportation problem. The question is whether this is going to last (teleworking). • Question DKS analysis; Resist Density did their own study and pointed out flaws. Think we need to go back to the drawing board before spending $150M. The only think I can see that would merit these changes is if we allow population expansion, and that will be limited by water and sewer. • I have been biking a lot more. I have been moving my car to the street and have to leave it there. • Traffic in the beginning was better, but has been worse over the last 2-3 weeks. I have seen more people biking. I'd like to think about how we look at things differently than the frame that the county has put this in around traffic improvement. I'd like to see

	lower speed limits. I'd also like to address the litter problem along the highways. We should think about litter fines for individuals and locals. Traffic enforcement needs to improve. There is hardly any speed limit enforcement. I saw some enforcement of parking but not a lot.
E	• Traffic much easier in Shelter in Place without rush hour commute for job (San Mateo and SF from/to Coast). Traffic is picking up this week. Still avoiding driving on weekends due to congestion. • Participant lives in South SF, Planning Commissioner. When she tries to drive to coast, Highway 92 is congested. She hasn't tried to drive to Coast during Shelter in Place. Traffic in general seems better now. • Traffic better during Shelter in Place.

F	• Unsafe driving in residential streets in Moss Beach (Cypress Avenue and near Distillery)
	  o Speeding has gotten worse over last two months during SIP
	  o Walkers and with baby having to avoid vehicles, confrontations with speeders
	• Great deal of traffic on Highway 1 on weekends
	  o Crosswalk on highway is ignored by motorists when pedestrians are waiting to cross
	  o Motorists driving through crosswalk when pedestrians are waiting on both sides
	  o Crosswalk is good, needs better implementation
	• Parking challenges near Quarry Park and residential area
	  o Hopes that parking lots are never closed again as it impacts residential neighborhoods
	  o People parking along highway – recommendation to park on west side not the east side
	  o Parking in Harbor District should be open for public outside of crab & salmon season
	• Traffic reductions from SIP has made the area feel like 30 years ago
	  o Mixed feeling about having less people coming to the coast
	• Question: Why was El Granada left off of the map?

G	• Capistrano Road is dangerous to walk along the route to Highway 1 – happy to hear that the road may have some bike lanes and sidewalks • El Granada sidewalk situation is very random – makes it very difficult to walk in the neighborhood • Walking north from El Granada is very difficult due to a lack of infrastructure • Safe routes to school is very important • Feeling very isolated – hard to go outside • From Moss Beach to Half Moon Bay – hard to walk and bike, public transit is not effective • Concerned about the rate of development on the coast • Addressing traffic concerns is important and a concern due to funding and budget impacts at federal/state/local levels • People rely on cars way too much when shelter in place was not in effect

	• People driving recklessly while shelter in place • Can be very hazardous to ride a bike on the coast – almost no bike lanes along the coast • Crossing Highway 1 is very dangerous/unsafe – dependent on the drivers to slow down and allow for pedestrians and bike riders to cross safely • Hope the plan will slow traffic where it is recklessly fast and speed it up where it is very slow
H	• The number of people coming to the coast has increased; parking has been a challenge • Driving to and from work is just right due to less traffic but traffic has increase during weekend • Schools closed has increase bike riding with children more risk of traffic or being hit • Crosswalk improvement needed for safety • Connect communities; traveling safely to connect family and friends; walking or traveling on bikes • Difficult to get to town due to the hills by walking or hiking

What is your reaction to the goals of Connect the Coastside?

1. Improve existing traffic and roadway conditions on the Midcoast.
2. Lessen the cumulative traffic impacts from future development on the Midcoast.
3. Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic.
4. Respect the character of Midcoast communities and protect coastal resources.
5. Maintain and improve access to coastal resources for both residents and visitors.

Group	Notes
A	• There is limited faith in the Connect the Coastside plan due to the constant changes in the plan and the lack of engagement for a sustained period of time. • There is concern over the road impacts of a new development project in the Moss Beach area. The roads aren't able to handle it. The community is concerned that the plan now seems to revolve around this new development. The housing plan is being rushed through. This is with regards to the Cypress Point development. • There is also concern about the traffic around Cypress. Likes the goal about respecting the character of Midcoast communities, but also likes safety goal and favors safety upgrades like roundabouts. • New element of plan is to divert traffic from the development through local city streets to avoid Carlos. Concerns this would conflict with the parallel trail. No sidewalks and two blind curves. • Focus on improving Carlos so cars, local traffic, and the parallel trail can all use it. Especially between Sierra and Etheldore. • Those of us who live on the coastside have to time their weekend traffic. Want to make it safer to turn on and off of the highway. Sometimes have to wait for 20 or 30 cars to go by to enter or leave a neighborhood. Easier access on and off of Highway 1

<table>
<tr><td></td><td>is important. Not a big fan of the bike trail in Half Moon Bay. 12-15 MPH is too fast for the coastal trail, so people ride on the shoulder.
• Housing can be difficult for new residents, so it is good to incorporate housing opportunities into the plan.
• It can be unsafe to cross the highway from parking to the beach. Signals might be helpful in improving pedestrian safety.</td></tr>
<tr><td>B</td><td>Highlighted sections were said to be top priority by the group
1. Improve existing traffic and roadway conditions on the Midcoast.
2. Lessen the cumulative traffic impacts from future development on the Midcoast.*
• Planning Commission looks at individual projects. Must look at overall cumulative traffic impacts
• Examples: harbor village RV park, cypress point
• School buses: no school buses, not a priority for school districts, this is not helpful for middle income families, creates traffic for coastside residents shuttling students
3. Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic.
4. Respect the character of Midcoast communities and protect coastal resources.*
• Part of Plan Princeton: keep harbor charm
• More visitor attractions = more traffic (limit visitor attractions)
• Coastside Village feel vs. Fisherman's wharf feel
5. Maintain and improve access to coastal resources for both residents and visitors.

General Comments:
• Common sense goals
• Compliments to group for being here, we are not rioting, this is a very tough time</td></tr>
<tr><td>C</td><td>• Must address cumulative impacts of transportation, and must have projects/measures to mitigate those impacts. Solutions for traffic impacts from future residential development must be addressed through lot retirement –or merger-- as mitigation for development of new lots, among other policies.)
• Agree with comment regarding the impetus for CtC.
• Not just the midcoast, also half moon bay buildout impacts; must be factored in.
• Understand prioritization of parallel trail, but: there's a lot of indirectness about roundabouts, plus idea that it will be easy to find funding for them—no clear short-term programs/policies to address traffic impacts. Frenchman's Creek stoplight never fully addressed. Traffic concerns often get shelved, it seems—community would love to hear specific phasing to address specific traffic impacts.</td></tr>
<tr><td>D</td><td>• These are good goals, but the devil is in the details, how are these interpreted? What is the County's understanding of these goals?
• The cost dimension is missing, looks like a wish list, no consideration of holistic balance, Overall concept of sustainability and balance
• Timeline? Different for these projects, what has gone to this point? That would be helpful.
• Management plan needs to be comprehensive. It seems that the County's interpretation is different from the Commission.</td></tr>
</table>

E	• Participant has read Plan. It is well thought out. Understands why issues she felt was important at first were not that important in the plan.
	• Such as public transportation (such as for disabled adults) which has low ridership. Construction projects might increase people coming to coast and how will plan adjust for new patterns? How to prioritize projects based on timing of population density from future development.
	• Such as a traffic control in EG in her neighborhood. While she would want traffic control there, there's less traffic there than in other places on Coast as shown in the Plan.
	Goals:
	  o Access to Coastal trails
	  o Safety is very important.
	  o Parking for visitors is important
	• Coast is for everyone. Trails and parking need to be accessible to everyone, including ADA access.
	• Disconnect with CTC. Plan is focused on traffic and safety. Real answer is pedestrian underpasses which provide 100% safety in terms of collision with autos, and 100% traffic flow without stops for pedestrians. Crosswalks timed for slowest walker, which results in wasted wait time for cars.
	• Traffic lights that exist can be better programmed. Road system has sensors (some are timed and some have sensors?) and knows rate of low and traffic breaks. Most efficient to use breaks or low points in traffic to allow cross vehicle traffic to turn. Volunteer sheriffs during Pumpkin Festival is more efficient to allow more thru traffic, this can be used for expected peak traffic periods on Highway 1.

F	• Agreement with goals, would move Goal #4 up as a high priority
	  o Second for this being a high priority
	  o Small-town, semi-rural
	  o Paths > sidewalks, gutters in neighborhoods
	• Future challenges with Big Wave development on traffic
	  o Seems illogical to take traffic up Cypress to 1, opportunity to go through Princeton where there are bus stops, wider streets, less residential areas and children
	• Interest to see walking and biking made easier as reflected in goal #3
	  o Clarifying plan impacts along the highway
	  o Interest to see a plan for getting around the neighborhoods
	• These goals are good, seem long term facing, deep construction projects
	  o Great infrastructure projects for long term
	  o Would like to see short term actions
	    ▪ Enforcement – has made requests of Sheriff and has not seen increased enforcement.
	      o Speed limit is 25 miles per hour
	    ▪ Signage
	    ▪ Speed bumps
	    ▪ Resident unsure of costs, very scared about walking along rode and is open to creative fundraising

G	• Goal #3 – important to capitalize on the opportunity to walk/bike/ride transit – but we are currently missing links to all of these opportunities. Plan needs to be comprehensive to move traffic appropriately (where it is slow – improve the flow; where it is fast – slow it down safely). • *No funding for school busses so we need to think about other alternatives/opportunities for students and faculty/staff to get to schools • Goal #3 – improving opportunities and encouraging people to walk and bike more on the coast and enjoy our surroundings – improve quality of life, the environment and traffic flow (in a safe and quick manner). All modes of transit need safe infrastructure and accessibility. Weekends are particularly challenging since beaches/areas receive visitors from all over the Bay Area and great Northern/Central California region. • Goal #3 – voted for it but all five goals are equally important and linked to each other. Safety and emergency response a concern as well as maintaining community character. Creating a much more effective contiguous trail system along the coast and over Highway 92 possibly for bike trails
H	• Improving the existing traffic rather than future projects; very little done to improve existing traffic over the years; • Appreciate to the county for asking people their opinion to fit the community • Talk about the funding for these investments; how to prioritize assistance from the state in addition to local funding (Measure K, Measure W) • Taking into account evacuation; emergency situation; how to incorporate

Which one or two project ideas are most important to you for improving transportation for the Coastside? *(see also overview fact sheet)*

- Walk: A multimodal trail parallel to Highway 1, safe crosswalks across Highway 1, add sidewalks where missing, complete Coastal Trail
- Bike: Multimodal trail, bike lanes along Highway 1, bikeway along Airport Street, widen the shoulders of Capistrano Road for bike route, install bicycle parking
- Drive: Add turn lanes, acceleration lanes and passing lanes; add stop signs, where missing; add roundabout or signals at intersections with heavy traffic; traffic calming projects; parking improvements; Highway 1 shoulder improvements
- Public Transit: Bus stop improvements, increased weekend and commute SamTrans service, Park and Ride lots
- Land Use Programs: Lot Merger Program, Lot Retirement Program, Transportation Impact Mitigation Fee

<table>
<tr><th>Group</th><th>Notes</th></tr>
<tr><td>A</td><td>
Driving is most important, as we won't be able to get people out of their cars. Safer driving infrastructure will also improve bike/ped safety as people will drive more safely.
Given the current environment, it may not be viable to expect SamTrans to expand weekend service (multiple people agree on this point). People commute all over the Bay Area, so carpools and transit can be difficult. Some residents may not want change, but something needs to be done to improve traffic safety.
Drive options should be the priority- turn lanes, stop signs, roundabout or signals at intersections.
If there was a decent public transit express from Montara to the BART station, it might get use, but the existing service isn't working well. Multiple people like the express bus idea.
</td></tr>
<tr><td>B</td><td>*Walk: multimodal trail parallel to Highway 1, safe crosswalks across Highway 1, add sidewalks where missing, complete Coastal Trail

Age friendly: older adults riding tricycles, also for children
Problems with surfaces: use walking poles, Jean Lauer Trail with gravel
Space:
Nobody asks about ongoing needs
Bluffs were previously improved with crushed granite, potholes have been an issue due to motor vehicles
Many dog walkers
Lack of consideration by fast bicyclists – zooming by with no bell
Dangerous to walk: no sidewalks, roads are narrow
Mountain biking road – ocean blvd closed: people have been injured here

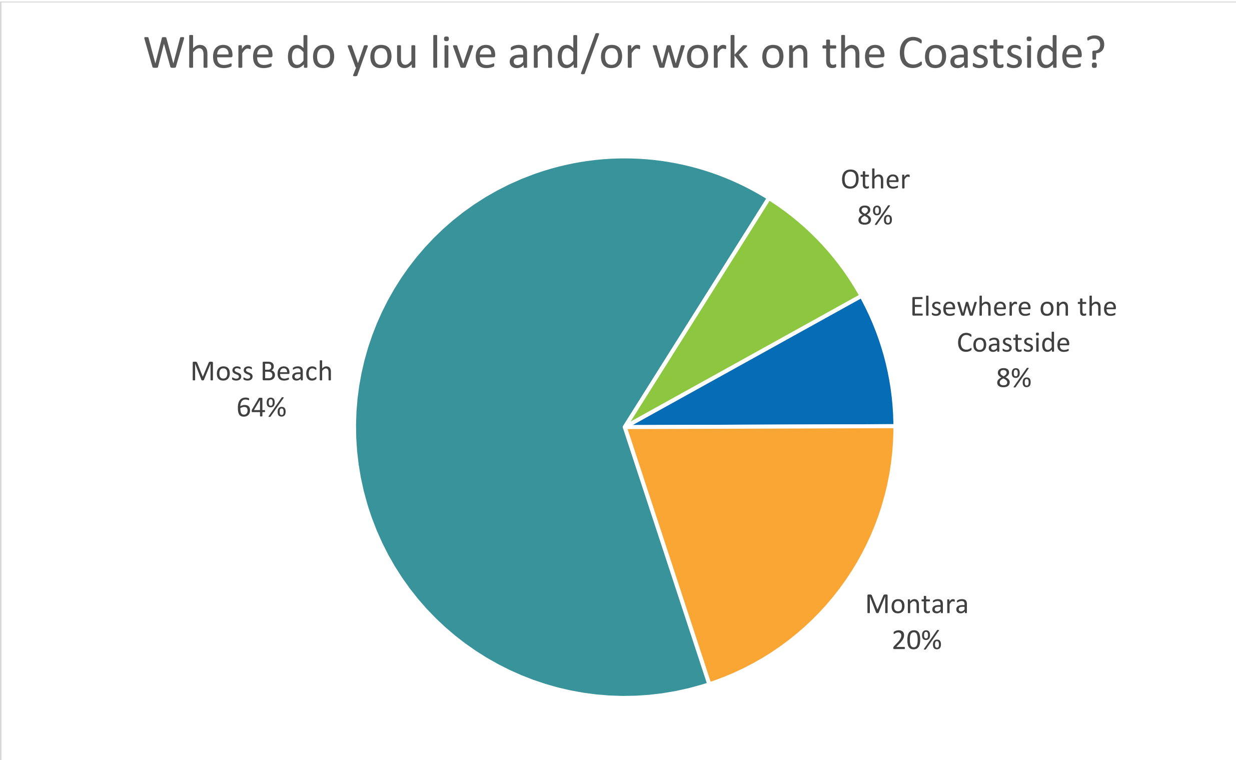
*Bike: Multimodal trail, bike lanes along Highway 1, bikeway along Airport Street, widen the shoulders of Capistrano Road for bike route, install bicycle parking</td></tr>
</table>

	*Drive: Add turn lanes, acceleration lanes and passing lanes; add stop signs, where missing; add roundabout or signals at intersections with heavy traffic; traffic calming projects; parking improvements; Highway 1 shoulder improvements • Coming and going out of Cypress: need an acceleration lane going North out of Cypress (Moss Beach) • South bound – there is a lane • Suicide lane/waiting lane • Plan may include roundabout there *Public Transit: Bus stop improvements, increased weekend and commute SamTrans service, Park and Ride lots *Land Use Programs: Lot Merger Program, Lot Retirement Program, Transportation Impact Mitigation Fee Themes: • COVID Traffic: gridlock, beach visitors parking in neighborhoods • Age Friendly: transit, bike lanes • Condition of walkways and roads • Driving out of Moss Beach (Cypress) – make similar to Montara • 7 streetlights in Montara, 1 in Moss Beach
C	• In moss beach, some mitigation measures are actually a negative impact on the community—projects in very difficult places, very hard to avoid the impact of street closure, intersection work, etc. What's the net gain for the community of these changes? They often seem like losses.
D	*None listed*
E	• Most Important Project Ideas: • Drive and Public Transit • Walk (ped underpass crossings) • Drive (more vehicle lanes on 92) and walking trails
F	• Pedestrian and Bicycle safety projects are most important (seconded) • Lot merger program
G	• All are important – voted for biking since it is particularly lacking. Public transit is not very viable at the moment. Walking a concern, but no one path for biking – patch work of different paths throughout the community. Hard for kids, adults, visitors to bike in a safe environment – a physical barrier is needed along Highway 1 to provide safe infrastructure • Biking extremely important. Crosswalk at Moss Beach installed with no lights (really needed to make it obvious to drivers that someone is using it). • Biking highest priority/land use (lot merger and retirement will be helpful). Bike share program along the mid-coast to Half Moon Bay (parallel the coastal trail). More public transit would be helpful and is needed on the coast.
H	• Land use program component can really help; there is funding to improve public transportation as long as we request it for the coast; walking and biking improvement can help people get out of their cars if planned with public transit

	• Hard to get people out of their car; very few amenities; everything needs driving; not much access to public transportation; not just about public transportation but it is also about access; car at times is the only mode of transportation; not near by • Driving situation improved; city planners need to look at it and provide improvements • Driving; traffic circles; bikes lanes; the mile solution how to help people get to public transit; on demand models (similar to lift) but from public transit; home pick-up

Appendix 4 – June 15th Meeting Poll Data & Small Group Discussion Notes

Poll Data



Answer	Votes
Montara	10
Moss Beach	32
Elsewhere on the Coastside	4
Other	4
Grand Total	**50**

Small Group Discussion Notes

Which of the projects discussed today for Moss Beach and Montara are most important to you? Which projects are most important to encourage you and others to walk, bike or take transit?

GROUP	NOTES
1	• Most important: slowing down traffic. Very unsafe for folks crossing Hwy 1. Roundabouts or some level of traffic control. • Agree that slowing down traffic is important. Speed limit should be lowered to 45. Seen people almost be hit. Like the bike path. More pedestrian and bike options. • Love the idea of bike path and trail. Agree to make it safer to cross. Happy to hear a way for kids to get to school at Farallone.

<table>
<tr><td></td><td>
Intrigued by the idea of roundabouts. Never saw one in the middle of nowhere. Ambitious and expensive. If it works, hooray! I don’t see people riding their bicycles to HMB. Not a priority to get to HMB on bikes.
If you’re thinking of commuting from Moss Beach to HMB, unless you have an electric bike or an avid cyclist, you won’t do it. All for bike lanes, for commuting within the neighborhoods. Not a concept that will reduce traffic. A fantasy. Not going to happen. County parks put large gravel on trail from Pillar Point to Harbor. Difficult for most people. Airport road would be the most likely road from Moss Beach to Harbor.
I would bike, going north to Pacifica. Needs to be other transportation options. Traffic is going to increase.
Individuals originally paid for roads themselves in some areas
Poor plan, hodge podge, people are older
Erroneous, railroad job. We don’t want to have this “thing” in our neighborhood. Other MidPen properties notorious. The forum is “when should we start elk hunting in Moss Beach.”
New resident. Loves it. Excited about some of these items.
Concerns about the process. I don’t feel the county engages in good faith. Some good things. Bike and pedestrian access. Not opposed to roundabouts.
Great idea to talk about CTC. Often, the county doesn’t seem to be communicating aspects of their ideas. Big issue of safety in traffic on the Coast. Wants to hear more about how CTC impacts development.
</td></tr>
<tr><td>2</td><td>
Vehicle improvements are high priority

Questions:

Roundabouts

How will they improve HW1 crossing?
Handicapped, elderly, people on bicycles?

Etheldore & HWY 1 Park n Ride

What is it for? Where is it connecting us?
1 mile away from “downtown” MB
What is the reasoning behind this location?

</td></tr>
<tr><td>3</td><td>
Increase pedestrian trails along coast (high priority)
Improve bike safety along coast
Biking to work not realistic
Majority of residents drive to work
Improve bus stops/lanes
</td></tr>
<tr><td>4</td><td>
Pillar Ridge Resident has not used Airport Road regularly, but with COVID, sticking around the neighborhood and walking along Airport Road. Challenging to avoid speeding vehicles and maneuvering between broken glass with dogs. Fatalities on the road and traffic. With Big Wave, there is room for improvement for ped/bike access. No sidewalk from Cypress down to Yacht Club; little access. Concern for ped/bike.
High School/Middle School students travel from Montara to HMB. Parallel Trail is very important. More students would walk/bike if that option was available. Safe Routes to School to Farallone ES is important. Residents walk/bike to post office to get mail since mail is not delivered to homes. Need a safe route from Post Office to Farallone.
</td></tr>
</table>

	• Commute along Coastal Trail living in Moss Beach and has to cross Highway 1; challenging. Ped Xing at Country Market is inadequate; need improved crossing. Current crosswalk in Moss Beach is inadequate.
	• Parallel Trail without crossings would not be effective; need both (Hwy 1 xings).
	• What CTC suggests now for crossings is adequate.
	• Airport Road – Big Wave project mentioned options but wasn't clear what would be the final plan for the road (e.g., converting Airport Road to one-way). Pillar Ridge is next door to Big Wave. Heavily used road by teenagers/children; many children live at Pillar Ridge, many cyclists.
	    o Airport Road not on overview fact sheets; may be in the plan or another plan. Airport Road is designated as a bike route; heavily parked.
	    o Felt hazardous to walk to El Granada ES on Airport.
	    o Teens using bicycles for mobility; job at the yacht club. Primary access point.
	    o Speed limit is fairly low, but people are still speeding.
	    o Speeding has always been an issue; its easy to speed on it and treated as a "back road"
	    o Abandoned vehicles, trash.
	    o Residents have reported abandoned vehicles to CHP and no action is taken. Side of road is obstructed with trash/vehicles, so forced to walk in the street.
	• Important Highway 1 crossings – 2nd Street in Montara (where restaurant/beach is), 16th Street (with new bus stop; a lot of people use this location to cross when cycling), Virginia Ave (?) existing crossing is an important location but not safe as designed for peds or drivers

5	• Roundabout at Cypress and Hwy1- First to be done when there is funding. Looking forward to see it start. It has been a long wait. Already LOS F, worse on sunny days. It is too long of a wait to turn north onto NB Hwy 1, need either roundabout or acceleration lane. • No street lighting on Hwy 1, Montara has 6-7 and there is only one on California, need more highway street lighting for increased safety of pedestrians and vehicles. • No one on this part of the coast likes traffic signals. They may be OK in Half Moon Bay, but not here, Moss Beach is not a town, it is a small village that is not suited for a signal. • Insinuation of Mid Pen into the mix, they have their own agenda and not giving us opportunity to give our input. Serious issues with Cypress Point, moving too fast and not based on facts, public records and community input. Mr. Horsley understands the density and land use issues related to this. There is no reliable transportation. Impossible to get from point A to point B on bus. And daily activities cannot be done from Friday to Monday. One Rd in one Rd out of Mid Pen, no alternate routes. Wildfire risk is large for the coast. Need more transparency from Mid Pen. Connect the coast is transparent. Need more effort to address the evacuation plan. Need to address people going north to Pacifica. Caltrans needs to trim.
6	• Most important – improvements to pedestrian safety including crosswalks on Hwy 1, parallel trail, safety improvements on Carlos St. • How do you get to conclusion that speed bumps and other proposed measures on Carlos St. are appropriate?

<table>
<tr><td></td><td>

Cypress Ave between Hwy 1 and Fitzgerald Marine Reserve is very narrow and unsafe, only 1 speed limit sign posted. See Safe Streets group online petition w/165 + signatures – change.org/safestreetscoastside
Most important is all projects that can be completed the soonest – 1) safe crossing (above and below grade crossing discussion needed); 2) completion of parallel trail; 3) roundabouts, at least 1 test case needed now. Studies have been long and drawn out and people want to see improvements now.
Multimodal trail concern – endangered species along Carlos Street – what about migration pattern of frogs? How will trail construction and other improvements be impacted by this? Joe LaClair’s MCC presentation identified there are frogs so how do we address them?
Traffic is going to increase along side streets around Cypress Point – how will endangered species be impacted from all of this?
How will anyone access bus stops with no road or sidewalk; what’s the time period for completion?
Primary concern is what’s the cost and what’s the motivation for CTC?
CTC from January is relying on outdated data; may not be traffic problem in Moss Beach post COVID.
Bike route proposed is not relevant.
Traffic analysis needs to be redone post COVD and used as baseline.
Additional mitigations are not responsibility of owners; should be responsibility of incremental development projects.
Cost to residents needs to be taken to public vote.

</td></tr>
<tr><td>7</td><td>

Parallel Trail is important +1

Provides for alternative method for mobility on the Coast
Trail improvements have been segmented over the past 20 years, unsure of total plan. If parallel trail means connecting segmented work then this is a great project

Flurry of activity to Marine Reserve and to Airport, accessible area in Moss Beach and is unsure how this fits into bigger plan

Improving Main Street in Montara to be bike friendly

Not a new idea, has been on drawing board for 10 years
This question does not resonate as it has been asked and mapped out before, curious why this is continuing to come up.

Pedestrian Underpass is necessary

Need to have pedestrians cross the road without impacting traffic and provide safety for all (pedestrians and cars)
Resident shares that 1,000 petitions from community members and visitors requesting underpass at Gray Whale Cove site (rather than having red flashing light crosswalk)

Traffic issues in Moss Beach and Montara don’t have much to do with residents

Incremental changes like changing direction of the road, added parking, new sidewalks are “dressing things up” and are fine, but don’t improve quality of life on the coast
Empty outside of peak times (weekends, good weather days, etc.) Better to think about what residents want.

Get Montara properly connected to Moss Beach for Biking

</td></tr>
</table>

<table>
<tr>
<td></td>
<td>

Part of the Parallel Trail project – this is the most necessary connector for cyclists
Nothing in the plan motivates residents to take transit or walk
Alternate question – Resident feels like these questions do not accurately capture feedback. Preference for: What would coastsiders like? Not how would people respond to given plan?
Most of what is given in the plan is not what resonates with resident

</td>
</tr>
<tr>
<td>8</td>
<td>

Interest in biking, be able to ride to HMB and the other way to get to tunnel and parking lot up there. Have to get creative to do it safely now. If you don’t have a bike that can go on trail, you are near the highway. Really hopeful trails get built in the shorter term (not 10-20 years).
How slow traffic has gotten in general. It does not seem like the increase in traffic is because people on the coast are driving more. Seems like traffic is increasing from inland visitors. Seconding of traffic increase initiated by people coming from other places. Only see increase in traffic with increase with developments – Big Wave, Cypress, Devil’s Slide Tunnel
We need to put limits on large scale developments
Intersections near Fitzgerald. People weaving in and out of neighborhood to find parking. Solution: find one way roads throughout this neighborhood. Appreciated awareness about safety concerns around distillery. Safety for cyclists. Seriously looking into one way traffic in these neighborhoods.
Carlos
Wienke
Carbillo Highway
Huge fan of roundabouts
Coming out of Dardanelle trail, crossing over Lake, going up California, which is the CA trail, going up Wienke
We should have one way traffic here to protect cyclists and people on trail
Sidestreets are a big issue. Different on east side of highway.
Carlos St is very narrow, windy and the most scenic street on the east side of the highway
Proposal for Cypress Point does not address where traffic is going to go
Analyze traffic on the side streets. How can you base recommendations without doing an analysis?
Carlos is on the Post Office box. Very common to drive to the post office (especially nowadays). VMT will be created more which is contrary to what this plan is trying to do.
Go one way south, get on the roundabout, not sure where to come back home from post office
Roundabouts need to be considered if appropriate for coastal residents who frequent the post office
Roundabouts – sewer and water pipes run under the highway. There is no room for a roundabout. Roundabouts need to be considered
Are roundabouts a pipe dream? Not enough information given to make this a reality.

</td>
</tr>
</table>

	• Big picture: This plan has had a delay because this plan was supposed to look at roundabout alternatives. We are here 4 years later with no answers on the roundabouts and discovering new problems. o Confidence is important

9	• General support for roundabouts, although there are some concerns (see below)
	• General support for parallel trail/ Eastern trail
	  o Long term: we have to have a parallel trail on the East side of Hwy1 to connect all of the communities on the Coastside
	  o Good for neighborhoods and students going to school
	• Concern with parallel trail access
	• Eastern trail / parallel trail (supportive)
	  o Addresses pedestrians and cyclists
	• Roundabouts
	  o Address traffic issues

10	• Highway 1 crossing at CA/Wienke Way (crazy intersection) in Moss Beach
	  o Crossing at night is very difficult and dangerous. Makes stores inaccessible by walking (need to walk) from the other side of the Highway
	  o Need button with flashing lights (one commenter supports; one does not)
	  o Closure of Wienke Way is ok. Only 8 houses on this street
	• Need study of neighborhood streets; new crosswalks may not be needed; need more stop signs (example: at Stetson/Sierra)
	• According to one commenter, walking on the east side of Hwy 1 in Moss Beach from eastern neighborhoods is hilly, steep, lacking in sidewalks (but some don't need sidewalks). Services are too far for most residents. Most people will drive.
	• Highway 1 crossing at 2nd street at La Costanera in Montara
	• Parallel Trail (safe and flat) to get to Moss Beach, as walking path alternative to driving on Sunshine Valley Road (can only bike in westward direction) which is curvy and steep. With Parallel trail, more reason to walk to Carlos. Geography between MB and Montara makes it hard to traverse through these areas without going to Hwy 1. 16th street is not a through street.
	• Please change plan to add Safe Route to Farralone View School

11	• Carlos one-way and interesting proposition. Accessing Hwy 1 @ Cypress challenging. Supports roundabouts. Pedestrian crosswalks along the Highway. • Continuation of the Coastal Trail, including up to Devils Slide southern access point. Between Gray Whale Cove and Tunnel…supports inclusion of Green Valley Trail project in CTC. Could help reduce congestion. What is the scope of the LCP v. CTC? • Is Half Moon Bay included? • There are four versions of the plan out there. It's confusing • Supports bike lanes. Transit is impractical for shopping. Concerned about three traffic lights or roundabouts in Moss Beach. Traffic lights slow traffic, will result in grid lock and use of parallel routes, e.g., Sunshine Valley Rd. • Evacuation Routes are needed. fire hazard risk increasing, along with traffic, makes evacuation challenging. • Traffic congestion mitigation is needed. Supports roundabouts but unsure about how well they'll work with traffic Need better access to the County of San Mateo • Solutions need to be based on Half Moon Bay development and traffic.

	• Bike lanes and routes important…both for shopping and recreational rides. Facilities for all kinds of cyclists.
12	• Bike paths most important – great plan so far – works in HMB – school bike path would be used • Lives in Moss Beach – works from home right now – did commute to Mt. View – does work from home • Moss Beach – works in SF • Crossing of Hwy 1 is most important – lights would be helpful – no one respects the crossing signs – lights in HMB works – could work here too – trails too narrow right now – could be expanded to allow bikes side by side • Still taking it in – projects are vague – a bit confused on what is being presented – what could actually be funded? Carlos – parking and biking – unsure? Concern about Hwy 1 slowing traffic flow – MB/Mon is a free area now – would this be a gridlocked section of the highway now too? Strange proposals at other meetings – trying to sort it out. Current crosswalk is dangerous – who put it in? Too many crosswalks on Hwy 1 maybe wouldn't be a functional highway. Its o.k. to get off Calif. Onto Hwy 1 – light could back things up – reluctant to say that one thing would be best solution. One main road – anything changed would have an impact. Would like to see pedestrian access improved from Montara to MB – along 16^{th} - - Montara Creek habitat – sewer main are constraints – and big question is who is paying for it? Roundabouts – driving on E. Coast/Europe but have to be wide enough to allow for free flowing traffic – 16th isn't wide enough – at Calif with 5 streets coming in would be a problem – Burlingame – ECR road not highway – keep speed – don't slow to 25 mph • First time in meeting and looking at all this info – most important is safe walking and biking for families and kids – walking bridge over highway would be best, but that's not included. Makes most sense – traffic would increase with roundabouts – who is going to pay? • Walk/Bike/Transit Ideas: • Pedestrian bridge, anything else that would reduce use of cars – transit would take 3 hours to Mt. View!! Express bus up to the City would be a good idea. So much change not – concern about taking public transit with COVID – hard to imagine commuting other than by car – transit use may be wishful thinking. School traffic, local traffic? Bikes and bike routes would help and keep people healthy too. • Farralone View – busses were for Moonridge kids – local kids didn't use the bus – safe paths is great idea from MB to Farallon. Transit doesn't serve commuters and not safe now – won't get on bus with kids!
13	• Prioritize evacuation routes • Cypress intersection • Walking to Pillar point bluffs, along Cypress and Airport – no sidewalks, fast traffic • Most issues cross-way traffic, rather than along Hwy 1, concern that new measures would slow traffic further. • Roundabouts - not sure if right location because of traffic patterns. Some in favor, majority opposed. • Max speed in Moss Beach 45 mph • Current traffic conditions are horrendous - concern about traffic getting worse as more people move to the area.

	• Concern about meeting format vs in-person meetings
14	• Closing Carlos street is unworkable; proposal isn't acceptable on this street. • At last meeting Cypress Point project (reason for a lot of these projects); Cypress Point not being brought up at this meeting—why not? Cypress Point will create traffic impacts, create potential dangers, not being addressed specifically in this meeting. Should address impacts of Cypress Point in Moss Beach and interrelation to Connect the Coastside. Connect the Coastside should address the entire length of Carlos, not just between California and Etheldore; walkers, bikers, etc use that route primarily. • The expected increase and impact of Cypress Point on surrounding streets and on non-car users on those routes should be directly addressed by CTC. Section that CTC does talk about are disconnected from Cypress Point. • The traffic going down Carlos seems to be in the opposite direction from the proposed Southbound 1-way street. CTC changes won't adequately address impacts foreseen as a result of Cypress Point. • Even absent Cypress Point, Carlos should be better-addressed in CTC; there are existing issues, connectivity to 16th Street, location of bus stops, other issues that are not included. The portion of Carlos addressed in the plan isn't the portion that should be the focus. • None of the improvements listed in the plan to-date seems to have the potential to be beneficial on any of the aspects—bike, walking, dog-walking, etc—that need improvement. • End of Carlos @ 16th to be closed and converted to recreation? (Unclear) Should remain open. • There are a lot of developments and various improvements happening, and it seems that there's a lack of coordination across projects to address both potential impacts and potential projects to address them. Projects are being addressed too quickly, and too individually, without assessment of cumulative impacts. People don't feel like all of the impacts are being assessed together, and will create significant issues. More integration is needed. • Concerned with traffic on Hwy 1; traffic studies done in 2014? Too early, doesn't reflect current impacts of traffic, volumes of traffic. Particularly during COVID, more use of these streets, high volume, high impact. Traffic studies don't capture covid or pre-covid traffic volumes accurately. Should be a current traffic study. • Idea of traffic lights is inferior to roundabouts; Gray Whale Cove traffic light is particularly bad, will impact quality of life on a daily basis. Roundabouts are better. • Crossing at Montara Beach is dangerous, particularly with high traffic volumes; maybe a yield sign or something short of a traffic light, but improvements are needed. Cars are high speed, volumes are high. • "Temporary" lights never actually come out; short-term lights are a bad idea, because they become permanent—roundabouts are a better solution. • Moss Beach and Montara portions of CTC, and Cypress Point, are connected. Because the Cypress Point improvements alone can't meet traffic volume without CTC improvements.
15	• Most people work over the hill, need more projects to help that traffic.

	• Safety for getting on Hwy 1 and crossing Hwy 1, but adding more crosswalks could be problematic. • Parallel Trail was in Measure A 16 years ago, but hasn't been built yet. • Is the Parallel Trail being routed up the hill from Carlos Street? • There are technical problems with putting roundabout at California & 16th Street. • Roundabouts lead to congestion. In traffic roundabouts are filled with cars, and people can't get into the roundabout. • Want cars to be able to get on to highway 1 and pedestrians to cross highway 1. • Too many lights will bring traffic to a halt. Suggest starting with one light. Suggest either 16th or Cypress Street. • Slow traffic down in Moss Beach with a 40 mph speed limit on Highway, and leave the speed limit in Montara at 40 mph. • Participant likes roundabouts, say they work in Europe. Traffic lights will slow traffic down and create a choke point. • Most people would like to use public transit to commute to San Francisco but need a direct bus to a BART station (Daily City or Colma). The bus also needs to run frequently enough to work. • Need decent bus service from Montara to Half Moon Bay, the bus needs to be frequent enough.

What else could the County do to improve transportation options in Moss Beach and Montara? What is missing from the plan for Moss Beach and Montara?

GROUP	NOTES
1	• What is missing from the plan is that lowering the speed limit is effective (45). It would make it a lot safer. Never been added back into the plan. Concern about development tied to this. Elephant in the room that needs to be addressed. Some options seem to encourage more traffic. Feels like the county is planning to urbanize the coast, like Santa Cruz. I hope that doesn't happen. Park and Ride in Moss Beach? Did not see it in the plan. Garbage along the road and trails. • Reducing speed limit is important. Not changing randomly along the corridor. If the county wants to reduce traffic , it needs a transportation plan that works. Bus requires waiting a long time and is not efficient. Real public transportation within the corridor. • Much better public transportation is needed. Get dropped off at beaches. As it is no one is going to do that. • Some people wanted to have a safe way to get across Hwy 1 at Moss Beach. Every year somebody gets killed there. Wanted something done to get across the Hwy. The money spent because they want a new development seems to be endless. Seems kind of "convenient" now that crossings are being discussed (because of development, money wasn't there before.) • Near Fitzgerald, someone died crossing the Hwy. Personal experience hit by a drunk driver. I imagine a lot of folks have similar experiences. Speed limit is way too high.
2	• Are these options appropriate for good/ bad weather? • Public transit northbound o Improve to visit Pacifica/ beaches • Tsunami/ emergency planning

	• Hospitals far away-- how will this improve accessibility?
	• Airport Blvd will be expensive to control
	  o Pillar point bluffs for bike transit
	  o Need to go slowly, no cars
	  o Improvements to “wayfinding” to enable usage
	• Walking along the Bluffs
	  o Cell phone dead zone
	  o Emergency call boxes/ signal boxes?
	• Cypress connection to HW1 @ Lighthouse (across the street)
	  o What is the plan? Roundabouts, stop light, etc?
	  o Carlos, next to Sierra St
	  o Concern for crossing safety, accessibility to Cypress Point
	  o Desire: “they should compliment each other”
	    ▪ Regarding Cypress Point project and HW1 improvements

3	• Heavily focused around proposed development projects • Provide plans to alleviate traffic • Evacuation/safety plan (high priority)
4	• Airport Road and slowing traffic there • Sidewalks on Airport Road – some sort of pedestrian trail that feels safe from vehicles o Existing makeshift path that does not feel safe as is; close to vehicles • Stop signs (route to Farallone ES) – on 5th St option – there are (2+) locations that do not have stop signs at intersection. Need to resolve this if it’s a path for students. Will need to check specific locations (2/3 East, Le Conte, and Farallone) • Having bicycle lane on Highway 1 could add to traffic. • Different kinds of cyclists – one who might ride on Highway 1 v. student/leisure rider who would not • As a driver, question bicycling on Highway 1 • Cycling route – south on Etheldore and come out on north end of Airport and only way to get to coastal trail is to cross the road and go to light at Princeton – or road near Mezzeluna restaurant (morning commute) • In evenings, can’t cross Highway because of traffic. On Highway 1 from Princeton to Etheldore for about 2 miles. Feels safer on Highway 1 because of wide shoulders that are marked. Not sure if bike lane would create a different impact because shoulders are already well marked.
5	• County idea of paving sidewalks on Sierra Street with bike sharrows from Joe LaClair’s presentation to the MCC. This is a non-County maintained road and it’s all dust and potholes at the moment. To improve options for kids who walk to Farallone View on Hwy 1 it is important to put sidewalk for them so they are not walking on dirt and it is not safe.
6	• Short term solutions need to be developed at lower cost that provide most beneficial impacts. • What happened to the land management plan/policies for these areas – if communities were more self-sustaining through land management policy/practices, it could lower traffic, such as lot retiring, lot consolidation, etc. Need to

	prioritize developing land management plan - needed in concert with CTC, not after, including cost assessment for land management measures. • Evacuation routes need to be assessed for roadway closures, including fire hazard, and what the rescue routes for emergency services will be and making sure rescue routes are considered and available.

7	• Reconstructing question: What do residents want and think is best?
	  o Safe pathways not necessarily sidewalks
	    □ Sidewalks may be needed in some areas, but there should be a minimum to respect the character of the coastside
	    □ Do not urbanize the coastside
	    □ No digital feedback signs to maintain character of the community
	      1. Pedestrian underpasses would work in place of these signs
	      2. Concerned about light pollution from road lights and digital feedback signs. Also concerned about being blinded by light while driving at night.
	• Missing resident perspective – Seems like plan prioritizes developers over current residents
	  o Lack of thought in this planning process
	  o Large development gets approved before improvements for residents and visitors are planned
	  o Bigger problem on the Coast is that we are inviting development and progress without the right planning or concern about longterm effect on the coast
	  o Tonight's topics were fairly innocuous --- small enough projects, but Planning needs to think more long term to protect character of the coast
	  o County priorities are not in sync with community, development and plans need more thought and carefulness for long term impacts
	• There are many things in the Plan
	  o Discussion lacked specifics
	  o Questions during presentation could have been answered with more detail
	  o Likes crossing at 2nd street
	  o Discussion on midpen at Carlos St. was not addressed today during discussion
	    □ This is a big conversation and needs to happen
	• Discussion on some of the critical projects and concerns was lacking during presentation.
	  o What's going to happen at Cypress? Plan does not address potentially huge traffic problem.
	  o Planners could have provided timelines, images showing what's there and what's missing and what is going in
	  o More time is needed for community to discuss/debate pros and cons of different elements with Planning
	    □ Traffic lights vs. roundabouts
	    □ Community needs to discuss pros and cons of all these elements with the County

8	• Bikeways – Not seeing anything in the plan about connecting the trail to Devil's Slide area. Wide former highway that connects the two parking lots on either side of the

	tunnel but the only way to get there in by driving. Biking in this area can be really dangerous. Bike routes could be used on this area that I take on single track. Can be easily adapted to be used as a path. North side of Devil's Slide, climbing the hill up from Pacifica is probably the most dangerous part of the route right now. Both are challenging areas. Basically, if I want to bike on the Devil's Slide pathway and do not want to take single track, my only option is to ride along the highway. Gray Whale cove parking lot to tunnel cove entrance, the dip in either direction provides very little shoulder. o North on Montara bike pathways are the area of concern • COVID-19 has provided even more complexities to this plan. Transit options are very limited and now even more so with social distancing. o Very likely that things will deteriorate because there is no money to increase transit options. No money to add bus routes in the future. □ These meetings should take place at least six months from now so maybe there would be a better idea about what the future is going to look like □ Bus/Public Transit money has taken a big hit because there is virtually no ridership currently □ We are not ready to know how to modify transportation because of COVID-19 □ One of the goals of Connect the Coast is to make sure the coast is accessible to people. The amount of buildout that is zoned in is not sustainable. Goal of this is to find a plan to make it sustainable but that is not represented in the current plan. □ Need to find a way to retire some lots that are too small, not buildable, try to change zoning on those. □ See what improvements can be done for transit but that is not in this plan □ A realistic plan is needed. The current Connect the Coastside plan does not seem like something we can sink out teeth into at this point. o Some of these recommendations about traffic just don't make sense anymore o Bike path on cypress point takes people up a steep hill – doesn't work. Taking kids out on this trail can be really dangerous. o We can't do this in a vacuum. Take into account □ Planned Princeton □ Big Wave □ Cypress Point □ New hotel in HMB □ Potential impacts from Dunes Beach development □ Cannot have this discussion without including impacts of HMB and these proposed developments
9	• Details of parallel trail @ Carlos street commercial section need examination o Carlos Street : problematic □ Too busy, especially for visitors (a lot going on, streets intersecting, pedestrian crossing, etc.) □ Don't close off norther terminus of Carlos St.

<table>
<tr>
<td></td>
<td>

Connect Carlos to 16th and put a roundabout in proposal

Short term: Connect Carlos to 16th or even make it right turn only, but don’t close it

Suggestion: No one way segment

Proposed between Vallemar and California

Suggestion: No speed humps

Recommendation to add roundabouts/one roundabout at each end of Moss Beach (one member)
Can there be short term solutions for safe crossing of Hwy 1 before the long term solutions are implemented?
Parallel trail : who will pay for it? What is the concrete or rough timeline?
Roundabouts:

Cost concern

cost upwards of $5M
Is it viable?
Who will pay for it?

Safety concern

Coastside residents are familiar with the area, but visitors may not be

May be difficult to navigate
Could cause collisions
Visitors tend to haphazardly decide when/where to park and turn on and off of Hwy1

This could add confusion and danger to driving around this area
Could cause slowing or traffic issues

Parallel trail between 14th and 16th: allow people access to the trail

Could just prune hedges/simple short term solution?

For both Carlos St. and parallel trail, start less expensive short term solutions before long term projects are completed

Terminus of Carlos St. (mentioned above)
Parallel trail

Pruning vegetation to allow access?

</td>
</tr>
<tr>
<td>10</td>
<td>

One commenter says that improvements may not actually increase walking in neighborhood due to weather. No one uses trail that extends to Miramar that goes over drainage/creek. But another commenter says that people do bike on trails a lot.
Carlos street closure at the north end (at Highway 1)- closure does not make sense. Need right turn only onto Highway 1 from Carlos Street.
Open Main St in Montara to Moss Beach. It dead ends now. Main Street can connect to Carlos Street with Bridge over creek.
Most Important to one commenter is Samtrans needs to overhaul bus route system. Little buses currently used for senior transport. Need to extend routes to neighborhoods, Hwy 1, Hwy 92. Less need for trails, signals and roundabouts (not that much traffic now).

</td>
</tr>
</table>

11	• CTC uses outdated traffic data. Why is HMB not part of the data? Evacuation routes need to be addressed in CTC. 3 million visitors, and new development (Cypress Pt. and Big Wave) add up to 2,000 daily trips. • Green Valley Trail missing • Congestion due to ped/bike/car traffic interactions…exacerbates traffic problems. Need to give folks safe ways to cross, reduce haphazard crossings. • Sierra St. connects to California and is unsafe for bicycles. • Data is 6 years old. • A lot has changed on the Coastside since Covid. • Need pedestrian under crossings of Highway 1 at busy places like Sam's • Love living on the Coastside, many visit, so there are no perfect solutions and we need to find compromise solutions. • CTC should be a community transportation plan. It's used to promote development. Plan should serve existing community and tourists.
12	• Over or under passes – anything that doesn't slow the flow of traffic. Gray whale cove – accidents – underpass would be safer – and in Montara/Moss Beach too. • These are a really cool option – safe and can walk and see neighbors, sip coffee. • And would be safe!! • Any other ideas?? Carlos St. might be safer as a one way street and would be great to have bike/ped • Pacifica overpass/bridge would be great in MB or at Gray Whale Cove – concern is money... • School going down hill due to lack of resources – doesn't understand the one way street on Carlos – it's pretty wide so not sure why – would create challenges to get to PO – why? Is it being pushed to support Mid Pen project? Change neighborhood roads that are quaint and functional – concerned about that.
13	• Evacuation plan • Trying to fix something that residents don't want to have fixed – not broken • Should be more sustainability on how coast is developed – fragile area with natural resources • Put improvements on developers rather than residents • Don't feel like they're dealing with current issues in Moss Beach • Plan focuses along Hwy 1 rather than side streets where daily living occurs • Find out what residents want. • Care more about people who live there – listen to them. • Bike and walking paths would help the most – will not help with daily traffic (shopping)
14	*None*
15	• California is called out as condition F, but that is not the experience of living there. Need a more inventive option then roundabouts and stop lights (for example, taking alternative routes that avoid traffic) • Another participant agrees about that the California experience is not an F right now, but California is getting worse, needs a future improvement. • The worst traffic problems are getting into Half Moon Bay or Pacifica. • Adding lanes to Highway 1 needs to be part of the solution.

	• Lights should be coordinated or synchronized if they have to be put in. • Consider adding an on ramp or off ramp to Highway 1 at the airport end of Moss Beach. • The lights between Vallemar and Rockaway beach. • The intersection of Hwy 1 and Hwy 92 has backed up traffic. • The first light in Pacific is not geared towards traffic coming from the south. • Suggestion to look at Harris Ave & Hwy 1 because it has unique interface, people can pull out and the lane is all theirs.

What questions do you have or what would you like to know more about?

GROUP	NOTES
1	• What are the funding sources? More specifics available on website so people can see it. • What other options have been explored to cover these things other than development?
2	• Cypress Point may use Carlos, Sierra, Stetson, Kelmore, etc Moss Beach crossings at HW1 • Focus is on bike/ ped improvements--needs to account for increased car traffic as well
3	• Would proposed stop signs near Farallone View Elementary school increase traffic? • Proposed closure of Carlos Street going north? Public safety concerns. Significant impacts to traffic. Is the main purpose to accommodate affordable housing project (i.e. 71-unit affordable housing project). Not appropriate location and community does not have adequate infrastructure to support. Ideal location for affordable housing would have walkability, access to health care, access to jobs, etc. Services/amenities in the county are expensive. Access to grocery stores are limited. • Why is there a proposed park and ride at Etheldore Street and Highway 1? • Community wants to alleviate traffic not increase traffic with additional parking.
4	• Alignment of Parallel Trail – will it be shared v. separate and on what sections? Want clarity on this
5	*None*
6	• Concern that comments were not captured in notetaking, need email address for where comments can be sent in.
7	*None*
8	*None*

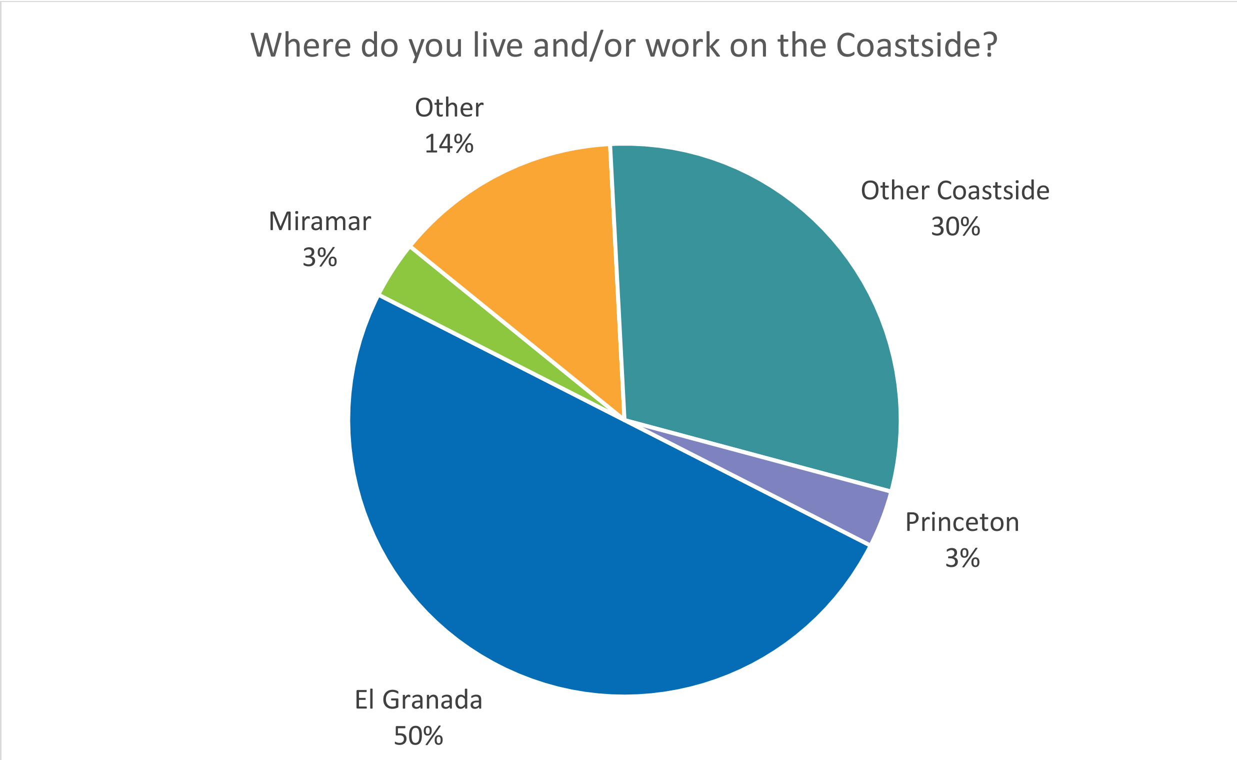
9	• Real timeline
	  o In the meantime, what short term solutions can be implemented?
	• How will projects/roundabouts be budgeted?
	• Details of parallel trail
	• Concerns about roundabouts
	  o Cost
	  o Safety
	• As density of the Midcoast increases, how will the county address traffic?

10	*None*

11	*None*
12	*None*
13	• When will we learn more about evacuation? • A proper traffic study is needed (more recent than 2014) • What about the EIRs that need to be done? • Notable different post-COVID in traffic levels • Address previous resist density traffic studies point by point • Are parallel paths solving current issues? • Who will pay for improvements? Concern about residents being responsible. • How will kids travel to school? • Will transit be cost effective (time and money)? • What does “fair-share” mean?
14	*None*
15	*None*

Appendix 5 - June 25th Meeting Poll Data & Small Group Discussion Notes

Poll Data



Answer	Votes
El Granada	15
Princeton	1
Miramar	1
Other Coastside	9
Other	4
Grand Total	**30**

Small Group Discussion Notes

Which of the projects discussed today for Princeton, El Granada and Miramar are most important to you? Which projects are most important to encourage you and others to walk, bike or take transit?

GROUP	NOTES
1	• Great to see more improvements to facilitate travel by bike • Biggest challenge in EG is parents/kids go to school in HMB – too far to ride bikes – so improved transit would be key – buses fill up on the way to/from school – more service on school days and for visitors on weekends – make more frequent and easier to use

<table>
<tr><td></td><td>

Concern about lack of separation between peds and bikes and cars – on coastal trail/multimodal trail – can be dangerous
Increase in traffic in 25 years has been difficult – can't go anywhere on the weekend – very hard for residents – and concern about emergency situations as well
People will come – how to make improvements to handle it – is the scope of these projects enough to handle all the traffic – more or just different improvements – also problems on 92 – turning lanes, stop lights (e.g. at Frenchman's Creek backs everything up – even for a few cars) – could it be on a timer so it doesn't allow peds to cross as often during commute times.
Getting in/out of HMB is difficult during commute times/distances are great and make biking and walking difficult too
Likes proposed park and parking lots on Alhambra – how to control flow of traffic – get people across to the beach safely without backing up traffic is the challenge – don't allow parking on HWY 1 if a parking lot is established to address safety/traffic flow
Crosswalks – no button on the one in Moss Beach – very dangerous
MCC is working with County to address the problems with the new cross walk installed by Cal Trans without community input.

</td></tr>
<tr><td>2</td><td>

Big wave project (concern with being age and handicap friendly)
Age-friendly communities

Trails being accessible to people on 3-wheel bikes
Trail width
For California coastal trail and parallel trail (east side)

Safe pedestrian crossings, if they are used properly

</td></tr>
<tr><td>3</td><td>

Comprehensive fix at Surfer's Beach would be great—even on weekdays traffic is bad, but safety is the big issue. Multiple accidents, fatalities due to traffic, visibility issues, particularly at dusk. Pedestrians aren't visible; pedestrians cross at random points. Wouldn't put in new cross-walk—would get rid of east-side parking, and concentrate it at the stoplight. And use space from Harbor District. Creating crossings w/out parking at those areas is counterproductive; but parking in those areas is also problematic because it removes valuable resources—parking in the right-of-way at existing stoplit intersections is best.
Concerns with some proposed projects; many coastside residents value character of coastside, any improvements must respect that character. Sidewalks proposed instead of pathways—this takes away rural feel, and adds an urban character, which isn't preferable. Curb and gutter on Highway 1 also, and stop-lights detract from character. Similarly, bus shelters are good but the style of them needs to match the unique character of the coastside, rather than generic. Parallel trail is valuable; just not anything that advances urbanization or urban character. (Small percent of community is participating in process, not a robust account of community.
From Capistrano stoplight to Coronado stoplight (Hwy 1) people randomly cross the road, and a crosswalk won't make them use it—not productive, opposed to any crosswalk there. The big empty El Granada Elementary School parking lot—which is closed now—is unused during the weekends. Why not

</td></tr>
</table>

	use as a beach parking lot? 50+ cars, much capacity. No crosswalks for Surfers Beach. Opposed to overpasses because of aesthetic impacts; underpasses because of crime, etc—negative impacts. Maybe have a shuttle (“beach bus”) to take people to designated locations, Caltrans lots. Directly across from new fire dept and Wilkinson School—people have converted a space into an informal parking lot, dirt lot—this should be stopped. Illegal/informal use, because of closed lots during COVID. • IMPROVEMENTS, IN PLAN, THAT ARE ATTRACTIVE? Airport Boulevard: both sides of the road are loaded with cars—abandoned? Or residents’ overflow? Will be a barrier to bike lanes if there’s parking there. Bike lanes on HWY 1: if you clear parking on east side at surfers beach, will facilitate constructing a bike lane, depending on Class of bike lane. Would be good to have Parallel Trail for pedestrians only. • Bike parking at Princeton/Pillar Point: good idea for bike owners. If needed for connecting to bus, need to expand bus service. But if for bikers coming from elsewhere by bike, it’s good. Depends on purpose. • Coastal trail extension? On city streets through Princeton…. Assuming it’s close to the water, in favor of improvements. • Regarding pedestrian underpasses: some people are in favor of some models. Currently being built in places all around the world. If well-lit, brightly painted, natural light, with surveillance technology, can be monitored. Can be done safely. (Various opinions). Heavily used underpasses are effective; police themselves because of traffic. Underpasses only way to truly improve traffic, because it doesn’t interfere with vehicular flow. Underpasses remove need for stoplight; safe, no congestion. “Cadillac of crossings.” • Push cars over a bit but normal bike lanes on HWY 1 are not needed. Need a bit more room—but not widening of the highways. Formal bike lanes would probably require that; better effort is to use coastal trail & parallel trail. Give people options of routes, without expanding HWY 1.
4	• What projects can be implemented soon? Project time horizons are long, some 10 years or more. Do some crosswalks early. Transit revenues down. Is it realistic? Funding for bike paths? Zoning allows development that exceeds infrastructure. Identify projects that can be done in the near term. Pandemic has changed things, e.g, traffic patterns are traffic studies still relevant? Identify crosswalks as first priority. • Supports biking options, walking options for crossing Highway 1. We need to be asked what we don’t like about this plan. Don’t support more parking lots. Don’t want to end up like Santa Cruz or Pacifica. Parking lot in Etheldore could disrupt natural habitats in the area. Parking lots are for people who don’t live here, not residents. Good bus service is important, particularly for disadvantaged members. • More innovative environmentally friendly options to asphalt. Water permeable pavements. Coastal atmosphere needs to be protected. Urban area examples are grating. • A lot of tourists and visitors from the area already here, throwing trash, but there’s nowhere like Mirada Rd. where one can access the coast as closely, so additional Miramar parking is needed. Magellan is jammed, Mirada Rd. too. • Extending the bike paths would be wonderful.

	• Keep the highway moving. Can't slow it down. Worried that roundabouts and signals will slow traffic too much. Not enough room to make roundabouts that allow faster traffic. May not be able to afford "smart" lights. • Increasing lanes is not the answer. • One roundabout would be a nice thing, make people safer. Need to slow traffic
5	• Moss Beach commuter to HMB via Hwy 1. • CTC is okay - feels like "band aid fixes." Hopes for specific plan to coordinate from tunnels to South of HMB to Pescadero. CTC is important but feels short-sighted. • Closing Wienke Way heading south at California makes sense. Challenging intersection and could include pedestrian crossing there with push button/lights. Access to coastside market - an important destination. • Walk near Alhambra, Surfer's Beach. Complicated area. People are parking in neighborhoods with increase in trash (when parking was closed due to COVID-19). Need improved access to post office near there. Connection with the sanitation district / park, and formal parking area. Valencia down to Obispo (runs parallel to open space), near fire station. Traffic along Highway 1 and pedestrian crossings feel risky. Crossing should be coordinated with where the parking lot is. • Bikes between Princeton Harbor and HMB. No bike lanes. Dangerous route. Wayfinding - google/waze - signs are up high and out of date. Using technology to help with wayfinding. • Capistrano/Prospect - need better crosswalk paint and/or crosswalks. Higher visibility paint. PAINT. JUST PAINT. • Half Moon Bay Distillery - no painted crosswalks. Need crosswalks here and at every intersection in Princeton Harbor and along Princeton Avenue. Lots of traffic and no marked crosswalks. • Have to go on the north side of Princeton Avenue to cross the street on bike.

6	• Anything that would improve traffic flow from stop light at Princeton to El Granada Elem/Wilkinson school. Particularly commuting hours and weekends. Made worse by parking on Hwy 1 and randomly crossing Hwy 1 (could be improved by dedicated parking and crossing location).
	    o Look at where people are already crossing to determine crosswalk location.
	    o Sam's Restaurant traffic congestion
	    o Need multiple crosswalks, people look for shortest route
	• Unlikely to walk to Halfmoon Bay (distance/weather)
	• Airport St east-side trail (if can be done without disturbing the wetlands). Bike trail because traffic is fast and dangerous.
	• Parallel trail for students walking/biking to school.
	• Sidewalks for students to get to school safely.
	• Putting trail through Princeton will be problematic as streets are not designed to accommodate a trail
	• Capistrano – islands in center, sidewalks, etc very tight roadway means a challenge to add a trail
	• Could continue trail that's on east side of Hwy 1 to Miramar/Montara. Would need ways to cross Hwy 1.

	• Two types of users – some want directness, others want more scenic route *How likely to make location trips with walking/biking/travel without a car?* • Depends on location (uphill/ downhill) • Recreational walker – walking anyway, would appreciate safer routes, makes it more possible.

What else could the County do to improve transportation options in Princeton, El Granada and Miramar? What is missing from the plan for these areas?

GROUP	NOTES
1	• More bus service during school hours – need more buses for the kids – so crowded now – if not more parents would feel comfortable putting kids on bus • More signage would be helpful to help folks find parking and trails – places to turnaround – would help tourists who don't know where they are going – paint the pavement to direct people so they don't change lanes at the last minute – improve safety • Bike to school days – more to encourage folks to get off the road and bike – provide incentives – would help the daily commute for commuters if local traffic is more bike/ped/transit

2	• Roundabouts
	  o Concern about roundabouts causing traffic congestion
	  o Locations and effect unclear
	  o Roundabouts making commute more time consuming
	  o Roundabout addition around intersection and at north end of el Granada going into Princeton (suggestion)
	• Safe pedestrian crossings
	  o By surfer's beach
	  o Add one between El Granada stop light and end of surfers beach area?
	  o Need a technique to handle periodic bulk crossing from east side of the street that is safe
	  o How will pedestrian crossings affect traffic? How many will there be and where?
	• Parking lot addition:
	  o Parallel street parking not a traffic concern
	  o May increase # of pedestrians needing to cross the highway at that location (all at once)
	  o Pedestrians will cross wherever they want, regardless of new crossings
	    • Traffic concern
	  o People don't use existing hwy 1 crossings, so why would they use the new ones?
	• Pedestrian crossings and roundabouts won't work with a one lane hwy (cause more traffic)
	• More traffic study needed
	  o Around new development

	• One access stairway down to the beach
	  o Correlating beach access with where ped xings are might alleviate traffic
	  o Parking feeding into crossings leading to the beach (suggestion)

3	*See notes in question 1*
4	• As we improve transportation infrastructure, traffic will increase. • Need lower speed limit • Need more of a focus on environmental resources and protection, not just building things. More attention paid to garbage problem, mainly a weekend visitor problem.
5	• Comprehensive plan across multiple organizations. Coastside sanitation - understanding the collaboration across the various organizations and how things will work together. Challenging to understand where to get voice and concerns heard with different entities and who manages what. Resources to understand who to go to speak with. Are there feedback sessions with multiple constituencies involved so the public can ask questions of multiple entities at one time? • SamTrans needs to be coordinated with coastside - can supply different types of buses (e.g., hybrid, electric, etc.) and coordinate with express buses to 280. Important and they should be part of the comprehensive plan. Short range and long-range plan, and the long-range plan should include HMB, 92, SamTrans, and other variables. Highway impacts everyone, including people going to school. • CTC Roundabout to put at crystal springs, 35/92, Miramar. It's an extensive plan, but trying to address whether we want it. Should we be planning right now during COVID times?

6	• Wilkinson School, Coronado and Santiago intersection: T shape, two bus stops, no crosswalk, only two stop signs (rather than three). Intersection is confusing and dangerous, especially for bus users.
	  o Coronado – uphill off of Hwy 1, difficult to interact with pedestrians, and traffic flow. Series of difficult intersections.
	  o Traffic funneling to Hwy 1 as well
	  o People will take left at El Granada and Princeton to use as a short cut to get onto Hwy 1
	  o Potentially parking structure will help take traffic off Coronado
	• Questioning multi-use parking lot at Carlos and Hwy 1 – concern about it being an unsafe location – why put parking lot here?

What questions do you have or what would you like to know more about?

GROUP	NOTES
1	• Trail improvements/signage – how to preserve the area? Get people aware of erosion problems and wildlife – better beach access in some places to prevent

	people from scrambling down the bluffs – safety and to preserve the environment • Parking lots – and will there be bathrooms? May need other facilities, safe place to cross, and bathrooms – needs to be coordinated to all come together

2	• Age friendly communities: Will trails be age and disabled friendly?
	    o Wide enough
	• How many roundabouts will be built on hwy 1? Where will they be?
	    o 2 proposed
	• How many crossings?
	• How will projects affect traffic? (not discussed in presentation)
	• Why not talk about all of the projects discussed in the general meeting? (around the highway)

3	*See notes under question 1*
4	*None*
5	*None*
6	*None*

Appendix 6 – July 7th Youth Meeting Group Discussion Notes & Poll Data

Attendees: 2 Youth Leadership Institute (YLI) Staff, 7 youth, & 2 county staff (Katie Faulkner and Jackie Nunez)
Tuesday, July 7 2020 3:00-4:30pm on Zoom

Introduce yourselves

- Name
- What's your connection to the Coast?
- What experience have you had working on transportation issues with YLI?
- What is one thing you look forward to learning today?

Youth Responses:

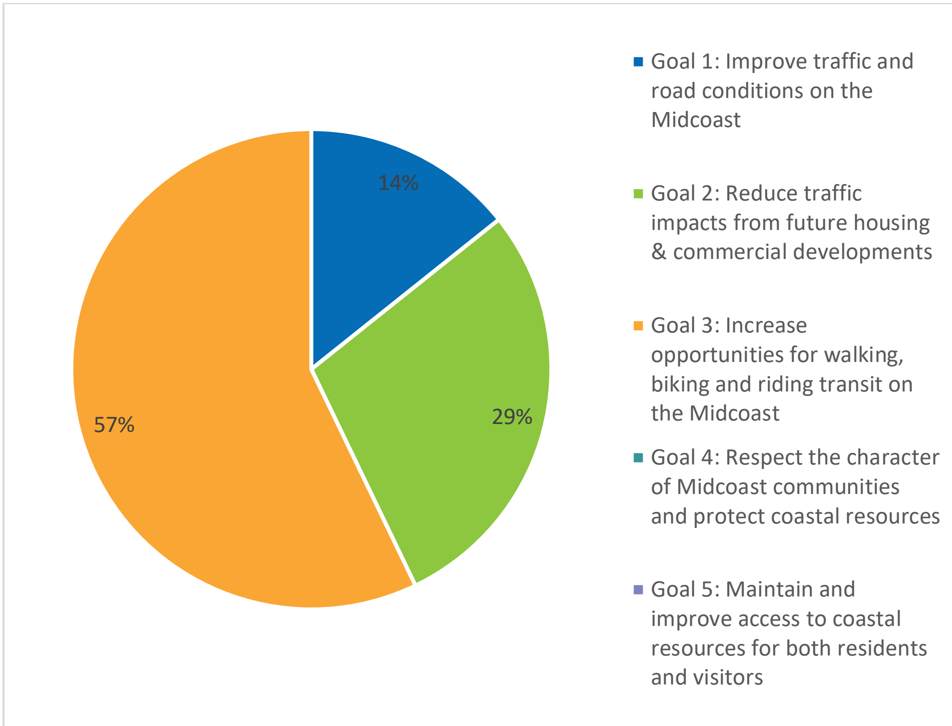
- Lived in El Granada & Moss Beach, participated in a road watch survey observing distracted drivers, and traffic observations
- Lives on the coast, does projects around transportation like surveys, interested in the behind the scenes work
- Lives on the coast, worked on road watch, learning more and about the behind the scenes
- Lives on coast, road watch, behind the scenes & how things like signs got placed where they are
- Lives in Moonridge and works in Princeton, involved with pilot project on ways to get around the Coastside, looking forward to learning about how to get around
- Going to school in Coast but doesn't live there, helped make the YLI survey, behind the scenes
- Lived on coast for most of life, road watch & the priorities of half moon bay, and behind the scenes

When it comes to getting around on the Coast, what is working well? What is most challenging for you?

- Challenges:
    - Relying on other people for transit - Get parents to have the time to drive to a certain place
        - "Finding rides sometimes is harder"
    - Taking the bus is hard and aligning my schedule with the bus schedule to when my friends want to meet
    - Traffic
        - Traffic on Main street and getting into HMB from Moonridge
        - Traffic near Surfers beach is challenging, there is jaywalking which is dangerous and can lead to accident "my sister has been in an accident in Surfer's beach to due to the stop and go cars"
    - Lighting at night - it's very dim when crossing the street at night
    - Running/walking on Highway 1 is challenging, road conditions are poor, potholes **+1**
- Working well:
    - Walking **+1**
        - "Most of the places that I go to are close together in Half Moon Bay"

- Carpooling with friends **+1**
- The intersection before Hwy 92, no right turn on weekends, has been helpful with overflow traffic when heading east towards 92

Focusing on the goals of the plan, which one is your highest priority?



Goal 1: Improve traffic and road conditions on the Midcoast	1 participant	14%
Goal 2: Reduce traffic impacts from future housing & commercial developments	2 participants	29%
Goal 3: Increase opportunities for walking, biking and riding transit on the Midcoast	4 participants	57%
Goal 4: Respect the character of Midcoast communities and protect coastal resources	0 participants	0%
Goal 5: Maintain and improve access to coastal resources for both residents and visitors	0 participants	0%

<u>Group Discussion Notes</u>

1. **Which ideas from the plan are most important to help you get around more easily? Are there ideas you have that may not be in the plan?**
   a. Biking & walking recommendations – doesn't drive yet but walking and biking are an option.
   b. Biking & walking. Making streets safer at night with lights and making it safer to walk day and night.
   c. Driving - Jaywalking is a major factor and would like to have crosswalks or signal lights. Especially Montara & Moss Beach, which are dangerous areas to cross the highways.

d. Public transit – main mode of transportation, and lots of people rely on public transit.
e. Biking & walking – doesn't drive yet.
f. Public transit – how he gets around and to school in usual times.
g. Biking & walking – everyone's way of getting around town.

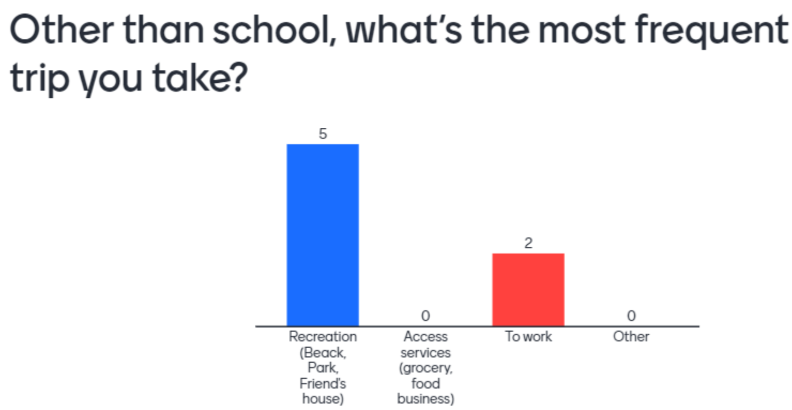
2. **What's your favorite place to go on the Coast and how do you get there? What ideas do you have to improve your transportation experience to get there?**
    a. The Princeton Beach and access to the coastal trail. Lives on the other side of Highway 1 in Moss Beach and has to drive to the beach & coastal trail because it is safer. Would like an easier way to cross Highway 1 and a sidewalk & bike lane on Highway 1 would make it easier to get there.
    b. The beach is most convenient and lives close, would not change anything. Walks or bikes to the beach. When tourist come parking could be improved.
    c. The beach. Poplar Beach (bus and walk) or the beach near Moon Ridge (walk). Might improve things to make the bus closer to a beach.
    d. Kelley Beach & walks there. It is a little dangerous, bike & ped lane is combined, but people park there so there is not much space to walk & bike. So more space to walk & bike along the road.
    e. Kelly Beach. Goes with a friend who lives close, there is a sidewalk, would not change.
    f. Coastal Trail. Hard to get there because has to go for a run along the highway to get there, would be better if there was an established walk/bike lane to make getting to the Coastal Trail easier.
    g. Poplar Beach. Skates there, mostly on the road, there are not many sidewalks. At the beach there is a sidewalk but it is narrow, and skaters/bikers/drivers all have to share the road and bump into each other.

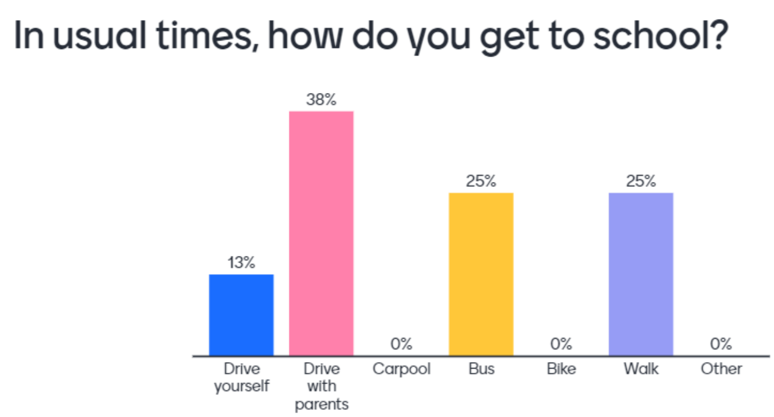
3. **What is your vision for transportation on the coast?**

Questions from the session:

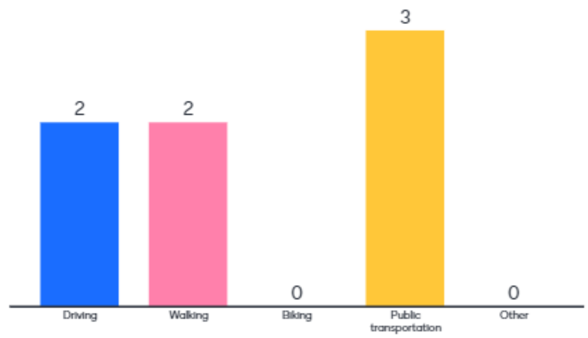
- When will the multimodal trail be finished?
- Is bicycle parking free?
- Who decides where the parking goes? Can the community make recommendations?

Poll Results:

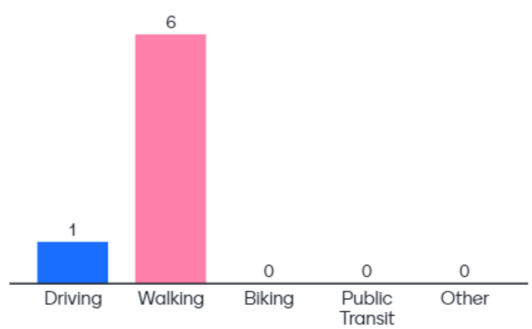




Which mode do you most want to see improved?



Which mode do you most use to get to access the beaches?



Appendix 7 - Summary of Comments on Connect the Coastside & Proposed Changes

The project team developed this summary by reviewing all comments received and assigning a primary category and subcategory to each comment. This section is organized by category and subcategory. Each subcategory is organized into the summary of comments ("What We Heard") and proposed changes to the Draft Connect the Coastside Plan ("Proposed Changes to Connect the Coastside"). Some comments were relevant to multiple categories and/or modes of travel and are therefore noted multiple times. The main categories are

- Active Transportation (Walking and Bicycling),
- Driving,
- Transit,
- Land Use,
- Planning Process,
- Data,
- Overarching Concerns or Considerations, and
- Errors and Clarifications.

Active Transportation (Walking and Bicycling)

Many commenters stated that it can be difficult to walk and bike around the Midcoast and to Half Moon Bay, and most support improvements that will make it easier and safer to walk and bike. Commenters mentioned that walking and biking improvements would give people an alternative to driving to shop at stores, see friends and family, and visit beaches and trails.

Pedestrian Crossings

What We Heard

A large number of commenters mentioned that Highway 1 is difficult and unsafe to cross on foot or on bike in many locations along the Midcoast, and that they would like to a solution to this problem. A few commenters stated the need to cross Highway 92 near businesses and to connect future planned trails. Commenters supported a variety of solutions to make it easier and safer to get across highways, including implementing:

- Additional marked crosswalks with pedestrian activated beacons/lights
- Traffic signals with marked crosswalks
- Medians or median islands with marked crosswalks, so pedestrians can cross one direction of traffic at a time
- Roundabouts with crosswalks
- Lower speed limits and slowing car speeds
- Pedestrian underpasses
- Pedestrian overpasses or bridges

The greatest amount of support was for crossings with pedestrian activated beacons/lights.

While many commenters supported the idea of adding new crossings along Highway 1, not all supported the idea. Some were concerned that more Highway 1 crossings would slow down traffic, and that pedestrians would not use the crossings and would instead cross Highway 1 wherever convenient.

Commenters also mentioned several intersections outside of Highway 1 where crosswalks would make it easier and safer to walk around Midcoast neighborhoods. Commenters mentioned locations where they would like to see pedestrian crossings added or improved:

- Highway 1 at Gray Whale Cove
- Highway 1 & 1st Street in Montara
- Highway 1 & 2nd Street in Montara
- Highway 1 & Carlos/16th Street
- Highway 1 & Wienke Way/California Avenue in Moss Beach
- Highway 1 & Virginia Avenue in Moss Beach
- Capistrano Road & Prospect Way in Princeton
- Every intersection in Princeton Harbor and along Princeton Avenue
- Highway 1 in El Granada by Surfer's Beach
- Highway 1 & Coronado Street in El Granada
- Highway 1 and between Miramar Road and Medio Road in Miramar
- Highway 92 near busy commercial areas with attractions on both sides

Proposed Changes to Connect the Coastside

Marked pedestrian crossings may or may not have an impact on traffic flow. The impact on delay will depend on overall pedestrian volumes and demand for crossings, the design of the marked crossings and what type of signal, beacon, or other features are in place, and how other projects and programs support shifting trips from vehicles to other modes. Connect the Coastside recommends adding marked pedestrian crossings due to safety concerns and stakeholder support.

The draft Connect the Coastside Plan (Plan) currently recommends marked pedestrian crossings with a beacon, or in conjunction with proposed intersection control, at nearly all of the locations listed above. The project team will update the Plan and relevant maps to address:

- Highway 1 and Virginia Avenue, where there is an existing marked crosswalk with signage but no flashing beacon.
- Crossing locations in Princeton Harbor and along Princeton Avenue based on Plan Princeton.
- Capistrano Road and Prospect Way based on Plan Princeton and the Unincorporated San Mateo County Active Transportation Plan.
- Highway 92 crossings (specific locations).
- Other locations as applicable based on Caltrans District 4 Pedestrian Plan and 2020 State Highway and Protection Program projects.

The Plan does not recommend underpasses or overpasses due to the high costs for construction and maintenance costs, and right-of-way needed to make them ADA accessible (see #12 in Response to Inquiries). Previously, there was an above-grade crossing of Highway 1 in Moss Beach near the northern terminus of Carlos Street and the project team will evaluate whether this is a viable project to include in the Plan.

The project team will expand on future steps needed to develop specific crossing designs for each location to be more consistent with the Highway 1 Safety and Mobility Study, including seeking opportunities for additional pedestrian crossing infrastructure (such as median islands) when feasible, describing the roles of Caltrans, County Department of Public Works, County Planning and Building Department, and California Coastal Commission, as well as the proposed public process for developing detailed designs for implementation.

Walkways

What We Heard

A number of commenters requested improvements that make it easier and safer to walk around Midcoast neighborhoods. Commenters mentioned several challenges that make it difficult to walk around the Midcoast including:

- Roads that don't have a safe space for people to walk along.
- Speeding cars.
- Dark streets at night.
- Many existing sidewalks are discontinuous and not well connected.
- Uneven surfaces on roads and trails are difficult for older adults.
- Overgrown vegetation makes it difficult to walk along Highway 1 and some sidewalks.

Most commenters mentioned improvements that would provide more safe space for people to walk along neighborhood roads. Some commenters requested more sidewalks; however, several preferred pathways instead of sidewalks to preserve the rural character of the Midcoast. There was a request for traffic calming measures to make it safer to walk along the street, but others did not want digital feedback signs and requested a limited number of speed bumps to preserve the rural nature of the Midcoast.

Commenters suggested walkway improvements including:

- Highway 1 between 7th and 9th Streets in Montara: add a sidewalk in front of the Highway-fronting businesses.
- West side of Highway 1 in Montara: clear the vegetation to allow room to walk along the paved shoulders.
- Highway 1 from 14th Street to 16th Street between Montara and Moss Beach: requests for near-term and long-term solutions to make it easier and safer for people to walk.
- Carlos Street in Moss Beach: support for pedestrian improvements like the parallel trail.
- Cypress Avenue to California Avenue along the west side of Highway 1: add a pathway or sidewalk next to the businesses, paint side street crosswalks.
- Airport Street: add a dedicated pedestrian trail or sidewalk.

Proposed Changes to Connect the Coastside

Unpaved pathways do not always provide a smooth, even, and accessible surface necessary for those in wheelchairs, using strollers, or that have sight impairment. Unpaved paths can also be more challenging to maintain especially in inclement weather. Due to the lack of separation from the roadway, drivers often park on unpaved paths blocking pedestrian access. Unpaved paths will be recommended as short-term solutions and the plan will describe the need for brush clearance and maintenance.

Connect the Coastside will recommend sidewalks in higher traffic pedestrian areas, including along routes to school (such as to Farallone View Elementary School) and in business districts, and will specify the need for a community-engagement process at the time of specific project development. The project team will ensure the next draft plan is consistent with concurrent planning processes (e.g., Plan Princeton) and the maps on the Connect the Coastside factsheets. In addition to those, the project team will add recommendations for:

- Sidewalk on eastside of Highway 1 from 7th Street to 9th Street in Montara.
- Paved trail on eastside of Highway 1 from 14th Street to 16th Street (Montara-Moss Beach).
- Sidewalk on westside of Highway 1 from California Avenue to Cypress Avenue.
- Regular clearance of vegetation along Highway 1 to make more room for people walking.
- Marked pedestrian crossings of stop-controlled side streets intersecting with SR-1.
- Pedestrian accommodation on Airport Street.

Safe Routes to School

What We Heard

Commenters supported the idea of providing Safe Routes to School (SRTS) and making it safer for families and kids to walk and bike, and several specifically mentioned supporting SRTS improvements to Farallone View Elementary School. Commenters highlighted the importance of the Multimodal Parallel Trail to SRTS, which will allow Midcoast students to walk and bike to school in Half Moon Bay, El Granada and Montara.

Proposed Changes to Connect the Coastside

The project team will add section(s) on Safe Routes to School, including background on the San Mateo County Office of Education's programs, show existing and proposed routes to school on Plan maps, and note which projects (such as stop signs and sidewalks on routes to school and improved transit) support walking and bicycling to school.

Bikeways & Bike Parking

What We Heard

Many commenters supported the idea of adding bike lanes and/or bike paths to make bicycling in the Midcoast easier and safer. Commenters mentioned several obstacles to biking including:

- Few bike lanes on the coast, and existing bike lanes are not well connected.
- Lack of lighting makes it difficult to bike at night (and some people need to bike at night).
- Lack of signage and markings for bike routes and lanes.
- Lack of bike parking.
- Some roadways with poor or rough conditions make it less safe for bicycling.

Generally, commenters stated a desire for more bicycle facilities, such as bike lanes and paths on the Midcoast and some requested bike amenities like lighting and signage. One commenter suggested more incentives to encourage people to bike instead of drive, which could help reduce daily commute traffic. Some suggested adding more bike parking and mentioned Princeton and Pillar Point. A few commenters stated that a bike lane on Highway 1 was not necessary if the shoulders were wide enough to accommodate bicyclists. One commenter suggested that adding bike lanes is not a traffic reduction strategy, and specifically, adding them to Highway 92 might not attract many cyclists due to the steep terrain.

Specific locations commenters mentioned in need of bike lanes or paths included:

- Airport Street in Princeton
- Montara north to Pacifica
- Highway 1 at Surfer's Beach in El Granada
- Highway 1 throughout the Midcoast

Proposed Changes to Connect the Coastside

The project team will reference sections of the Unincorporated San Mateo County Active Transportation Plan (ATP) to ensure consistency for bikeway recommendations. Connect the Coastside (CTC), the draft ATP, and Plan Princeton all recommend a bikeway along Airport Street: the exact configuration will depend on a future community engagement effort, and design and environmental constraints. The project team will add language to CTC in Chapter 6 (implementation) describing necessary future community-based planning processes. CTC and the ATP both recommend Class II Bike Lanes on Highway 1 from Montara north to Tom Lantos Tunnel and in the area near Surfer's Beach in El Granada. In addition, the Parallel Trail (Class I Path) is recommended from Miramar to Montara.

Highway 92 is an important potential recreational route for bicyclists and its current configuration and lack of bicycle-related improvements poses a hazard to cyclists. Connect the Coastside will recommend widened shoulders along Highway 92 to make it safer for cycling and to provide more room for vehicles to maneuver in the event of an emergency.

The project team will add bicycle parking locations, including at Pillar Point and Princeton to the map of proposed bicycle and pedestrian improvements, and reference the ATP and its design guidelines. The project team will expand on Local Coastal Program Policy 2.52 and add a section on transportation demand management to describe existing San Mateo County programs and future opportunities, including incentives for bicycling.

Trails (Parallel & Coastal Trails)

What We Heard

Creating a continuous and easily accessible trail systems along the coast was mentioned in many comments. Commenters stated support and excitement for a parallel trail that connects the Midcoast communities and were interested in seeing improvements that complete the Coastal Trail in the Midcoast. Additionally, several commenters requested extending the trail system to the Tom Lantos tunnel and that the Green Valley Trail be added to the Plan.

Several commenters were concerned that putting bicyclists and pedestrians on the same trail could create problems and wanted to see some separation of these two modes. Commenters also highlighted that large gravel on trails can make them difficult to use and some requested wide trails. Another suggestion proposed adding signage to trails to educate people about erosion and wildlife.

A couple of commenters were concerned about how to fit the Parallel Trail along the commercial section of Carlos Street, and asked for careful consideration of this section with regards to the car traffic and the intersecting streets. Commenters also stated that providing safe street crossings along the

Parallel Trail would be important. Several commenters said that the Montara to Moss Beach Parallel Trail section is important to complete as soon as possible.

One theme was the need to create better connections to and between the existing segments of the Coastal Trail. One suggestion was to create one-way streets along the Coastal Trail route to protect pedestrians and bicyclists on the Coastal Trail. Another comment was concerned about the challenge of routing the Coastal Trail along Capistrano Road because of the limited space.

Proposed Changes to Connect the Coastside

Although open space trails, such as the Bay Area Ridge Trail or more isolated segments of the Coastal Trail are unlikely to contribute to significant traffic reduction or circulation improvements, the project team will update the existing and planned trails descriptions in Connect the Coastside and add these to Plan maps. Implementation of recreational trails is led by the San Mateo County Parks Department and other partners.

Connect the Coastside's proposed paths and trails largely follow roads that have limited right-of-way available; therefore, they will need to accommodate both pedestrians and bicyclists. Pedestrians and bicyclists in most cases are allowed to use the road itself to travel; cyclists who are trying to travel at faster speeds will likely use the roadway over a path shared with slower pedestrians. The Multimodal Parallel Trail is an important project to stakeholders and has the potential to reduce the number for vehicle trips. Connect the Coastside will include a recommended alignment of the Parallel Trail with any necessary roadway reconfigurations noted; however, the exact design of trails and paths (including the Parallel Trail) will happen during future project design and implementation with community input. For the Plan's recommendation on Carlos Street's reconfiguration, please see the Roadway Design section. The project team will add language to the Plan referencing minimum trail design standards and community desire for wide trails with smoother surfaces.

The project team will add to wayfinding signage discussion and highlight trail wayfinding and opportunities for interpretive signage.

Connect the Coastside does not recommend one-way streets due to limited access from neighborhoods to Highway 1. Case studies have shown that speeds are higher on one-way streets and one-way street patterns can increase vehicle-miles traveled.

Driving

Traffic

What We Heard

Many commenters stressed traffic concerns about getting around the Midcoast on Highway 1 and Highway 92, and especially the weekend traffic. Commenters said that traffic can prevent residents from doing basic activities like going to the store or visiting a friend on the weekend. Commenters expressed concern about having a personal medical emergency or a community-wide emergency that requires a large-scale evacuation during a peak traffic period. Many commenters attributed the increase in traffic to people visiting the coast from other locations and said that visitor traffic had increased for all days of the week during COVID-19. Commenters were also concerned that potential and approved new development projects, such as Cypress Point and Big Wave, will increase the traffic on Highway 1 and along neighborhood side streets.

Stakeholders wanted to better understand how Connect the Coastside will improve traffic and asked to see more projects that will specifically reduce car traffic. While commenters stated that most of the walking, bicycling, and transit projects are helpful, many don't think these projects can solve the traffic issue alone. Commenters stated concerns that additional highway crossings would slow traffic and had questions about how to accommodate both pedestrians and car traffic.

Proposed Changes to Connect the Coastside

The project team will look for opportunities to better explain existing and projected future transportation conditions and better characterize what is contributing to both in the Midcoast. The project team will also include a diagram in the plan to clarify the regional travel demand model and software used to assess conditions.

Existing traffic conditions are challenging due to both local (within the project study area) and regional (those outside of the study area) trips taken by car. There are existing (Tables 7 and 8) and projected (Tables 15 and 16) traffic congestion issues at intersections that result in delay. Table 25 (on p.79) of the Plan shows the projected number of total local and through trips: the percentage of local traffic attributable to *new* development at certain locations is projected to be 18-20% of the total number of projected trips.

In earlier draft reports for Connect the Coastside, the project team proposed roadway widening and additional travel lanes to improve traffic flow; however, this was not supported by the community and would be challenging to implement due to environmental constraints (as described in #16 Response to Inquiries). Therefore, the Plan focuses on reducing the overall demand for vehicle trips in the Midcoast. Reducing vehicle trips requires that people who would normally drive for a trip to switch to another mode, and keeping those who already walk, bike, or take transit to continue doing so. Therefore, the Plan includes proposal that would:

- Improve walking and bicycling infrastructure to make it easier to shift away from vehicles, especially for short trips (typically less than 3 miles).
- Increase opportunities for visitors to take transit to/from the Midcoast and while on the Midcoast.
- Reduce the potential demand for future travel by limiting local development through lot retirement and lot merger programs.
- Improve traffic flow and predictability through intersection improvements.

Roadway Design

What We Heard

There were a number of comments on roadway design, mostly about specific locations. General comments included support for safer driving infrastructure and a desire to see roadway projects that respect and maintain the rural character of the Midcoast. Specific locations where commenters provided input on roadway design included:

- Highway 1 in Montara: Include a project to convert the highway bidirectional center turn lane into dedicated left turn lane into 8th Street and dedicated left turn acceleration lane out of 8th Street as proposed in 2012 Highway 1 Safety and Mobility Study.

- Main Street: Extend Main Street in Montara to connect with Carlos Street in Moss Beach with a bridge over the creek.
- Carlos and 16th Street: Several commenters objected to closing off access to Carlos Street to and from Highway 1, but some commenters were supportive of connecting Carlos Street and 16th Street. One commenter noted that the Montara Water and Sanitary District recently replaced a sewer main in this location, so the costs of extending Carlos Street might need to include the relocation of the sewer main depending on the alignment of the extension.
- Carlos Street (commercial section): Several commenters do not want Carlos Street to become a one-way street in this section and objected to speed humps and digital feedback signs.
- Highway 1 in Moss Beach: One commenter suggested using a more rural edge treatment in this area instead of curb and gutters, and specifically to use tactile edge striping and colorized bike lanes and medians to create a consistent cross section (as suggested in the Highway 1 Safety and Mobility Study). Another suggestion for this area was to close or minimize the unrestricted direct highway access between Vermont Ave and Lancaster Blvd in the west-side commercial district.
- Moss Beach and Seal Cove, west of Highway 1: A couple of commenters suggested turning the streets leading to Fitzgerald Marine Reserve and the Moss Beach Distillery (Cypress Avenue, California Avenue, Virginia Avenue and Vermont Avenue) into one-way streets that allow for parking on one side and safe space for walking and biking on the other.
- Cypress Avenue in Moss Beach: One suggestion was to consider allowing only right turns onto Highway 1 and prohibiting left turns to help traffic flow. One suggested adding speed humps.
- Big Wave: One suggestion was to direct Big Wave traffic through Princeton to get to Highway 1 instead of Cypress Avenue.

Proposed Changes to Connect the Coastside

Connect the Coastside presents conceptual project and roadway designs to address existing and projected future traffic and safety concerns. Detailed roadway design will be determined as part of future community processes for project implementation. The project team will:

- Ensure consistency with recommendations from the Highway 1 Safety and Mobility study regarding edge treatments on Highway 1 in Moss Beach and converting the center-turn lane at Highway 1 and 8th Street in Montara into a left turn lane into 8th Street and acceleration lane out of 8th Street.
- Recommend a path with a guard rail separating the path from traffic along Highway 1 on the east side from 14th Street to 16th Street as an interim solution towards implementing the Parallel Trail here.
- Continue to recommend that Carlos Street be realigned to connect to 16th Street.
- Suggest traffic calming on Carlos Street but remove the specific recommendation for speed humps and digital feedback signs; remove the recommendations for re-routing the bus and for a bus stop at 16th Street and Carlos Street, and recommend reconfiguring the street to ensure consistent circulation patterns and to fit the Parallel Trail in the constrained corridor.

The intersection of Cypress Avenue and Highway 1 meets warrants for intersection control, which are important to improve safety. This is discussed further in the “Intersection Control” section.

As described above, Connect the Coastside does not recommend one-way streets generally due to limited access from neighborhoods to Highway 1.

Roadway Widening

What We Heard

Several commenters suggested adding lanes to Highways 1 and 92 to help alleviate traffic congestion, especially on the weekends. Others requested the Plan retain recommendations to not to widen any roadways and questioned whether Connect the Coastside's proposed Highway 92 widening to accommodate bicyclists and provide a passing lane near the quarry would be feasible due to environmental and right-of-way constraints. Stakeholders suggested the project team research these constraints and future operations of the quarry to confirm whether this recommendation is appropriate.

Proposed Changes to Connect the Coastside

Early drafts of Connect the Coastside recommended widening Highway 1 in certain locations. These were not supported by the community and would be limited due to environmental constraints (see Response to Inquiries #16). The passing lanes on Highway 92 near the quarry were initially recommended in the Plan due to the slow speeds of trucks entering the highway. The project team has researched the future operations of the quarry and environmental constraints and recommends removing the passing lanes from Connect the Coastside. The Plan will recommend widening Highway 92 shoulders where feasible to better accommodate bicyclists and allow for passing room in the event of an emergency, as well as left-turn/acceleration lanes at entrances to certain businesses on Highway 92.

Lighting

What We Heard

Several commenters stated the need for roadway lighting to improve the safety especially for those walking and bicycling in the evening along Highway 1, Airport Street, and at highway intersections. However, commenters also addressed the need to minimize light pollution and keeping dark skies to maintain the Coastside character.

Proposed Changes to Connect the Coastside

The project team will add more contextual information about roadway and pedestrian-scale lighting as part of Chapter 6 Implementation, including reference to dark skies. The project team will add information about lighting districts and necessary coordination with Caltrans for any new Highway 1 lighting. The San Mateo County Department of Public Works oversees several lighting districts on the Midcoast. Lighting districts are considered a County-governed special district, governed by the San Mateo County Board of Supervisors and operated by the County; more on these special districts, including when they were established is on the San Mateo County Local Agency Formation Commission (LAFCO) website. There is an established petition process for requests of additional lighting where there is already a lighting district in place, including an assessment by the Department of Public Works.

Parking

What We Heard

Many commenters shared concerns about existing parking conditions, including:

- Increased pedestrian crossings of Highway 1 at random locations as people park along the highway and cross to the ocean.
- Drivers circling and weaving in neighborhoods looking for parking.
- Additional traffic congestion along Highway 1 as people look for parking.
- Many informal parking lots, causing increases in neighborhood traffic and litter.

Commenters were divided on whether adding new parking or formalizing existing parking would be beneficial. Some commenters said that providing parking for visitors would increase the numbers of visitors, leading to more traffic congestion and concerns. Others requested formal parking to serve visitors to reduce neighborhood impacts, including at:

- Miramar to serve the Magellan Trailhead and beach, as Magellan Avenue and Mirada Road experience significant parking and traffic congestion.
- El Granada near Surfer's Beach and Sam's Chowder House paired with pedestrian crossing(s) to reduce the number of people parking alongside Highway 1. Some also suggested making parking illegal along Highway 1 on this stretch if a parking lot was provided.
- Near access points to Quarry Park.

Several commenters supported the addition of "park and ride" lots to make taking the bus easier for those who live further away from bus stops. Others were against adding park and ride lots, especially in Moss Beach at Highway 1 and Etheldore south. At this location, stakeholders were concerned about additional pavement and its associated impacts on water quality and wildlife habitat and questioned whether parking would actually be used since it is about 1 mile away from downtown Moss Beach. A stakeholder commented that pervious surfaces should be used if new parking lots are constructed.

Several commenters suggested using existing private parking lots for others when not in use by the owners. For example, the parking at El Granada Elementary School for weekend visitors and Harbor District parking for the public outside of crab and salmon season.

Proposed Changes to Connect the Coastside

The Local Coastal Program recommends formalized parking with clear signage for visitors and park and ride users. The Local Coastal Program includes several policies related to parking, including:

- 2.52(b) to provide public access parking that is not time restricted and signage indicating parking is available.
- 2.54 to encourage the use of transit by developing a park and ride facility near the intersection of Highways 1 and 92.
- 10.22(c) details specific criteria when developing or relocating new off-street parking facilities for shoreline access areas, such as preference for sites that are currently used for informal shoreline access parking.
- Table 10.6 which includes site specific recommendations for shoreline destinations, which specifies developing or expanding parking at locations including Montara State Beach, Point

Montara, at Vallemar Street and Juliana Avenue, Pillar Point Harbor, Princeton Beaches, and others.

The project team will remove the recommendation for the park and ride lot in Moss Beach at Highway 1 and Etheldore (south) and re-evaluate the viability and necessity of the other suggested parking locations currently in the draft Plan based on the above LCP policies, the 2015 Coastside Access Study, and parking inventory completed as part of Connect the Coastside. The project team will also look for opportunities for shared parking lots as a potential strategy to address park and ride and visitor parking needs. The project team will add an implementation action in Chapter 6 to seek funding for a community-based planning process to evaluate parking needs, potential locations, and to coordinate with SamTrans service if parking is intended for park and ride users. The project team will endeavor to collaborate with SamTrans to coordinate this effort with an exploration of the potential to increase commuter and visitor-serving transit service to and from the Midcoast. The project team will also add a recommendation to use green infrastructure as part of any proposed park and ride lot (see the County of San Mateo Green Infrastructure Plan), including potential retrofits of existing parking lots.

Signage

What We Heard

A few people commented on the benefits of proposed wayfinding signage to help residents and visitors alike, and suggested pointing out parking, trails, turnarounds, and painting the pavement with directional arrows. Another comment suggested working with technology companies like Waze to help with wayfinding in their applications.

Proposed Changes to Connect the Coastside

Connect the Coastside will continue to recommend wayfinding signage and include more information on potential locations and types of signage to inform a future wayfinding design and assessment. The project team will include a section on programmatic and transportation demand management strategies, which will include opportunities to use technology to address transportation needs.

Intersection Control (Signals, Roundabouts, Turns, Stop Signs)

What We Heard

Many comments addressed the proposed locations and types of intersection improvements in the Plan and stated different opinions on when and what should be implemented (if anything), and the benefits and drawbacks of different options.

Many comments on the need for intersection improvements shared a concern about safety, including:

- Safety for people walking and bicycling to cross the highway.
- High speed turns and long wait times to get on and off Highway 1 from side streets.
- Students walking and bicycling to school at intersections without stop signs.

Specific locations that were mentioned included:

- Intersections of Le Conte Avenue, Farallone Avenue, and East Avenue at Fifth Street
- Highway 1 & 16th Street/Carlos Street
- Highway 1 & Vallemar Street

- Highway 1 & California Avenue
- Highway 1 & Cypress Avenue
- Intersections near Fitzgerald Marine Reserve
- Airport Street near Pillar Ridge
- Highway 1 & the airport
- El Granada & Obispo Road
- Highway 1 & northern end of El Granada to enter Princeton
- Highway 1 & Frenchmans Creek Road (Half Moon Bay)
- Highway 92 & Crystal Springs

Some stakeholders shared their concerns and preference of one solution over another, especially with regard to roundabouts and traffic signals. Many commenters said that traffic signals would cause additional gridlock, traffic congestion, and increased traffic on neighborhood streets (the “Waze effect”) and cited poor signal timing as a potential contributor. Others felt roundabouts would create more impacts by requiring drivers to slow down during times of low traffic congestion, and that roundabouts might make it harder to get onto the highway during heavy traffic times because of fewer breaks in Highway 1 traffic. Some said they preferred roundabouts over traffic signals but were concerned about feasibility due to their high costs and preferred the shortest-term solution even if that meant a traffic signal. Others questioned whether intersection controls were needed at all to address concerns and requested acceleration lanes as a solution. Some commented that they felt roundabouts better fit Midcoast character compared to traffic signals.

Proposed Changes to Connect the Coastside

The project team recognizes many stakeholders’ desire for roundabouts and the potential benefits of roundabouts, including reduction in certain types and severity of crashes, improved traffic flow, reduced long-term operational costs, safe pedestrian crossings, and a solution more congruent with Midcoast character than traffic signals. There are also potential tradeoffs in implementing roundabouts due to topography, environmental constraints, necessary right-of-way costs, and higher overall project costs.

Connect the Coastside is a long-range transportation plan intended to meet Midcoast stakeholders’ long-term vision and meet both existing and projected future transportation needs. The project team has received feedback from stakeholders that it is critical to provide short-term solutions to meet today’s needs, in addition to visionary projects. The analysis in Connect the Coastside is a first step to inform solutions. The preliminary analysis in the Plan (see Signal Warrant Analysis in the Plan’s Appendix C) found that the intersection of Cypress Avenue and Highway 1 meets a peak hour signal warrant under *existing* conditions, whereas California Avenue and Highway 1 is projected to meet a peak hour signal warrant in the *future*. In order to implement any type of intersection control (signal, roundabout, stop sign) on Caltrans’ right-of-way, a project sponsor will have to complete an Intersection Control Evaluation (ICE) to fully understand the tradeoffs among the options. Signals may need to be installed given the *current* conditions and needs at intersections along Highway 1, pending the outcomes of ICEs and development projects that trigger that specific need. However, installation of a traffic signal does not and will not preclude the County and its partners from continuing to evaluate roundabouts as an intervention, especially for the long-term vision of the Coastside.

Speed (Traffic Calming)

What We Heard

There were many comments about speeding drivers creating unsafe travel conditions, especially for those walking and bicycling. Commenters reported speeding on Highway 1 in Moss Beach and Montara, Cypress Avenue, Airport Street, Carlos Street, and Obispo Road. Several commenters stated that there has been an increase in unsafe driving and speeding during periods of shelter-in-place when there are fewer cars on the road.

Suggestions to address speeding included:

- Lowering the speed limit on Highway 1, specifically near downtown Montara and Moss Beach.
- Speed humps or other traffic calming measures on Cypress Avenue, Airport Street, and Obispo Road.
- Additional traffic enforcement and more signage to alert drivers to slow down.

Proposed Changes to Connect the Coastside

The California Vehicle Code (Division 11, Chapter 7) dictates speed laws in California. The State of California Department of Transportation (Caltrans) can lower the speed limit on highways under certain conditions. Connect the Coastside will include a recommendation that Caltrans engage in the appropriate studies to determine whether the speed limit on Highway 1 can be lowered, especially near downtown Montara and Moss Beach.

Connect the Coastside includes recommendations to improve walking and bicycling on Cypress Avenue, Airport Street, and Obispo Road; these recommendations can also help reduce speeding. The San Mateo County Department of Public Works has a residential speed control program, which aims to curb excessive speeding in residential neighborhoods on County-maintained roadways. The project team will include a link to this program in the Plan and describe how residents can participate. The project team will also include descriptions of programs that can reduce speeding, such as traffic enforcement and safe driving campaigns. The Roadway Design section above also describes recommendations to address unsafe speeds.

Transit

Commenters highlighted the importance of transit to get around and to and from the Midcoast, especially for students, those who do not own automobiles, and older adults. The comments contained many suggestions for how to make transit better and a more viable option for those who don’t currently use it.

Bus Stops

What We Heard

Many commenters stated a need for improved amenities at bus stops, including shelters, benches, signs, trash cans, lighting, and more information in Spanish. Many requested benches and shelters that are unique to the Midcoast’s character, specifically in Montara at Main Street near Highway 1, Pillar Ridge Manufactured Home Park, and at Moon Ridge Apartments (south of Half Moon Bay). A few people suggested additional bus stops on Highway 92, in Linda Mar (Pacifica), and at Poplar Beach (Half Moon Bay).

Proposed Changes to Connect the Coastside

The project team will update the transit service section to match updated routes and timetable schedules. The next draft Plan will include a discussion about the importance of well-designed bus stop amenities and accommodating disabled people. The project team will share comments about Half Moon Bay and Pacifica with respective jurisdiction staff.

Bus Route & Frequency

What We Heard

Many commenters stated the need for more frequent buses and additional connections to destinations. Suggestions included:

- A local shuttle that goes up and down the coast to destinations (like beaches) so people can park once and take a shuttle throughout the Midcoast.
- Express bus service from the Midcoast to the Daly City or Colma BART stations and Caltrain in San Mateo.
- More frequent bus service that runs at least every 20 minutes along the Midcoast, especially from Montara to Half Moon Bay.
- More reliable bus service, especially for students traveling to Half Moon Bay or to schools on the bayside.
- More evening and weekend bus service.
- Return of route 294 which ran from the Midcoast to San Mateo.

Proposed Changes to Connect the Coastside

The project team will add the suggestions above to Connect the Coastside and will remove the recommendation to re-route SamTrans buses on Carlos Street and the added stop at 16th St.

School Buses

What We Heard

Many commenters cited the importance of transit for students, as school traffic was mentioned as a contributor to traffic congestion. Commenters stated that many students rely on SamTrans to get to school. Several highlighted the need to reinstate funding for school buses, providing additional SamTrans bus service during school hours, and ensuring bus service is safe for students.

Proposed Changes to Connect the Coastside

The project team will work with the San Mateo County Office of Education to clarify costs associated with providing school buses and add recommendations for SamTrans to increase frequent bus service during school hours.

Land Use

Policies (Lot Merger, Lot Retirement, other)

What We Heard

Those who commented on land use were supportive of policies that limit development in the Midcoast. Some questioned why the lot merger program had not already been implemented, asked how the Witt and Abernathy court decisions affected the program, and asked for a cost assessment for implementation. Other suggestions included:

- Request for more detail on the lot merger and lot retirement policies, including expanding lot retirement beyond subdivisions, tying lot retirement to commercial development, requiring that lot retirement and the new subdivision occur within the same Midcoast community, implementing the lot retirement and merger programs at the same time, and making the lot retirement and merger programs mandatory.
- New policies such as using mitigation fees to buy development rights on unbuilt residential parcels, a conservation lot purchase program, and avoiding development in environmentally sensitive areas.

Proposed Changes to Connect the Coastside

The draft Plan identifies the implementation of a lot merger program as a priority action to be completed soon after the adoption of Connect the Coastside, and this recommendation will be retained in the next update. The project team will update the Plan to provide more detailed information on the proposed lot merger and lot retirement programs. The project team will also update the Plan to recommend that the voluntary period for the lot merger program be shortened to one (1) year. No other changes to the lot merger and lot retirement programs and no new land use policies are being considered for the next update of the plan.

Development

What We Heard

Many commented about the connection between proposed new development on the Midcoast (such as the potential Cypress Point project in Moss Beach) and recommendations in Connect the Coastside. Commenters described concerns about recommendations in the plan being driven by new development and overall density changes. A few commenters highlighted the importance of developing affordable housing on the Midcoast.

Proposed Changes to Connect the Coastside

Connect the Coastside is a long-range transportation plan intended to address traffic from future development generally and provide a wider range of mobility options, and is not tied to specific development projects. Proposed new development may be required to conduct project transportation analysis based on the County's Traffic Impact Analysis guidelines and may propose or be required to implement mitigations for impacts; those mitigations could help implement Connect the Coastside but do not necessarily have to align. The project team will include more information about the development process as part of the background in the Plan. Connect the Coastside's constrained non-residential and residential development forecasts take into account the projects that were under review from 2013 to 2015.

Planning Process

Many commenters asked clarifying questions about the planning process for Connect the Coastside, including requests for more background on the Plan's development, community engagement, phasing infrastructure projects, cost estimates, funding strategies, and implementation.

Plan Development

What We Heard

Several commenters questioned whether the Plan meets the requirements of the Local Coastal Program Policy 2.53 and commented that the Plan needs additional policy recommendations beyond what is currently included to comply. Others requested clarity on the Plan's development process and scope of the Plan. Another suggestion was to include a commitment to review and update the plan every 5 years.

Proposed Changes to Connect the Coastside

The next draft will include an infographic with a timeline and the various products developed as part of this planning effort.

The project team will expand the discussion in Section 1.3 about the Local Coastal Program (LCP), policies relevant to Connect the Coastside, including Policy 2.53:

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 project team will also update Chapter 6 - Plan Implementation to include a discussion on the potential for future amendments of the Local Coastal Program based on Connect the Coastside's recommended projects and programs. Connect the Coastside will provide direction for amending the LCP in the future, but it will not recommend specific LCP policies, as any amendments to the LCP will require a separate process. The project team will include a recommendation in the Plan to report to the Midcoast Community Council and Board of Supervisors every 5 years on plan implementation and make adjustments as directed.

Community Engagement

What We Heard

Several commenters stated concern about the County's decision to continue Connect the Coastside planning and engagement work due to COVID-19, citing concerns about the lack of in-person engagement. Some appreciated the May and June virtual meetings and their structure, stating that breakout sessions worked well to provide feedback, whereas others would have preferred a large group discussion. Several commenters noted that the conversations were not as rich or as in-depth as they could have been because breakout room facilitators and notetakers did not have content expertise. Commenters suggested:

- Future meetings with public comment period and large group discussions that allows for back and forth conversations with staff and other stakeholders.
- Joint community engagement sessions with other agencies, such as sanitation, so stakeholders gain a deeper understanding of agency roles, responsibilities, and have to attend fewer meetings.
- Including a timeline of previous community engagement efforts in the Plan with a description of outcomes and decisions from those efforts.

Proposed Changes to Connect the Coastside

The project team will add a section to the Plan that describes the community engagement process to develop Connect the Coastside with a timeline, including recommendations for future project-level implementation engagement. The next phase of outreach for the Plan includes workshops with the Midcoast Community Council and Planning Commission, where the public will be able to provide comment in a large-group forum.

Phasing

What We Heard

Many commenters identified the need to include more specific timelines and a phased implementation approach to infrastructure projects in the Plan; some said they do not want to wait 20 years to see important safety improvements come to fruition. Several commenters highlighted the need to be opportunistic in the Plan's implementation approach, taking into account new development and grant opportunities. Suggestions included:

- Prioritize implementation of land use policies and programs.
- Include a timeline for implementation that shows which projects can be completed in the short, medium, and long-term.
- Identify interim solutions for long-term infrastructure projects.
- Prioritize projects based on ease of implementation so improvements can happen sooner rather than later.
- Include metrics to evaluate how well a project is meeting its intended objectives and mechanisms to halt or reverse choices as needed.
- Highlight the next steps needed to implement the Transportation Impact Mitigation Fee and clarify the requirement for a nexus study.

Proposed Changes to Connect the Coastside

Chapter 6 of Connect the Coastside includes a list of Project Implementation Priorities (Table 29) that identifies the likely short, medium, and long-term projects. This list will be updated based on the changes to the overall proposed project list, estimated ease of project implementation, and community priorities. The project team will add discussion about a phased implementation approach, including potential short-term interventions to address safety concerns.

Most of the recommended projects in Connect the Coastside are not under County control and will require collaboration with and approval from Caltrans for implementation. Chapter 6 currently includes discussions of the partners required and potential next steps for implementation, and both discussions will be expanded and updated to provide more detail. The County is already looking for opportunities to implement projects, such as through the 2020 State Highway Operation and Protection Program.

Development impact fees, like the proposed Transportation Impact Mitigation Fee, are a way of collecting a proportional share of funds from new development to offset transportation impacts due to that new development. In order to implement the Transportation Impact Mitigation Fee as described, the County will need to document the "nexus" or linkage between the fees being charged to new development, the benefits to mitigate impacts, and cost allocation. These legal requirements are in California Government Code section 66000-66025 and commonly called the "Mitigation Fee Act" or "AB 1600 requirements." The project team will provide more background on next steps in Chapter 6, including to seek funding to conduct the nexus study.

Costs & Funding

What We Heard

Several commenters stated that the Plan's proposed project cost estimates are too high to realize implementation and highlighted a need for balance between recommended project type and cost. Several commenters asked for clarity about who will be responsible for paying for implementation, and if the Plan proposed taxing residents. Some commenters requested the Plan match proposed projects to funding sources and implementation mechanisms at the local level such as Measures K and W.

Proposed Changes to Connect the Coastside

The Plan does not include a proposal to tax residents; it does include a proposal to study and establish a Transportation Impact Mitigation Fee, which would apply to *new* development. The County, along with its partners (like Caltrans), will need to actively seek grant funding and/or allocate existing funding sources to implement the Plan's projects. Several projects, especially complex ones like the Parallel Trail, will need to undergo separate community engagement, planning, design, and engineering to achieve implementation; more detailed cost estimates will be produced during these future phases. Some projects may be funded and/or implemented with new development. The project team will expand the discussion of funding sources in Table 23: Potential Funding Sources for Project Categories to further clarify which projects could match each source; Measures K and W will be added to this table with discussion.

Coordination

What We Heard

Many commenters highlighted the importance of coordination with other agencies for Plan implementation and the need for Connect the Coastside to match other planning efforts. Comments included:

- Ensure the Plan takes into account concurrent planning efforts including Plan Princeton and the Unincorporated San Mateo County Active Transportation Plan.
- Clarify the potential impacts of new development and how they will be coordinated with Connect the Coastside.

- Expand the discussion of potential partners, including the role of the California Coastal Commission.
- Coordinate with special districts to identify things like sewer lines that may be within a project area.

Proposed Changes to Connect the Coastside

The project team will expand the discussion of other concurrent planning efforts (like Plan Princeton and the Unincorporated San Mateo County Active Transportation Plan) throughout the Plan to better show consistency in recommended projects, planning context and relationship among plans, and if the recommended projects in Connect the Coastside come from another source. Since Connect the Coastside is a long-range planning document, discussion about current new or proposed developments will not be included unless relevant to clarify what is incorporated into the development forecast. The project team will expand on the role of the California Coastal Commission in the implementation chapter. The implementation chapter will be updated to discuss the need to coordinate with special districts in the planning area when planning and implementing a project.

Planning Area

What We Heard

A few people asked for the Plan to include the cities of Half Moon Bay and Pacifica.

Proposed Changes to Connect the Coastside

Connect the Coastside's study area includes the City of Half Moon Bay, whose future forecasted development informed the traffic analysis, which then informed the proposed projects in Connect the Coastside. Development forecasts do not include the City of Pacifica. The County of San Mateo does not have jurisdiction over Pacifica or Half Moon Bay, and therefore does not include specific recommendations for either city. The project team is working closely with Half Moon Bay to share data and information from the respective planning processes. The project team will share relevant comments with each jurisdiction.

Data

What We Heard

Several commenters asked questions about the transportation and land use data used in Connect the Coastside, including where data came from, how it was used to develop the recommendations, and opportunities to update the data. Some expressed concern that COVID-19 has changed travel patterns and travel demand, and the future of transportation is unpredictable and cannot be accurately forecast in Connect the Coastside. There were also differing opinions about whether to use the constrained (2040) buildout forecast or maximum buildout forecast for the analysis. Some people feel that 2040 is too short of a timeframe whereas others said that the maximum buildout forecast is unrealistic. Some commented that the Local Coastal Program Policy 2.53 requires that the maximum buildout forecast be used.

Comments regarding traffic analysis suggested the following:

- Clarifying the source data and discussing how it is used in the traffic analysis to develop existing and forecasted delay.

- Updating the source data for the traffic analysis to 2019, pre-COVID levels.
- Consolidating data tables in the plan to show level of service and delay index calculations for existing, constrained (2040) buildout, and maximum buildout forecast.
- Clarifying the impacts of local versus visitor-related traffic.
- Showing how individual projects' impact on delay.

Comments regarding development forecasts suggested the following:

- Using consistent terminology and better explaining the constrained development forecast (2040) and maximum building forecast.
- Clarifying the assumptions for the development forecasts and whether they take into account sewer and water capacity.
- Updating the development forecasts so they take into account Half Moon Bay's recent forecasts and updating the data and maps to address rural lands that have been recently acquired and will no longer be developed.

Proposed Changes to Connect the Coastside

The project team will:

- Include additional infographics, text, references, and footnotes to clarify assumptions for both the traffic analysis and development forecasts.
- Consolidate tables to better show the variations in delay and level of service under each scenario.
- Update maps to show rural lands that have been acquired and can no longer be developed.
- Conduct global edits to the Plan for consistent terminology for development forecasts.

Recent traffic counts conducted in 2017 and 2019 at several locations along Highway 1 do not indicate differences in traffic volumes that would necessitate substantive changes to the traffic projections in the Plan or that additional traffic analysis would change the conclusions and recommendations in the Plan. The Plan includes weekend traffic counts, which is a good indicator of additional visitor-related traffic. The project team will look for opportunities to include additional qualitative or quantitative data to make a distinction between visitor and local trips.

The 2014 analysis of the maximum buildout projection, together with projected traffic, showed that meeting current LCP level of service standards would require widening Highway 1 in all possible Midcoast locations. This solution was not supported by the public, as noted in the 2015 Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Report. In addition, it was impossible to predict what year maximum buildout would occur, if ever. It was also impossible to properly analyze traffic under maximum buildout because the only available traffic model (C/CAG/VTA model) is designed to project traffic to 2040 only. For these reasons, the community requested that a more realistic development forecast be prepared and that the impacts of projected growth on mobility be analyzed. This "constrained" development forecast incorporated "in the pipeline" projects, such as Big Wave and included conservative development assumptions (for example, 148 units for the north Moss Beach affordable housing site). Since the constrained development forecast was prepared, County staff has monitored issued development permits in the Midcoast and observed that development is tracking well under the constrained forecast projections. For these reasons, the project team does not believe that re-doing the buildout forecast or traffic analysis will yield a different outcome. The project team is meeting with City of Half Moon Bay staff to address different development forecasts and will address any differences as part of the Plan update.

Overarching Concerns or Considerations

Planning Goals

What We Heard

In general, community members in attendance at the May and June 2020 virtual meetings supported the goals of the Plan, particularly Goal 3: Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic and Goal 4: Respect the character of Midcoast communities and protect coastal resources. Several participants noted that many of the goals are connected. For example, the existing character of the Midcoast paired with spread out destinations makes it challenging to use transportation modes other than driving. One stakeholder suggested revising Objective 2.1 to evaluate the likely residential development potential and Objective 2.4 to evaluate the implementation of a mandatory lot retirement program.

Goal 1	Improve existing traffic and roadway conditions on the Midcoast.
Goal 2	Lessen the cumulative traffic impacts from future development on the Midcoast.
Goal 3	Increase opportunities for walking, biking, and riding transit on the Midcoast to provide an alternative to motor vehicles and reduce roadway traffic.
Goal 4	Respect the character of Midcoast communities and protect coastal resources.
Goal 5	Maintain and improve access to coastal resources for both residents and visitors.

Proposed Changes to Connect the Coastside

Connect the Coastside addresses impacts of forecasted residential and non-residential development due to their collective impact on traffic conditions in the Midcoast. The project team will add more to the Plan about Local Coastal Program Policy 2.52 and its connection to Connect the Coastside, such as employing transportation demand management strategies as a requirement for new development that triggers these requirements, consistent with the County's transportation demand management ordinance. The Plan will note than any changes to the ordinance will be implemented within the plan area. The project team will look for opportunities to clarify impacts due to forecasted residential development. As described above, the lot retirement program will not be recommended to be mandatory. In addition to the above, additional changes to goals are described in the Environmental Sustainability and Accessibility sections below.

Environmental Sustainability

What We Heard

Several commenters stated a need to incorporate more about the environment and sustainability in the Plan, as it is an important piece of Coastside character. Suggestions included: adding a section on the history of the Coastside that acknowledges natural resources, conservation, and wildlife; discussing environmentally friendly and sustainable building materials; and addressing litter and maintenance.

Proposed Changes to Connect the Coastside

The project team will update the:

- Plan's introduction to better describe the history, existing setting and natural resources of the Midcoast .
- Goals of Connect the Coastside to explicitly incorporate environmental sustainability.
- Plan's implementation chapter to recommend incorporation of green infrastructure into proposed projects and add references to the Green Infrastructure Plan.
- Plan's implementation chapter will reference LCP policies protecting sensitive habitats and wildlife and scenic resources.

Emergency Response and Evacuation

What We Heard

Many commenters shared concerns about emergencies, such as fires and tsunamis and a need for the Plan to address evacuation for residents and visitors alike. Suggestions included adding more on the County's approach to emergency evacuations, additional projects to address brush and tree clearance along Highway 1, and analyzing the impact of the Plan's proposed projects on ability to evacuate.

Proposed Changes to Connect the Coastside

The project team will update the Plan to:

- Add more information about the County's approach to emergency response, planning and evacuation.
- Recommend vegetation clearance along Highway 1, which will also create additional space for walking and biking.
- Incorporate data on emergency response if available.

Visitors

What We Heard

A few commenters requested that Connect the Coastside describe how the Plan makes the Coastside more accessible to those living outside of the Midcoast and preserves access to coastal resources.

Proposed Changes to Connect the Coastside

The project team will add more information about the California Coastal Commission and its role in ensuring the coast is accessible to Californians, and contextual information about visitors to the coast.

Accessibility

What We Heard

Many commenters highlighted the need to create a more accessible coastside, with facilities and programs that take people of different ages and abilities into consideration. Both youth and seniors mentioned that they face particular transportation challenges. For example, many rely on other modes of travel besides a car to get around. Suggestions included:

- Incorporating and addressing programs like on-demand transit service for older adults and youth.
- Ensuring proposed infrastructure projects are designed with accessibility in mind, such as bikeways and trails wide enough to accommodate three-wheeled bicycles and accessible bus stops.
- Adding language to the Plan about creating an age-friendly Midcoast.

Proposed Changes to Connect the Coastside

The project team will revise Goal 3 and its objectives to include creating an age-friendly Midcoast and add a section in the implementation chapter that references design guidance for accessibility.

Errors and Clarifications

What We Heard

Several people found errors in the January 2020 Public Working Draft of Connect the Coastside and provided suggestions including updating:

- Project descriptions and maps for consistency; for example, the Pillar Point Bluff Trail has been resurfaced and is no longer packed dirt.
- Project source descriptions and correcting places where the Highway 1 Safety and Mobility Improvement Study is erroneously referenced.
- SamTrans routes and service time frequencies.

Proposed Changes to Connect the Coastside

The project team will incorporate the edits cited above.

Moss Beach Evaluation 10/20/20 Meeting – Follow-up Notes and Resources

Post-meeting Survey

https://www.surveymonkey.com/r/Moss_Beach_Meeting_evaluation

Attendees

Name	Organization	E-mail
Steve Monowitz	San Mateo County (SMC), Planning & Building	smonowitz@smcgov.org
Joe LaClair	SMC, Planning & Building	jlaclair@smcgov.org
Katie Faulkner	SMC, Planning & Building	kfaulkner@smcgov.org
Chanda Singh	SMC, Planning & Building	Csingh@smcgov.org
Janneth Lujan	SMC, Planning & Building	jlujan@smcgov.org
Angela Montes	SMC, Planning & Building	amontescardenas@smcgov.org
Joel Slavit	SMC, Office of Sustainability	jslavit@smcgov.org
Julia Malmo-Laycock	SMC, Office of Sustainability	jmalmolaycock@smcgov.org
Khoa Vo	SMC, Department of Public Works	dvo1@smcgov.org
Brae Hunter	SMC, Office of Supervisor Don Horsely	bhunter@smcgov.org
Carrie Dallman	SMC, Office of Supervisor Don Horsely	cdallman@smcgov.org
Ellie Dallman	SMC, County Manager's Office	edallman@smcgov.org
Len Erickson	Midcoast Community Council	lenericksonmcc@gmail.com
Michelle Weil	Midcoast Community Council	michelleweilmcc@gmail.com
Dave Olson	Midcoast Community Council	daveolsonmcc@gmail.com
Lisa Ketcham	SMC Planning Commission	lisa.ketcham@comcast.net
Josh Pilachowski	DKS Associates	josh@dksassociates.com
Aditi Meshram	DKS Associates	aditi.meshram@dksassociates.com
Lance Hall	Caltrans District 4	lance.d.hall@dot.ca.gov
Mohammad Suleiman	Caltrans District 4	mohammad.suleiman@dot.ca.gov
Whitney Lawrence	Caltrans District 4	whitney.lawrence@dot.ca.gov
Elliot Goodrich	Caltrans District 4	elliot.goodrich@dot.ca.gov
Josephine Hsai	Caltrans District 4	josephine.hsai@dot.ca.gov
Dan Wilkins	Town of Truckee	dwilkins@townoftruckee.com

Takeaways

California and Highway 1

- Conceptual (10% designs) for signal and roundabouts do not appear to have fatal flaws; signal warrant analysis may not be appropriate mechanism for evaluating need for roundabout
- Address turning radius/access on Carlos, south of California Ave (roundabout), particularly for large trucks
- Traffic calming needed on SR-1 approaching the roundabout
- Orient crosswalks to increase visibility for people walking (roundabout)
- Square the signal crossing to shorten the crossing for pedestrians
- Evaluate options for direct Parallel Trail crossing at Carlos and SR-1, instead of routing away from intersection (roundabout)
- Dropping bike lanes from the roundabout design is appropriate
- Check the designs against the Caltrans Highway Design Manual to see if any exceptions are needed
- Evaluate signal performance with multi-lane approaches; recommend adding multi-lane approaches and downstream weave
- Address drainage concerns in area between Carlos St and SR-1, north of California Ave (red-legged frog habitat)
- Address left-turns for reoriented Wienke Way from northbound SR-1; left-turn bay into Wienke is likely possible with roundabout, not with signal
- Evaluate mitigation trade-offs regarding impacts to endangered species habitat
- Review opportunities to connect Wienke into roundabout, e.g., split Wienke terminus and allow southbound entry and incorporate connection from roundabout to Carlos Street (examples below)
- No other conflicting planned projects in this area were identified
- Detailed design issues can and should be resolved during the PSR-PDS process

Example of local street intersection near adjacent roundabout (McIver Crossing/Donner Pass Road Roundabout - example from Dan Wilkins)

Example of traffic calming on high speed roundabout approach (SR 89 north/ Prosser Dam Rd/ Alder Drive - example from Dan Wilkins)

Example of left turn pocket on roundabout departure leg (Martis Valley Drive/Brockway Road Intersection - example from Dan Wilkins)

Cypress Avenue and Highway 1

- Address impacts to private lots. Access rights for parcels are an important consideration in the roundabout design.
    - Determine access rights of 3 parcels (flag lot and adjacent lots) on east side
    - Consider how design could be altered to change deflection and reduce conflicts with 3 parcels and to increase separation and location options for parallel trail
    - Maintain driveway access by shortening island
    - May have to purchase undeveloped lots that are impacted
- Document any exceptions to Caltrans Highway Design Manual, including frontage road and access for emergency vehicles
- Evaluate signal performance with multi-lane approaches
- Multi-lane roundabout is likely appropriate; could consider designing single-lane with ability to expand to multi-lane in the future when traffic warrants (ROW for multi-lane roundabout would have to be acquired upfront)
- Check roundabout design size (130’ v. 110’), and consider modifying deflection
- Address safety concerns with culvert/drainage alongside Cypress
- Consider creating right turn lane from Cypress onto SR-1 in the interim
- Consider whether entire roundabout needs to be two-lane, some single-lane portions may be sufficient
- Detailed design issues can and should be resolved during the PSR-PDS process

- Move bike lane egress point south to avoid conflict with private driveway

Parallel Trail

- Conceptual design does not appear to have any fatal flaws
- Advancing pedestrian safety and access between 14th and 16th St on SR-1
    - There is a requirement for a minimum 5 ft. separation between travel lane and trail, unless positive separation is provided
        - Elliot Goodrich (Caltrans) will see if precedent exists to narrow separation between trail and roadway (examples shared: Bay Trail in San Carlos near Whipple and airport; Bay Trail in Albany Richmond along 580; west shore of Lake Tahoe at 89)
    - Suggestion for sidewalk with shoulder as potential option from 14th - 16th streets due to available ROW; note that 15th St does not exist (paper street)
    - Long-term vision is to have pile-supported structure for path
    - Caltrans SHOPP project cannot add guardrail on east side at 14th - 16th at this time; project has already been scoped and funded
- Trail crossings will be evaluated individually, must be ADA complaint, and should be set back as far as possible on each side street to minimize potential conflict with vehicles coming on/off of Hwy 1 and queues
- Aim for direct trail crossings when possible for pedestrian/bicyclist path of least resistance
- Quick-build/short-term are not common at this time; encroachment permit process will be appropriate mechanism for smaller improvements
    - If County pursues quick-build proposals, it can share with Mohammad Suleiman (Caltrans) for pre-review before encroachment permit office
- Request to consider near term improvements:
    - On Carlos between Etheldore and 16th: sharrows and decomposed granite path
    - On SR-1 between 14th - 16th: trim trees, put down decomposed granite, and install guardrail; can guardrail be installed at existing edge of pavement?
- Khoa Vo (SMC Public Works) can help provide a unit cost on a metal beam guardrail

2' separation from back of curb (Class 1 Bike Trail 5-1/2 miles south of Tahoe City on State Route 89 - example from Dan Wilkins)

Action Items

- **Josh Pilachowski** (DKS Associates) to check the designs against the Highway Design Manual to document any exceptions
- **Elliot Goodrich** (Caltrans) will see if precedent exists to narrow separation between trail and roadway
- **Khoa Vo** (SMC Public Works) to provide a unit coast on a metal beam guardrail to Joe LaClair (SMC Planning & Building)
- **Connect the Coastside Project Team** will incorporate design considerations generated from the meeting into the revised Plan (November 2020)

APPENDIX B – PROJECT REPORTS

Connect the Coastside Interim Reports

The following table is a list of interim reports produced by the County and its consultant team. Documents are available on the Connect the Coastside webpage: https://planning.smcgov.org/connect-coastside-documents-meeting-materials

Name	Publication Date	Description	Direct Link
Buildout Analysis and Traffic Projections Report	November 2014	Existing transportation conditions and level of service analysis, existing and projected land use and buildout, and forecasted travel conditions and deficiencies	https://planning.smcgov.org/sites/planning.smcgov.org/files/PUBLIC%20DRAFTS%20November%2020%202014%20Buildout%20Analysis%20and%20Traffic%20Projects%20Report.pdf
Evaluation of Transportation Alternatives to Address Buildout Deficiencies Report	April 2015	Potential project alternatives to address identified transportation deficiencies	https://planning.smcgov.org/sites/planning.smcgov.org/files/PUBLIC%20DRAFTS%20April%209%202015%20Evaluation%20of%20Transportation%20Alternatives%20to%20Address%20Buildout%20Deficiencies%20Report.pdf
Development Forecast for the San Mateo County Transportation Management Plan Report	November 2015	Summary of methodology and results of assessment of potential development in Connect the Coastside study area	https://planning.smcgov.org/sites/planning.smcgov.org/files/PUBLIC%20DRAFTS%20November%202015%20Development%20Forecast%20for%20the%20San%20Mateo%20County%20CTMP%20Report.pdf
Evaluation of Recommended Alternative to Address Potential Future Transportation Deficiencies Report	March 2016	Recommended projects to address transportation deficiencies	https://planning.smcgov.org/sites/planning.smcgov.org/files/PUBLIC%20DRAFTS%20March%2010%202016%20Evaluation%20of%20Recommended%20Alternative%20Report.pdf
Response to Connect the Coastside Virtual Meeting Inquiries Report	August 2020	Responses and clarifications to questions asked during May and June virtual meetings	https://planning.smcgov.org/sites/planning.smcgov.org/files/CTC%20Virtual%20Mtgs%20Response%20to%20Inquiries_web.pdf
Meeting Outreach Summary Report	September 2020	Summary of 2020 Connect the Coastside engagement efforts	https://planning.smcgov.org/sites/planning.smcgov.org/files/CTC-2020-Outreach-Summary-Report-and-Appendices.pdf?v=2

APPENDIX C – PLANNING AND POLICY CONTEXT

Connect the Coastside Planning & Policy Context

MONTARA MOSS BEACH EL GRANADA COMMUNITY PLAN (1978)

Link:
https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/General%20Plan%20-%20Area%20Plans%20Summary.pdf - This is only a summary of the original plan. Complete original plan available in paper form.

Copy on the MCC website: http://plan.sanmateo.org/preface.html

Description

Area plan for Montara, Moss Beach, & El Granada. Part of the General Plan. Set's goals and policies for growth. Provides some historical background on the midcoast. This plan limited development to areas which are already subdivided, zoned for development, and served by utilities ("urban infill").

Policies or Programs

Circulation p. 22:

Circulation System

- Design circulation systems to discourage through-traffic in residential areas.
- Employ the criteria of the County Road Design Manual relating to protection of natural features, conservation of resources, and neighborhood quality preservation in new road construction.
- Construct bicycle lanes as a portion of arterials, and major and minor lanes thorough-fares
- Encourage SamTrans, the San Mateo County Transit District, to increase the level of bus service from the community to Half Moon Bay and the Bayside cities.

Road Standards

- Construct arterials and major and minor thoroughfares, as defined in the Community Plan, to County Road Standards in urbanized areas of the community.
- Construct residential streets in residential areas according to Modified Road Standards, which allow for reduced road widths and special design considerations.
- Employ design measures which blend with the rural character of the community: walkways of asphalt, exposed aggregate pavement, and/or colored cement (earth colors or black), walkways separated from roadways, preservation of existing trees by curved roadways, winding pathways and walkways, parking bays, etc.
- Locate paths and walkways on one side of streets only in residential areas, except in locations where there is heavy pedestrian traffic, i.e. near schools, parks, etc.
- Provide parking bays instead of parking lanes wherever possible and desirable.

Trails p. 26:

- Incorporate bicycle lanes with new road construction for major and minor thoroughfares.
- Construct a bicycle path along the Coast Highway, for intra-community as well as regional access.

Conservation & Open Space p. 29

- Establish limits for urban growth based on geological hazards, floodplains, tsunami hazard areas, and prime agricultural soils.
- Encourage orderly and balanced development by limiting growth to the infill of already subdivided and partially developed areas.
- Prevent development of prime agriculture soils, steep slopes, and ridgetops.
- Limit services provided by utility districts to urbanized areas.

Community Appearance:

- Encourage CalTrans to landscape portions of the Coast Highway in urbanized areas of the community. (P. 38)

GENERAL PLAN (1986, 2013, 2015)

Link:

Overview Background & Issues

Policies

Description

The General Plan provides information on existing natural and man-made conditions of the physical environment. These local conditions can then be analyzed and problems and opportunities concerning resource management and community development can be addressed. The plan identifies key plans, regulations and agencies that affect planning decisions. The plan makes recommendations for improving this coordination. The plan indicates the type of development that the County desires, where it should be located and how it should be regulated.

Policies or Programs

VEGETATIVE, WATER, FISH AND WILDLIFE RESOURCES POLICIES

GOALS AND OBJECTIVES

1.1 Conserve, Enhance, Protect, Maintain and Manage Vegetative, Water, Fish and Wildlife Resources Promote the conservation, enhancement, protection, maintenance and managed use of the County's Vegetative, Water, Fish and Wildlife Resources.

1.2 Protect Sensitive Habitats Protect sensitive habitats from reduction in size or degradation of the conditions necessary for their maintenance.

DEFINITIONS

1.5 Definition of Vegetative Resources Define vegetative resources as plants and plant communities, including timber but excluding agricultural crops.*

1.8 Definition of Sensitive Habitats Define a sensitive habitat as any area where the vegetative, water, fish and wildlife resources provide especially valuable and rare plant and animal habitats that can be easily disturbed or degraded. These areas include but are not limited to: (1) habitats containing or supporting rare or unique species; (2) riparian corridors; (3) marine and estuarine habitats; (4) wetlands; (5) sand dunes; (6) wildlife refuges, reserves, and scientific study areas; and (7) important nesting, feeding, breeding or spawning areas.

1.9 Definition of Rare or Unique Species Define rare or unique species as any plant or animal that is determined to be rare, endangered, threatened, unique to the County and adjacent areas or protected by Federal or State law and State and County EIR guidelines.

1.19 Definition of Development Define development as the construction, reconstruction, conversion, relocation or enlargement of any structure; the division of a parcel of land into two or more parcels; any mining, excavation, landfill or land disturbance including grading; and changes in land uses.

GENERAL POLICIES

1.21 Importance of Sensitive Habitats Consider areas designated as sensitive habitats as a priority resource requiring protection.

REGULATION OF DEVELOPMENT

1.23 Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources

a. Regulate land uses and development activities to prevent, and if infeasible mitigate to the extent possible, significant adverse impacts on vegetative, water, fish and wildlife resources.

b. Place a priority on the managed use and protection of vegetative, water, fish and wildlife resources in rural areas of the County.

1.24 Regulate Location, Density and Design of Development to Protect Vegetative, Water, Fish and Wildlife Resources

Regulate the location, density and design of development to minimize significant adverse impacts and encourage enhancement of vegetative, water, fish and wildlife resources.

RESOURCE PROTECTION

1.25 Protect Vegetative Resources

Ensure that development will: (1) minimize the removal of vegetative resources and/or; (2) protect vegetation which enhances microclimate, stabilizes slopes or reduces surface water runoff, erosion or sedimentation; and/or (3) protect historic and scenic trees.

1.27 Protect Fish and Wildlife Resources

Ensure that development will minimize the disruption of fish and wildlife and their habitats.

VISUAL QUALITY POLICIES

GOALS AND OBJECTIVES

4.1 Protection of Visual Quality

a. Protect and enhance the natural visual quality of San Mateo County.

b. Encourage positive visual quality for all development and minimize adverse visual impacts.

c. Encourage citizen awareness and interest in San Mateo County’s scenic resources.

4.2 Protection of Shorelines

a. Protect and enhance the visual quality of and from shorelines of bodies of water including lakes, reservoirs, streams, bays, ocean, sloughs.

b. Maximize the preservation of significant public ocean views.

4.3 Protection of Vegetation

Minimize the removal of visually significant trees and vegetation to accommodate structural development.

4.4 Appearance of Rural and Urban Development

Promote aesthetically pleasing development in rural and urban areas.

DEFINITIONS

4.12 Definition of Scenic Corridors

Define a scenic corridor as land adjacent to a scenic road right-of-way which, when seen from the road, provides outstanding views of natural landscapes and attractive man-made development.

GENERAL POLICIES

4.15 Appearance of New Development

a. Regulate development to promote and enhance good design, site relationships and other aesthetic considerations.

4.29 Trees and Vegetation

a. Preserve trees and natural vegetation except where removal is required for approved development or safety.

b. Replace vegetation and trees removed during construction wherever possible. Use native plant materials or vegetation compatible with the surrounding vegetation, climate, soil, ecological characteristics of the region and acceptable to the California Department of Forestry.

c. Provide special protection to large and native trees.

SCENIC ROADS AND CORRIDORS

4.40 Scenic Roads

Give special recognition and protection to travel routes in rural and unincorporated urban areas which provide outstanding views of scenic vistas, natural landscape features, historical sites and attractive urban development.

4.41 Coordination of Scenic Roadway Standards and Design

Coordinate standards of roadway and right-of-way design, improvements, and maintenance with cities in order to maintain a consistent approach in applying scenic conservation standards.

4.44 Road Design and Construction

a. Require the design and construction of new roads and road improvements to be sensitive to the visual qualities and character of the scenic corridor. This includes width, alignment, grade, slope, grading, and drainage facilities.

b. Encourage the construction and maintenance of scenic turnouts, selective clearing of vegetation to open new vistas, development of picnic and rest areas at selected locations along the scenic road system.

TABLE 4.6 DESIGNATED STATE AND COUNTY SCENIC ROADS

County Designated Routes

Cabrillo Highway - (from Junipero Serra Freeway to northern limits of the City of Half Moon Bay)

PARK AND RECREATION RESOURCES POLICIES

GENERAL POLICIES

6.5 Access to Park and Recreation Facilities

b. Encourage access to the park and recreation system by transportation means other than private automobiles, where feasible.

6.39 Trail System Coordination

a. Support, encourage and participate in the development of a system of trails that link existing and proposed park and recreation facilities within this County and adjacent counties.

b. Particularly encourage the development of: trails that link park and recreation facilities on San Francisco Bay to those on the Pacific Coast; multi-use trails where appropriate and trails in County lands under management by other public agencies. Ensure that these trails do not adversely affect adjacent land uses.

URBAN LAND USE POLICIES

8.5 Definition of Urban Community

Define Urban Communities as those large, populated unincorporated areas which contain a wide range of residential land use densities and a mix of land uses which provide services to surrounding areas and meet, in part, the internal shopping, employment and recreational needs of the community residents.

8.9 Designation of Existing Urban Communities

Designate North Fair Oaks and Montara-Moss Beach-El Granada as existing Urban Communities.

8.12 General Plan Land Use Designations for Urban Areas

a. Adopt the land use designations, and amendments thereto, of the: (1) Local Coastal Program, (2) Emerald Lake Hills Community Plan, and (3) North Fair Oaks Community Plan and other future area plans as the proposed General Plan land use designations in these urban areas.

b. Reflect these adopted area plan land use designations on the General Plan Proposed Land Use Maps.

c. Use the policies of the General Plan Urban Land Use Chapter to provide guidance when: (1) designating the remaining portions of urban areas on the General Plan Proposed Land Use Maps, (2) conducting land use studies and/or preparing future area plans, and (3) amending the land use designations of existing area plans.

WATER SUPPLY POLICIES

10.1 Coordinate Planning

Coordinate water supply planning with land use and wastewater management planning to assure that the supply and quality of water is commensurate with the level of development planned for an area.

TRANSPORTATION POLICIES

12.2 Definition of Complete Streets

Define Complete Streets as an approach to transportation that describes an integrated, multimodal transportation system which equally supports all types of transportation, including pedestrian, bicycle, and vehicular traffic.

12.4 Definition of Complete Streets Projects

Define Complete Streets Projects as: Including but not limited to sidewalks, shared-use paths, bicycle lanes, bicycle routes, paved shoulders, street trees and landscaping, planting strips, accessible curb ramps, crosswalks, refuge islands, pedestrian signals, signs, street furniture, bicycle parking facilities, transit priority signalization, and other features assisting in the provision of safe travel for all users, such as traffic-calming devices, bulb-outs, curb extensions, chicanes, and road diets.

GOALS AND OBJECTIVES

12.7 Create and maintain Complete Streets that serve all categories of transportation users and goods, providing safe, efficient, comfortable, and convenient travel along all streets through an integrated, balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the General Plan.

12.8 To the extent possible, plan for accommodating future transportation demand in the County by using existing transportation facilities more efficiently, or improving and expanding them before building new facilities.

12.9 Provide for a balanced and integrated transportation system in the County which allows for travel by various modes and easy transfer between modes.

12.10 Plan for increasing the proportion of trips using public transit or ridesharing.

12.11 Balance and attempt to minimize adverse environmental impacts resulting from transportation system improvements in the County.

12.12 Promote the development of energy-conserving transportation systems in the County.

12.13 Coordinate transportation planning with adjacent jurisdictions.

AUTOMOBILE TRAVEL

12.14 Additional Capacity When providing additional capacity for automobile traffic where needed, give priority to upgrading and expanding existing roads before developing new road alignments.

12.15 Rural Road Improvements In rural areas, where improvements are needed due to safety or congestion, support improved traffic control measures that balance the needs of all users and provide safe travel, implementing measures such as signing, lane markings, and speed controls, and the construction of operational and safety improvements, such as adequate passing lanes, elimination of sharp curves, lane widening, or paved shoulders.

12.16 Urban Road Improvements In urban areas, where improvements are needed due to safety concerns or congestion, support the construction of interchange and intersection improvements, additional traffic lanes, turning lanes, redesign of parking, channelization, traffic control signals, or other improvements while enhancing the functionality of travel routes for all transportation users.

12.18 Recreational Traffic to the Coastside Seek methods to mitigate the impact of peak recreational traffic to and along the Coastside.

12.20 Financing Local Road Improvements

Utilize all available techniques for funding local road improvements in unincorporated areas, including assessment districts, developer contributions, and County road funds. Ensure road improvements are consistent with adopted land use plans and area plans.

12.21 Local Circulation Policies

In unincorporated communities, plan for providing:

a. Maximum freedom of movement for all transportation users and adequate access to various land uses;

b. Improved streets, sidewalks, bicycle routes, landscaping, shared-use paths, and other site-appropriate design features that enhance the safety and usability of transportation networks in developed areas;

e. Access for emergency vehicles;

f. Safe and efficient bicycle and pedestrian travel;

g. Access by all transportation users, including persons with disabilities, seniors, children, and youth, to public buildings, shopping areas, hospitals, offices, and schools;

h. Prioritization of accessibility to transit services and to routes and turnouts for public transit;

j. Coordination of transportation improvement with adjacent jurisdictions.

12.22 Local Road Standards

Allow for modification of road standards for sub-areas of the County, which respond to local needs and conditions as identified in area plans.

COMPLETE STREETS

12.29 Context-Sensitive Street Design

Coordinate with stakeholders during street planning and design to maintain sensitivity to local conditions and ensure a strong sense of place that meets the needs of transit users, including consideration of a diversity of Complete Streets projects.

12.30 Integration with Regional Complete Streets Planning

Coordinate transportation and street projects with local and regional plans for bicycle, pedestrian, transit, and related multimodal plans designed to support Complete Streets.

12.31 Existing Street and Network Connectivity

Incorporate Complete Streets infrastructure into existing streets to improve the safety and convenience of users, accommodate all transportation users, and increase connectivity across jurisdictional boundaries and for existing and anticipated areas of development.

PUBLIC TRANSIT AND RIDESHARING

12.32 SamTrans Service

Encourage SamTrans to continue to work toward improving service levels on both local and mainline routes through reevaluation and expansion of routes, increased service to the Coastside, provision of more satellite parking facilities, and evaluation of smaller buses for local routes.

12.33 Recreational Service

Encourage increased transit service between the Bayside and the Coastside during summer months and special events in order to help meet recreational travel demand.

BICYCLE AND PEDESTRIAN TRAVEL

12.44 Bicycle Trails in Rural Areas

Support the development of bicycle trails in rural and Coastal areas.

12.45 Bicycle Storage Facilities

Promote the provision of bicycle lockers and other storage facilities at transit stops, schools, shopping areas and other activity centers.

12.49 Pedestrian Bridges

Encourage CalTrans to provide pedestrian bridges and connections in areas where State highways have divided communities.

HOUSING ELEMENT

Policy HE 21 Support Infrastructure Adequate to Support Housing Development. Continue to support infrastructure expansion and identify opportunities for County assistance with infrastructure improvement in specific areas.

ENERGY AND CLIMATE CHANGE ELEMENT

Goal 9: Identify and prepare for climate change impacts.

Policy 9.2: Integrate ongoing assessment of climate change vulnerabilities into the planning process.

Implementing Strategy 9.2D: Incorporate potential climate change impacts into the decision-making process when siting new facilities and prioritizing repairs and improvements to critical infrastructure.

Goal 10: Enhance the adaptive capacity of natural and man-made systems.

Policy 10.1: Encourage the location and design of new development, remodels, or expansions to anticipate and mitigate climate change risks.

Implementing Strategy 10.1B: Promote the site selection and design of critical facilities that consider site-specific vulnerabilities to climate change.

Implementing Strategy 10.1.C: Promote the location of new critical infrastructure facilities in areas not subject to severe climate change impacts, such as storm surge, flooding, or inundation.

Implementing Strategy 10.1E: Consistent with statewide standards and guidance from the California Coastal Commission, require all new projects in the coastal zone to account for sea level rise and the potential for increasing rates of erosion.

SAN MATEO COUNTY TRAILS MASTER PLAN (2001)

Link:
https://parks.smcgov.org/sites/parks.smcgov.org/files/documents/files/Trails%20Master%20Plan.pdf

Description

The County Trails Plan includes proposed trail routes, an inventory of existing trails, county trails policies, design guidelines, and use and management guidelines. Includes the California Coastal Trail.

Policies or Programs

- Policy 6.5.1 Trail access should be provided for a range of user capabilities and needs (including persons with physical limitations) in a manner consistent with State and Federal regulations. The detailed design and management plans for each individual trail shall conform to the most current Americans with Disabilities Act Accessibility Guidelines for Outdoor Developed Areas where conditions permit. Trail maps and guides shall indicate specific areas that are accessible for people with disabilities or wheelchair users.
- 6.38.2 The County trail system should be linked to provide for regional trails including the San Francisco Bay Area Ridge Trail, the San Francisco Bay Trail, the California Coast Trail, and the Juan Bautista de Anza National Historic Trail.
- D.G. 1.2 Setback Trails shall be sited as far away from occupied dwellings as practical. Trails not within planned road rights-of-way within the County shall be set back a minimum distance from occupied dwellings in accordance with Table 4.1. Where setbacks specified in Table 4.1 are not feasible, potential noise and privacy impacts must be evaluated and reduced by use of berms, fencing, landscaping, and other feasible and compatible means, if necessary. (p.29)
- D.G. 1.5 Trail Alignment Trail alignments should be selected that minimize intersections with motorized vehicles. Where feasible, trail grades should be separated from roadway grades at crossings. Where separated crossings are not possible, at-grade crossings must be designed to equally consider vehicular and trail user safety. New trail crossings at state highways shall be designed and located at existing signalized or stop-control intersections or where signalized or stop-controlled intersections will be provided concurrent with the new trail. (p.30)
- D.G. 1.6 Usage Locate trails to promote and allow as many uses as possible, if feasible. At the intersections of multiple-use trails or where off-street bicycle trails intersect with on-street bicycle routes not at a road intersection, there should ideally be a 15-foot turning radius and 25-foot sight clearance between the two trail routes.
- D.G. 1.10.2.1 Sensitive Habitat. To the maximum extent feasible, trail alignments shall avoid impacts to sensitive habitats, including habitats for special status plants and animals. Trail alignments shall be evaluated on a case-by-case basis by a professional biologist to identify impact avoidance measures or mitigation measures for biotic impacts. Consideration shall be given to:

  Rerouting the trail • Periodic closures • Revegetation prescriptions including replacement vegetation based on habitat acreage or plant quantity • Buffer plantings • Discrete barrier fencing that accommodates wildlife passage • Other appropriate measures

Removal of native vegetation shall be avoided as much as possible. The appropriate resource agencies shall be contacted regarding any trail alignments that may impact sensitive habitats, special status species, or their habitat. Ensure plant replacement is native to the area. (p.31)

- D.G. 2.1.2 Multi-Use. Multiple-use, natural tread, double track trails should be designed as two-way paths. Where paved, the paved portions of a multiple-use trail should have an optimum width of 12 feet with a center stripe and minimal 2-foot, flush gravel shoulders, or clear space on each side of the trail. (p.34)
- D.G. 2.3.1 American With Disabilities Act (ADA). Where feasible, the design of County trails should recognize the intent of the ADA and should emphasize accessibility for everyone. To determine feasibility and the degree to which trails will be designed for whole-access, the overall terrain conditions of the area surrounding the trail route will be referenced. As an initial reference, three general accessibility zones are: Valley Floors/Coastal Plain; Foothills; and Canyon/Mountain. Table 4.2 defines the general slope characteristics of each of these zones. The final definition of each zone as it pertains to a particular trail alignment should be made only after detailed site investigations have been conducted.

Projects

- CALIFORNIA COASTAL TRAIL (R3) The California Coastal Trail would follow the San Mateo County coastline from Thornton Beach to Año Nuevo State Reserve. Primarily a bluff-top trail, this trail would connect numerous state and county parks and beaches along the coast, a distance of approximately 50 miles. Some sections of the Coastal Trail, primarily within the Half Moon Bay city limits, are already in place and suitable for multiple use. The Coastal Trail would connect with the Bay Area Ridge Trail by the existing Montara Mountain Trail, as well as by other trails proposed in this plan (pg. 12)
- P10 Highway 92 Trail. Extending from Interstate 280 to Half Moon Bay, the Highway 92 Trail would connect the Ridge Trail to both the Coastside and Bayside communities. This highway corridor could accommodate a multi-use trail, as well as bike lanes on the highway. (pg. 16)

Maps and Photos

- https://parks.smcgov.org/sites/parks.smcgov.org/files/documents/files/Regional-Trail-Map-Plan.pdf

MIDCOAST RECREATIONAL NEEDS ASSESSMENT (2002)

Link: https://parks.smcgov.org/sites/parks.smcgov.org/files/documents/files/Mid-Coast%20Recreational%20Needs%20Assessment%20Plan.pdf

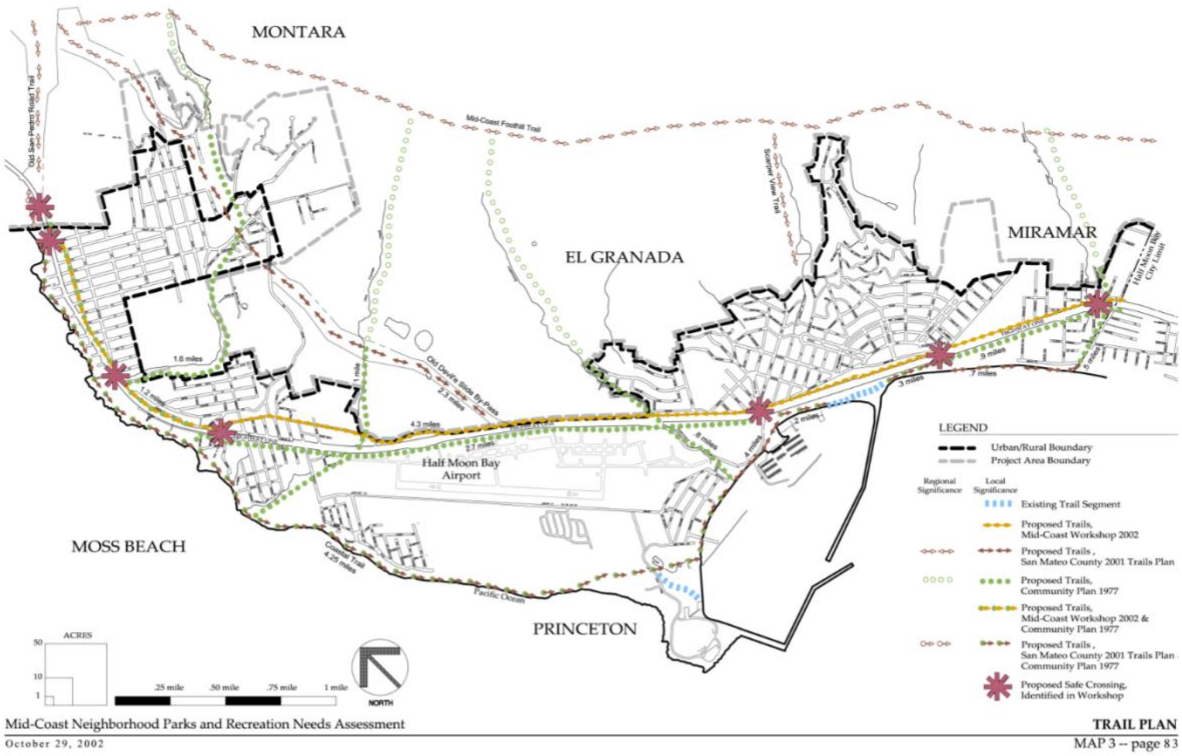
Description

Needs assessment and report to provide the Mid-Coast with a strategy for creating and implementing a system of neighborhood parks connected to a central community center by a system of paths and trails. The purpose of this assessment is to assist the Mid-Coast community in moving forward with their vision of a park and recreation system and outline a strategy for their implementation of the overall plan.

Policies or Programs

- GOAL 3: TRAILS SYSTEM Develop a network of pedestrian and bicycle trails to link individual components of the park system and provide better non-motorized access throughout the Mid-Coast. (p.16)
    - Objective 3.1: Develop a trail system in cooperation with the County, Golden Gate National Recreation Area (GGNRA), Mid-Peninsula Regional Open Space District (MPROSD), Coastal Conservancy, Peninsula Open Space Trust (POST), State Parks, Half Moon Bay, Caltrans and others. (p.16)
        - 3.1.1 Prepare a trail system assessment to establish a system of bikeways, hiking trails and bike lanes in accordance with State and County standards.
        - 3.1.2 Include Class I (separate bike path), Class II (on-street bicycle lane), and Class III bikeways (shared traffic lane with signage) in the overall system consistent with the March 2000 San Mateo County Comprehensive Bicycle Route Plan.
        - 3.1.4 Provide a local trail system that connects parks, residential areas and regional trails and facilities.
        - 3.1.5 Encourage and support any and all agencies as required to provide a number of safe crossings to Highway 1.
    - Objective 3.2: Develop multi-use recreation trails and paths which link the community and accommodate the Mid-Coast community. (p.16)
        - 3.2.2. Use linear features such as roads, riparian corridors, creeks, bluff tops, and topography to integrate trail system.
        - 3.2.3 Coordinate trail planning with County departments, the County Trails Plan 2001, Half Moon Bay, Caltrans and others as noted in 3.1.
        - 3.2.4 Include small sitting and picnic areas in the design of the trail system.
- GOAL 4: IMPLEMENTATION
        - Policy 4.1.3 Explore and institute development impact fees for new and remodel construction on the Mid-Coast. (p.17)

MAPS AND PHOTOS



HIGHWAY 1 SAFETY & MOBILITY STUDY PHASE 1 (2010)

Link: https://planning.smcgov.org/highway-1-safety-and-mobility-study

Link to File:
https://planning.smcgov.org/sites/planning.smcgov.org/files/Highway%201%20Safety%20and%20Mobility%20Improvement%20Study_PhaseI.pdf

DESCRIPTION

The Highway 1 Safety and Mobility Improvement Study is a community-based transportation plan with recommended improvements to Highway 1 in the unincorporated communities of Princeton, El Granada, and Miramar. The effort was funded through a Caltrans Community-Based Transportation Planning Grant in partnership with the Local Government Commission. The Plan was developed through an extensive community process in 2009 that included a focus groups, community workshops, walk audits, and a design charette. Many of the recommendations in Connect the Coastside are from this study.

POLICIES OR PROGRAMS

- Recommends consistent lane striping depending on context
  - Typical Rural Section: 12’ travel lanes with shoulders 6-8’ wide (page 13)
  - Typical Fringe Section: 12’ travel lanes, 6’ shoulder, valley gutter, and sidewalk as needed (page 13)
  - Typical Village Section: 12’ wide lanes (or less), curb and gutter, with bike lanes and sidewalks as appropriate
- General recommendation to add walkways and bikeways, with key features to increase safety such as medians, tighter curb radii, improved lighting at intersections, and others
- Plan includes a series of recommendations that range from roundabouts, Highway 1 realignment, pedestrian crossings of Highway 1, and others.

PROJECTS

Street	To (Cross Street 1)	From (Cross Street 2)	Proposed Project	Page #
Capistrano Rd	Highway 1	Princeton (community)	Class II Bike lanes	28
Airport St	Princeton (community)	Moss Beach (community)	Class II Bike lanes	28
Coastline	Pillar Point Harbor	Princeton (community)	Class I Path	28
Coastal Trail		West side of Highway 1 through Miramar	Coastal Trail	28
Avenue Alhambra and Obispo	El Granada	Santiago Ave	Class II Bike lanes	28
Highway 1	Half Moon Bay trail	Mirada Drive, Santiago Ave	Class I Path / trail	28

Culvert under Highway 1	Furtado Lane	Miramar Dr	Replace metal culvert with precast concrete system to create trail connection and connect to Arroyo de en Medio	29
Alameda Ave	Miramar (community)		Bike Boulevard + Bike Bridge to connect east/west sections over ravine + Trail from east terminus of Alameda to Coast Trail/Balboa Blvd	29
Mirada Road / Medio Road	Miramar (community)		Connection to Coastal Trail from HMB section on east side of SR-1 b/w Nurserymen's service road and Highway 1	
Highway 1	North of Capistrano Road		Rural	30
Highway 1	Capistrano Rd (N)	Capistrano Rd (S)	Fringe	30
Highway 1	Capistrano Rd (S)	Coronado St	Extensive short and long-term conceptual designs, including realignment of SR-1. Generally village. Short-term suggests remove informal parallel parking and organized diagonal parking east of SR-1 with one-way NB access way	32
Highway 1	Surfer's Beach, Sam's Chowder House		Ped xings with median islands	34
Highway 1	Capistrano, Coronado		Ped crossing improvements, including extension of curb and gutter, restriped xwalks, corner ramps	35
Highway 1	Coronado St	500 feet south of Roosevelt Blvd	Village	42
Highway 1	Roosevelt Blvd	Frenchmans Creek	Fringe	42

Maps and Photos

Observations Map (page 7)

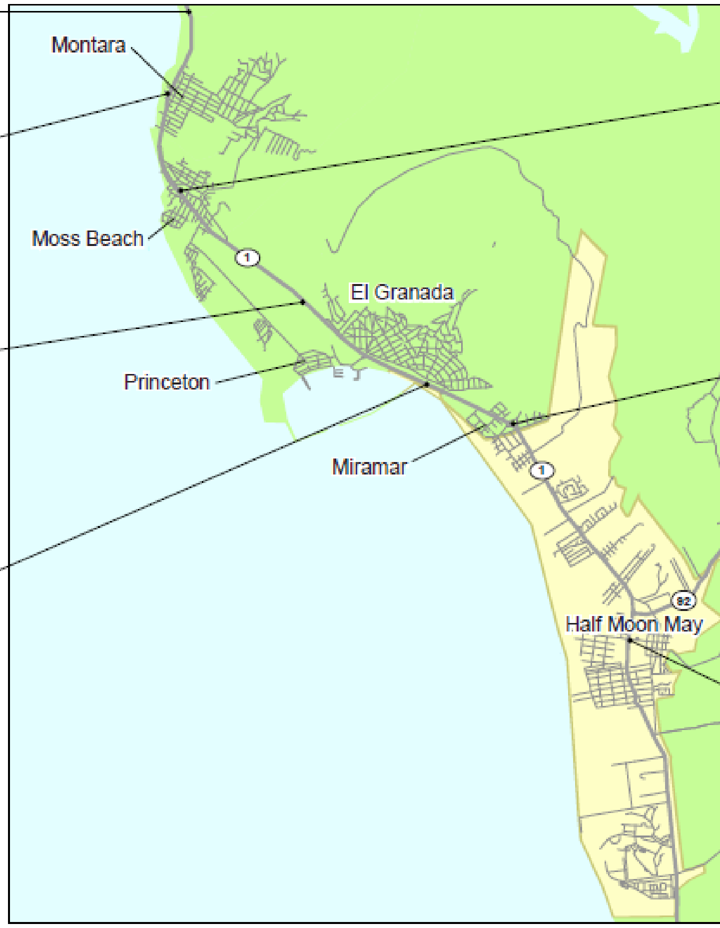
Highway 1 on San Mateo Midcoast

North of Montara
- Grade changes
- Minimal shoulders
- Relatively sharper curves
- Bike/Vehicle conflicts
- Recreation parking conflicts

Montara
- Speeds
- Access management
- Highway adjacent parking loaded development
- Side street sight distance

Airport Segment
- Open cross section
- Gentle alignment
- Adjacent agricultural use and access
- Undefined airport access intersection
- Inconsistent number of lanes northbound
- Speed transition needs to El Granada

El Granada
- Coastal erosion
- Speed management
- High pedestrian crossing demand
- Varying traffic volumes and speeds
- Turning traffic at driveways and streets
- Sight distance challenges at cross streets
- Sight triangles and vertical alignment



General Corridor Observations and Issues

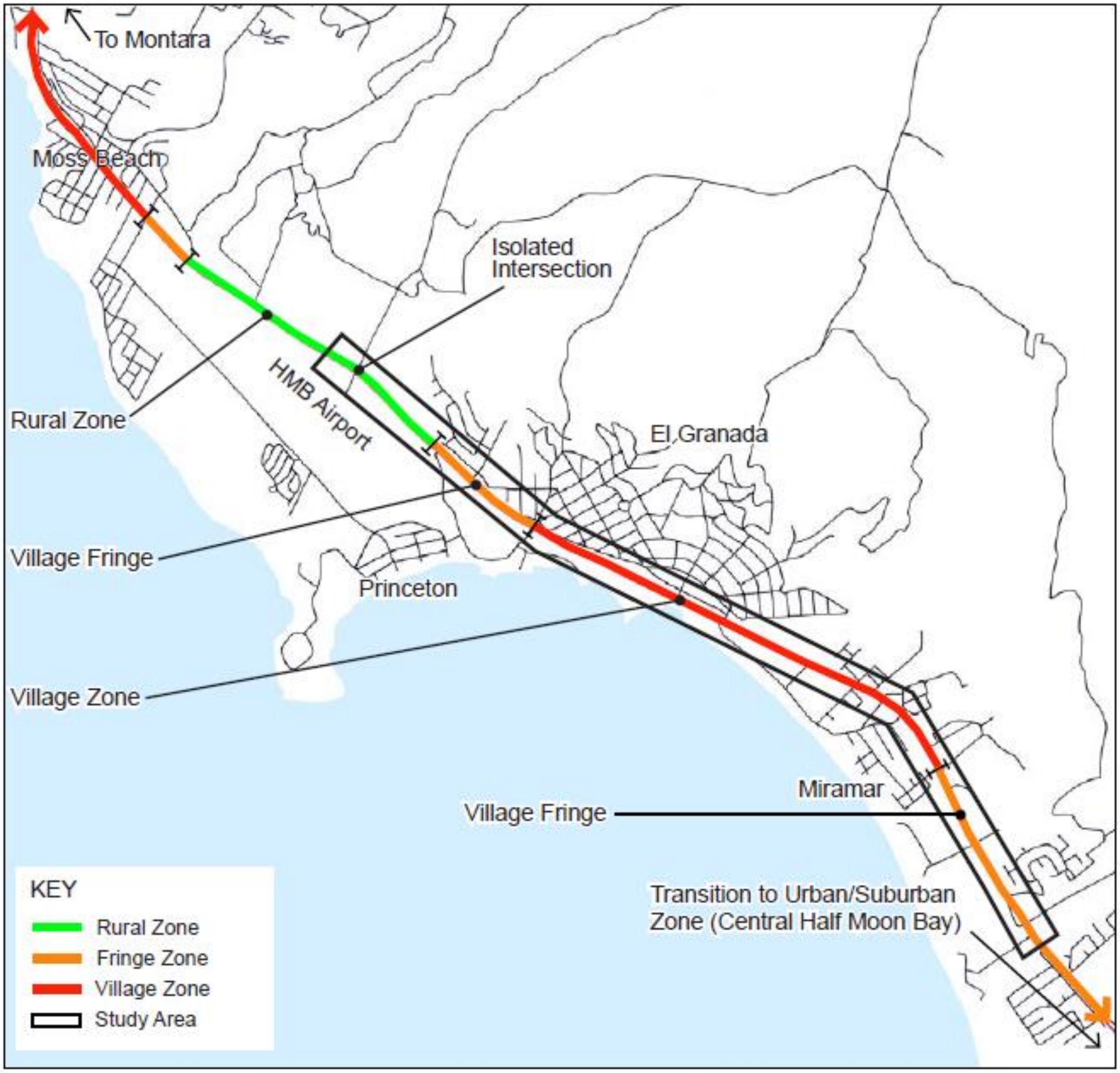
Moss Beach
- Speeds
- Number of public street accesses
- Crossing traffic
- Inconsistent roadway edge
- Underdeveloped frontage "Main Street"
- Storm water treatment opportunity

Miramar to Half Moon Bay
- Transitional segment
- Varying traffic volumes and speeds
- Relatively high number of accesses
- "Isolated" signalized intersection
- Turning traffic at driveways and streets
- Sight distance challenges at cross streets
- Sight triangles and vertical alignment

Half Moon Bay
- Heaviest volumes
- Signalized intersections
- Significant highway crossing demand
- Inconsistent edge treatments
- Inconsistent typical cross section south of Kelly Avenue
- Unbalanced treatments to Main Street

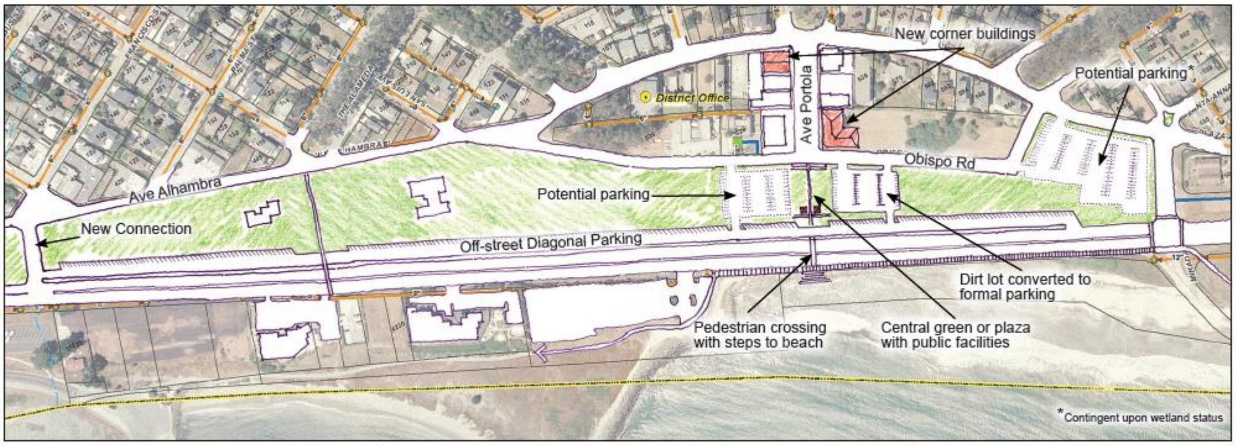
7 Local Government Commission

Context Zones Map (page 9)



Connectivity and Mobility Framework Map (page 24)

SR-1 Short-term Improvement (page 34)



HIGHWAY 1 SAFETY & MOBILITY STUDY PHASE 2 (2012)

Link: https://planning.smcgov.org/highway-1-safety-and-mobility-study

Link to File:
https://planning.smcgov.org/sites/planning.smcgov.org/files/SMM_Ph_2_Study_Final_LR.pdf

DESCRIPTION

Similar to the Highway 1 Safety and Mobility Study Phase 1, Phase 2 assesses vehicle, pedestrian, and bicycle safety and mobility challenges in the Montara and Moss Beach area, from Half Moon Bay Airport to Devil's Slide area. The Plan was accepted by the San Mateo County Board of Supervisors on November 20, 2012. Engagement took place from March through May 2011 and included advisory group meetings, focus groups, community meeting, design charette, and presentation. Many of the recommendations in Connect the Coastside are from this study.

PROJECTS

Street	To (Cross Street 1)	From (Cross Street 2)	Proposed Project	Page #
Highway 1	Gray Whale Cove		Parking lot improvements, including LT bay, acceleration lanes, and marked crosswalk north of the lot	37
Highway 1	Montara State Beach (near McNee Ranch Parking)		Parking facilities on either side of the highway, parking lot and Rancho Corral de Tierra access. Improved parking lot, formalized parallel parking (existing and proposed parking supply on p.42)	40
Highway 1	2nd St		Ped crossing of the Coastal Trail with median islands. Coastal trail crosses from east side to west side	44
Highway 1	7th St	9th St	Raised medians from north of 7th St through South of 9th St, left-turns consolidated at 8th, restricted turning movements at 9th St, and pedestrian crossing 7th St	46
Main St	7th St	9th St	Sidewalks, crosswalks, and traffic calming improvements	46
Highway 1	9th St		Roundabout	47
Highway 1	16th St / Montara Lighthouse		Raised or painted median with left turn bay northbound onto Lighthouse, RT only onto highway from Carlos St, Ped Xing and refuge island at Lighthouse driveway Long-term: Pedestrian over-crossing at Lighthouse intersection	50

Highway 1	Vallemar/Etheldore	Marine Blvd	Several options for Moss Beach, including medians, roundabouts (Etheldore, Cypress)	54
Parallel Trail alignment on Etheldore				60-61
Cypress Avenue	Dead end		Trail that leads to Coastal Trail	62

Maps and Photos

Corridor Observations and Issues (page 11)

Corridor Observations and Issues

North of Montara State Beach
- Grade changes and curves
- Sections with narrow shoulders
- Bicycle use
- Pedestrian crossing conflicts at beach and trail access areas
- Informal shoulder parking

Montara
- Relatively high number of accesses
- No sidewalks, sections with narrow shoulders
- Sight distance challenges at cross streets
- Pedestrian crossing conflicts
- Turning vehicle conflicts at Lighthouse and Hostel

Moss Beach
- Relatively high number of accesses
- Cross traffic
- Frontage street
- No sidewalks
- Pedestrian/bike crossing conflicts

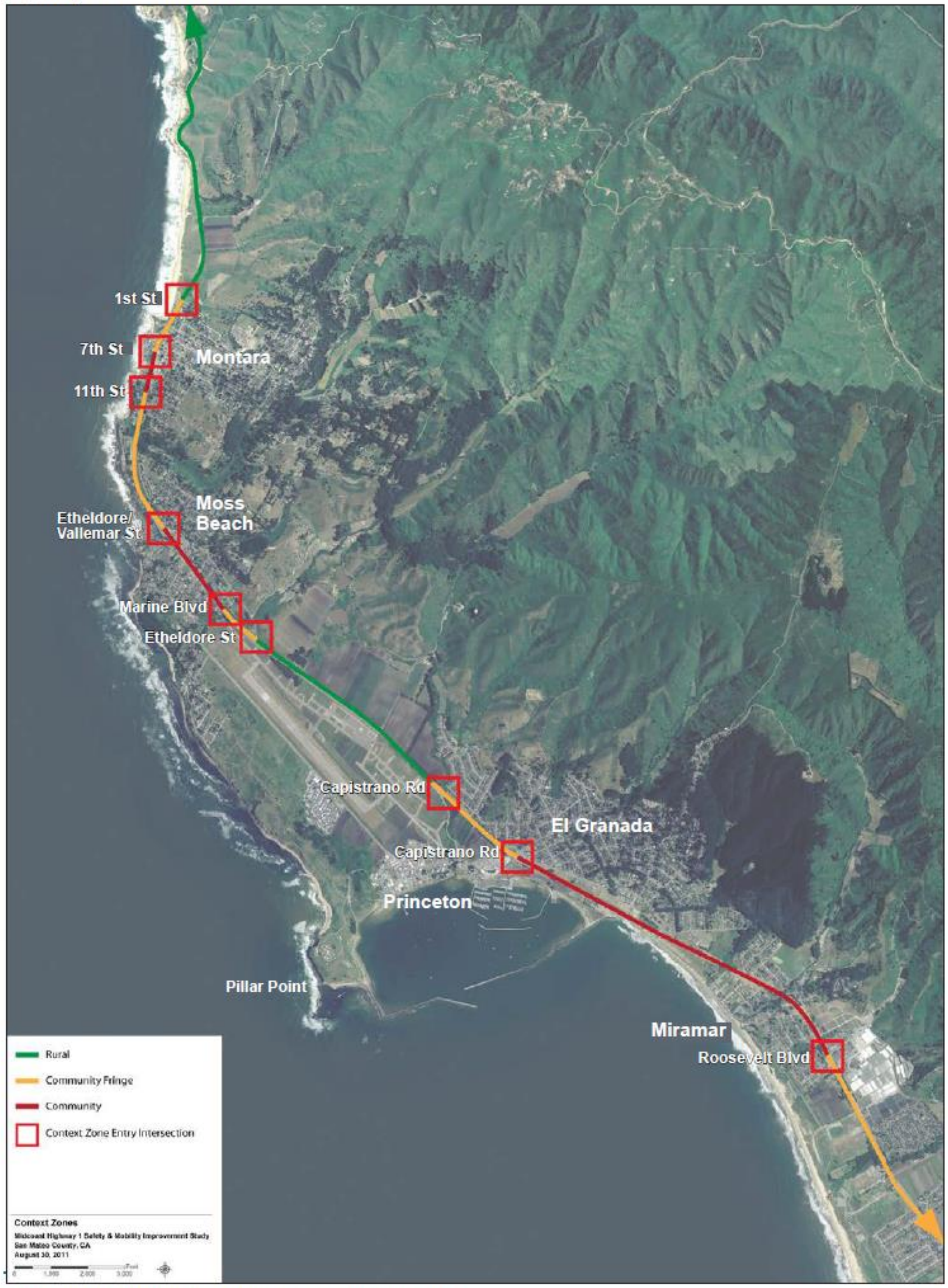
El Granada
- "Surfer's Beach" erosion
- High pedestrian/bike use, crossing demand
- No sidewalks
- Two signalized intersections
- Peak hour, weekend and seasonal congestion
- Informal shoulder parking

Miramar to Half Moon Bay
- Relatively high number of accesses
- Turning traffic at driveways and streets
- Sight distance challenges at cross streets
- Signalized intersection

Highway 1 Safety and Mobility Improvement Study 11

Zones (page 13)

Highway 1 Context Zones



Highway 1 Safety and Mobility Improvement Study 13

Existing Posted Speed Limits (page 17)

Existing Posted Speed Limits

The image above shows the current speed zones with posted limits through the study area.

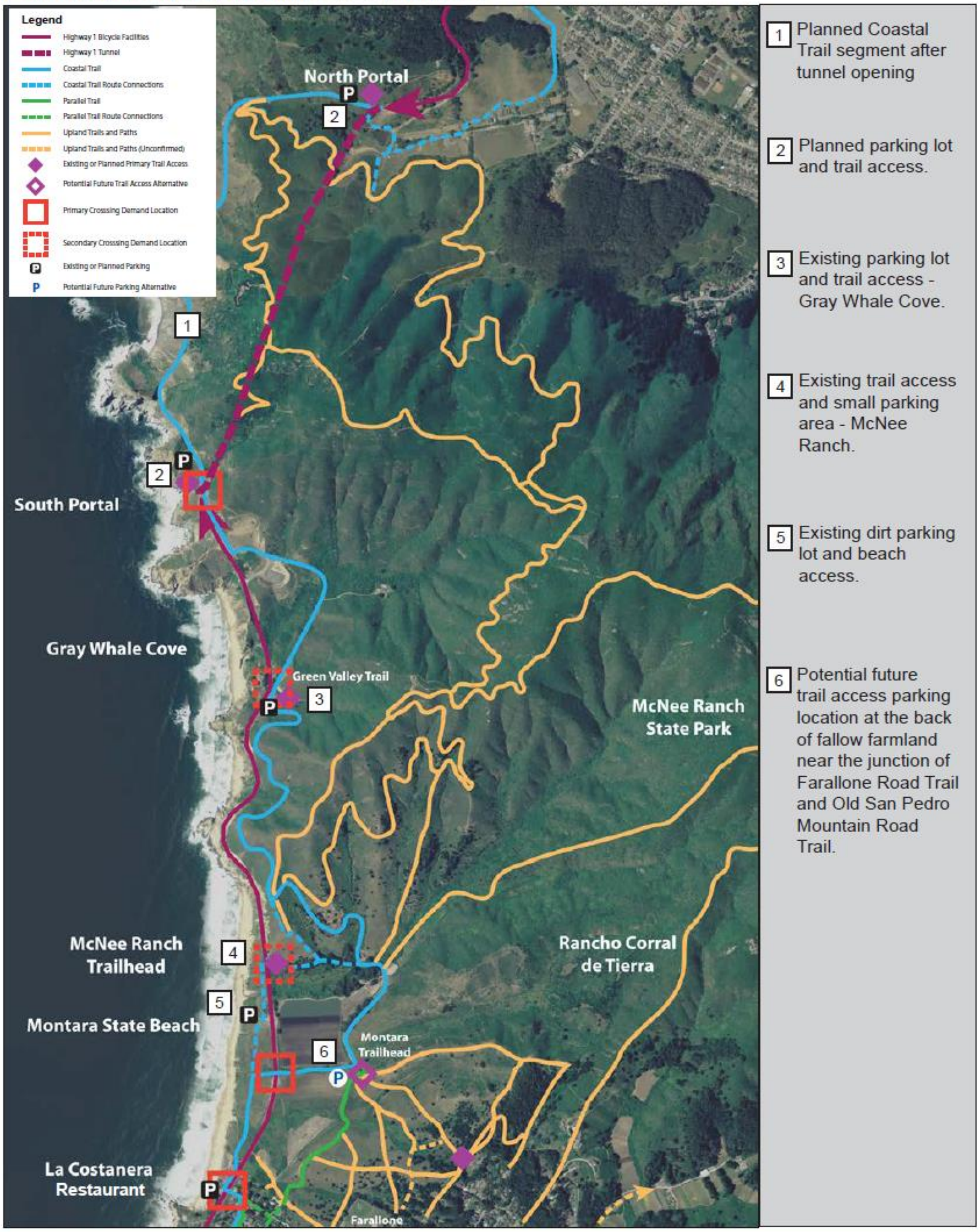
Recommended Target Speeds (page 18)

Recommended Target Speeds

The image above shows suggested targets for motor speeds through Community and Fringe zones for increased safety and flexibility in highway design and operations.

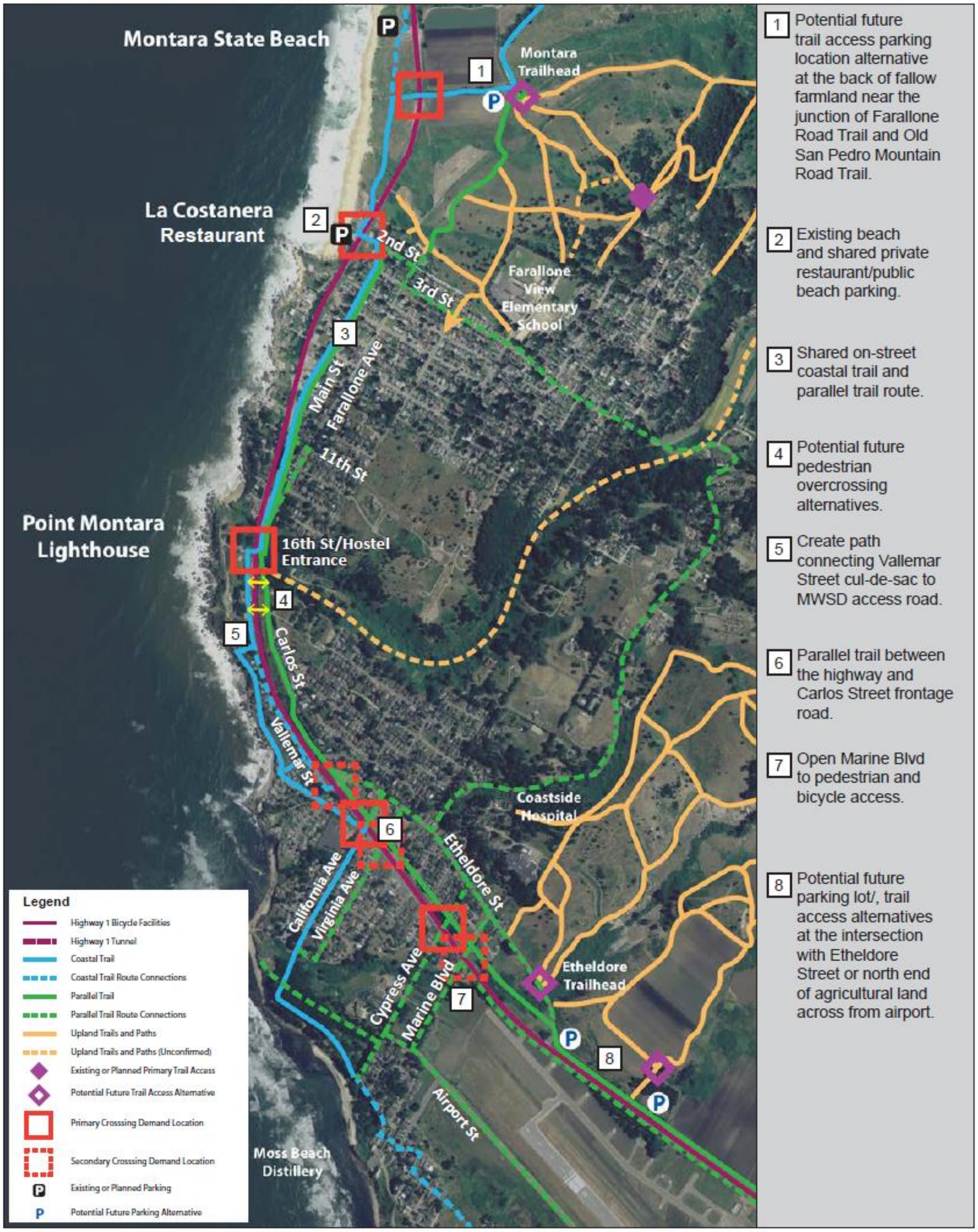
Pedestrian and Bicycle Network – Pacific to Montara (page 24)

Pedestrian & Bicycle Network: Pacifica to Montara



Pedestrian and Bicycle Network – Montara to Moss Beach (page 25)

Pedestrian & Bicycle Network: Montara to Moss Beach



Pedestrian and Bicycle Network – Moss Beach to Pillar Point Harbor (Page 26)

Pedestrian & Bicycle Network: Moss Beach to Pillar Point Harbor

1 On-street routes to be determined with Seal Cove resident input.

2 Existing multipurpose bluff-top dirt trail link between Pillar Point and Seal Cove.

3 Potential improved link between Moss Beach and Princeton (bike lanes and/or separated paved trail).

4 Potential future parking lot/, trail access alternatives at the intersection with Etheldore Street or north end of agricultural land across from airport.

5 Potential separated paved trail east side of the highway linking Moss Beach and El Granada.

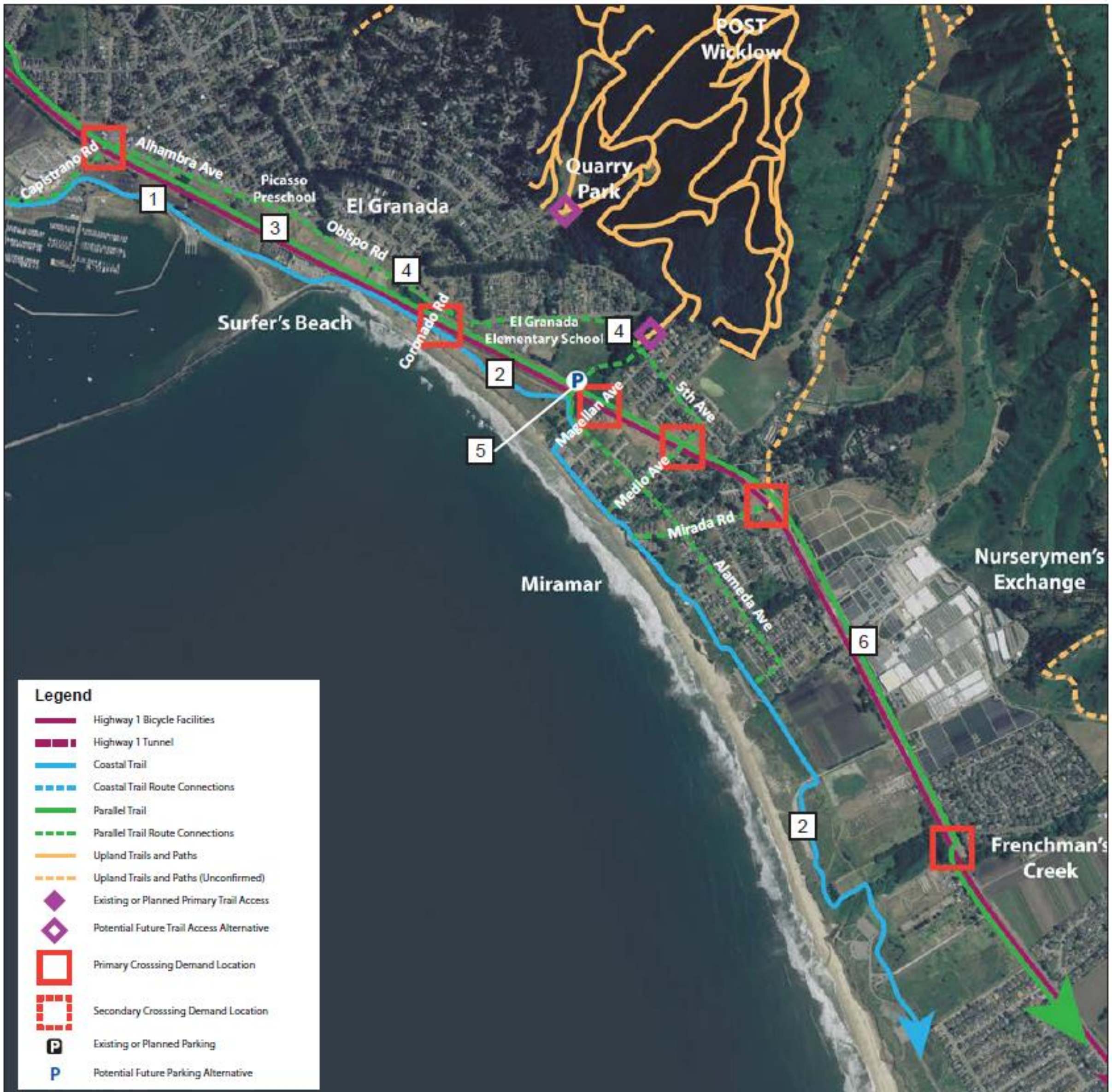
6 Potential alternative alignment for paved trail west side of the highway in coordination with airport improvements linking Moss Beach and El Granada.*

7 Existing on-street connection through Princeton.

*__Note:__ The airport is owned by the County and is under FAA requirements to ensure ground separation between motor vehicles and airplanes on taxi ways. The County is in the process of developing a plan to improve airport circulation which will likely include establishment of a parallel frontage road between the highway and the hangers and taxi way. This presents a potential opportunity to establish the parallel trail in conjunction with the frontage road on the west side of the highway that would avoid conflict with agricultural land on the east side of the highway.

Pedestrian and Bicycle Network – El Granada to Half Moon Bay (page 27)

Pedestrian & Bicycle Network: El Granada to Half Moon Bay



1 Existing paved trail past east jetty, transitioning to dirt trail, then paved route through parking lots and on-street through Princeton.

2 Existing paved, separated trail Surfer's Beach to City of Half Moon Bay.

3 Potential alignment along "Burnham Strip."

4 Potential alignment using paths and existing streets.

5 Potential future parking lot/ trail access alternatives to Quarry Park and POST Wicklow property.

6 Planned City of Half Moon Bay trail to City/County boundary at Mirada Road.

SAN MATEO COUNTY CONGESTION MANAGEMENT PROGRAM (C/CAG) (2019)

Link: https://ccag.ca.gov/programs/transportation-programs/congestion-management/

Direct Link: https://ccag.ca.gov/wp-content/uploads/2020/04/2019-CMP-Final-040920.pdf

Appendix: https://ccag.ca.gov/wp-content/uploads/2020/04/2019-Final-CMP-Appendix-040920-compressed.pdf

DESCRIPTION

The City/County Association of Governments of San Mateo County (C/CAG), as the Congestion Management Agency for San Mateo County, is required to prepare and adopt a Congestion Management Program (CMP) on a biennial basis. The purpose of the CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. The CMP is required to be consistent with the Metropolitan Transportation Commission (MTC) planning process that includes regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP). The CMP roadway system includes 53 roadway segments and 16 intersections, and includes all of the State highways within the County. CMP legislation requires the use of Level of Service to measure roadway performance. Highway 92 between Highway 1 and I-280 exceed the LOS standard in the AM and PM periods. The CMP includes C/CAG's programs and policies regarding transportation systems management (TSM) and transportation demand management (TDM), which address efforts to increase efficiency of the existing system and encourage utilization of alternative modes of transportation.

POLICIES OR PROGRAMS

Chapter 3 – Traffic Level of Service Standards

- California Government Code Sections 65089.1 (A) and (B) requires that level of service standards be established by, in this case, C/CAG for the roadways and intersections designated to be in the CMP Roadway System. (p.14)
- Existing levels of service are to be calculated every two years as part of the CMP's traffic operations monitoring program. (p.16)
- **The following LOS standards were selected for the roadway segments**. (p.19)
    - If the existing (1990/91) level of service was F, then the standard was set to be LOS F.
    - If the existing or future level of service was or will be E, then the standard was set to be LOS E.
    - The standard for roadway segments near the San Francisco, Santa Clara, and Alameda County borders, with one exception,12 was set to be LOS E to be consistent with the recommendations in those counties' 1991 CMPs. (This standard would apply unless those roadway segments were already operating at LOS F.)
    - On SR 82 (El Camino Real), the standard was set to be LOS E.
    - For the remaining roadway segments, the standard was set to be one letter designation worse than the LOS projected for the year 2000.

- LOS Standards for CMP Roadway Segments are in Table II (p.20)

Table II: Level of Service Standards for CMP Roadway Segments

Route	Roadway Segment	Baseline (1990-91) LOS	LOS Standard
1	San Francisco County Line to Linda Mar Boulevard	D	E
1	Linda Mar Boulevard to Frenchmans Creek Road	D	E
1	Frenchmans Creek Road to Miramontes Road	E	E
1	Miramontes Road to Santa Cruz County Line	C	D
92	SR 1 to I-280	E	E
92	I-280 to U.S. 101	C	D
92	U.S. 101 to Alameda County Line (Bridge Causeway)	D	E

- **Intersection Level of Service Standards** (p.23)
    - 16 intersection were added to the CMP Roadway System first adopted in 1991; the process to define these is described on p.23; Table III is on p.24

Table III: Intersection Level of Service Standards

Intersection	Peak Hour	Baseline (1993) LOS	LOS Standard
SR 92/SR 1	AM	B	E
	PM	A	
SR 92/Main Street	AM	F	F
	PM	D	

Chapter 4 – Performance Element

- According to California Government Code section 65089(b)(2), this element includes performance measures to evaluate current and future multimodal system performance for the movement of people and goods. At a minimum, these performance measures shall incorporate highway and roadway system performance, and measures established for the frequency and routing of public transit, and for the coordination of transit services provided by separate operators… The performance measures will be used to evaluate the effectiveness of projects proposed for inclusion in the CMP Capital Improvement Program. They will also be used to evaluate the effectiveness of proposed actions in deficiency plans to determine whether they are appropriate and acceptable. (p.28)
- San Mateo County Performance Measures (p.29) – evaluated for peak commute periods
    - Level of Service – Measured with vehicle counts to determine volume-to-capacity ratio, or floating car runs, to determine travel speeds
    - Travel Times for Single-Occupant Automobiles, Carpools, and Transit – Determine amount of time required to traverse selected corridors on a variety of modes.

    - Pedestrian and Bicycle Improvements – Considering ped/bike facilities in design for all transportation projects in the CMP Capital Improvement Program
    - Ridership/Person Throughput for Transit – Evaluate number of individuals that use transit during peak periods by using ridership data

Chapter 5 – Trip Reduction and Travel Demand (p.31)

- California Government Code 65089.a.3 requires that a Trip Reduction and Travel Demand Element be part of the CMP.
- The implementation of congestion reduction strategies such as staggered work hours, telecommuting, and parking management are also expected to be pursued at the local level.

Current TSM/TDM Programs in SMC (p.34)

- Measures that reduce the number of vehicles on the roadway system are referred to as Transportation Demand Management (TDM) measures. Measures that improve the efficiency of the system are referred to as Transportation System Management (TSM) measures.
- Measure A mandated that every jurisdiction in San Mateo County have a TSM/TDM plan/program in order to be eligible to receive Measure A funds.
- In November 2004, voters in San Mateo County approved the continuation of Measure A to be in effect from 2009 to 2033. The continuation of Measure A includes the Bicycles and Pedestrians Program ($45 million over 25 years) which will provide safe paths for bicyclists and pedestrians and the Alternative Congestion Relief Program ($15 million over 25 years) which allocates one percent of the total revenue to fund traffic management projects and creative congestion relief programs.
- Commute.org is SMC's TDM agency and operates a shuttle program, employer programs, and commuter programs, annual events, and TDM partnerships (p.36-38)

Chapter 6 – Land Use Impact Analysis Program

- Proposition 111 (Government Code Sections 65088-65089) requires that local governments develop a Land Use Impact Analysis Program to determine the impacts of land use decisions upon regional transportation routes and air quality. The document outlines the process for conducting land use analysis and which projects need to, and the mitigation and conformance.

Chapter 7 – Deficiency Plan Guidelines (p.48)

- The legislation that resulted in the preparation of Congestion Management Programs (CMPs) defined the preparation of deficiency plans as a way for local jurisdictions (cities and the County) to remain in conformance with the CMP when the level of service (LOS) for a CMP roadway segment or intersection deteriorates below the established standard. A CMP roadway segment or intersection can be found to violate the LOS standard when levels of service are monitored biennially.
- Based on the 2019 Monitoring, no roadway segments on Highway 1 were considered deficient (p.54)

San Mateo County Congestion Relief Plan

- The Plan, which was initiated in July 1, 2002 and updated July 1, 2019, will relieve all San Mateo County jurisdictions - 20 cities and the County - from having to fix the specific congested locations that triggered the development of this Plan, and any new ones that may be detected for the next four years.
- Total funding:

	2015-2019 Proposed Plan				2019-2023 Proposed Plan		
1	Employer-Based Shuttle and Local Transportation Services Program		$500,000	1	Local Transportation Services Program		$500,000
2	Travel Demand Management		$550,000	2	Travel Demand Management		$550,000
3	Intelligent Transportation Systems (ITS)/ Traffic Operational Improvement Strategies		$200,000	3	Intelligent Transportation Systems (ITS)/ Traffic Operational Improvement Strategies; Express Lane operations support; Smart Corridor Expansion		$200,000
4	Linking Transportation and Land Use:		$600,000	4	Linking Transportation and Land Use:		$600,000
	4A. Innovative Trip Reduction Strategies and Major Corridors Studies	$250,000			4A. Innovative Trip Reduction Strategies (Carpool 3.0)/ Mobility Action Plan	$150,000	
	4B. Transportation Improvement Strategy	$100,000			4B. Transportation Improvement Strategy to reduce GHG (GW TAP/743 toolkit/ Performance assessments)	$150,000	
	4C. Climate Action Plan Activities	$150,000			4C. Climate Change and Resiliency Planning (RICAPS, Climate Action Plan, Sea level rise planning for Trans. Facilities)	$150,000	
	4D. Sustainable Communities Strategy (SCS) Activities, Linking Housing with Transportation.	$100,000			4D. Sustainable Communities Strategy (SCS) Activities, Linking Housing with Transportation. (21 Elements/ Sub-RHNA/ Legislation compliance)	$150,000	
	Total		$1,850,000		Total		$1,850,000

Other Funding Sources for San Mateo County

- Measures A – Appendix H has summary of transportation expenditure plan
- Measure M - $10 Vehicle Registration Fee (Details in Chapter 11)
- Proposition 111 - Gas tax revenues allocated to local jurisdictions
- Transportation Fund for Clean Air - Programs to enhance air quality funded by increased vehicle registration fees (see Chapter 5)
- Bridge Replacement and Rehabilitation funds
- Proposition 108 - Passenger Rail and Clean Air Bond Act of 1990
- Proposition 116 - Clean Air and Transportation Improvement fund
- Regional Bridge Tolls
- Transportation Development Act funds
- Transit Capital Improvement funds

- Transit operator funds

Chapter 9 – Database and Travel Model (p.71)

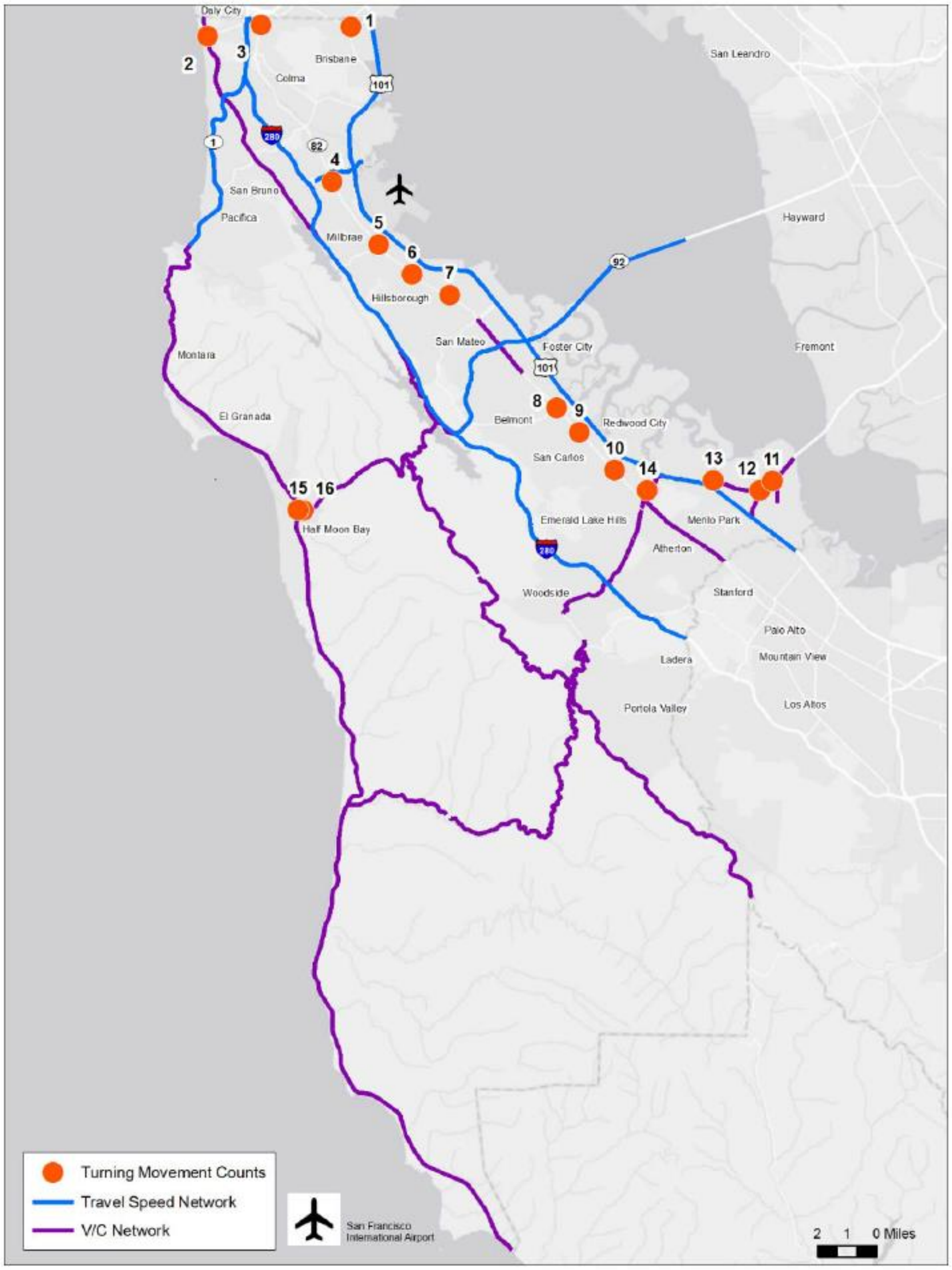
- California Government Code section 65089 (c) requires that every Congestion Management Agency (CMA), in consultation with the regional transportation planning agency, cities, and the county, develop a uniform data base to support a countywide transportation computer model that can be used to project traffic impacts associated with proposed land developments.
- Transportation models are analytical tools that can be used to assess the impacts of land use and development decisions on the transportation system. Transportation models are based on a complex interaction of relationships between variables: for example, the relationship between the price of gasoline and the number of vehicle-miles traveled or transit ridership. They are tools that can be used to project future transportation conditions, and the need for and effectiveness of transportation projects and infrastructure improvements. If the basic relationships established in a base year model validation remain well behaved over time, a well-designed and validated transportation model should predict transportation conditions with some degree of confidence.
- The CMP transportation database consists of data that in effect document existing and future transportation network conditions and socioeconomic characteristics in a quantitative manner. The databases are a basic input for the C/CAG transportation model (CMP model) and are typically updated based on updates to the regional socioeconomic data sets provided by the Association of Bay Area Governments (ABAG) and through periodic updates of the transportation networks through development of long-range planning efforts and for specific projects and corridors.
- Description of C/CAG CMP Transportation Model is on p.73

Chapter 12 – Traffic Impact Analysis (TIA) Policy (p.83)

- The intent of the Traffic Impact Analysis (TIA) policy is to provide uniform procedures to analyze traffic impacts on the Congestion Management Program (CMP) network from projects and cumulative traffic impacts on the CMP network from General Plans and Specific Area Plans, and to set thresholds for mitigations.

CMP Roadway Network (page 12)

Figure 1: CMP Roadway Network and Intersection Map



CA COASTAL TRAIL MCC CONCEPT PLAN (2012)

Link: http://static1.1.sqspcdn.com/static/f/1461275/21340479/1356197885377/2012-09-11-MCC-CCT-Midcoast.pdf?token=obHK1ZKaVBpQY1DAW%2FcmYo8pDFM%3D

Also see: http://www.midcoastcommunitycouncil.org/midcoast-cct/

Description

The MCC formed a Midcoast California Coastal Trail Committee from 2012-2013 that has since been disbanded. This committee created a draft working document for the Midcoast California Coastal Trail, but it appears this document was never finished or finalized.

Policies or Programs

- P.8: referring to Pillar Point Bluff Trails: Recommendations: The packed dirt trail surface developed by POST and the Coastal Conservancy suits this natural area and should be continued in the southern portion of the bluff at the time when trails can be formalized and developed. It is recommended that the route of existing dirt roads be used wherever possible in order to minimize habitat disturbance and weed infestation.
- P.8: Recommendation: Revisit the possibility of routing the primary CCT through Seal Cove once street circulation and road improvements are made.
- P. 9 Recommendations: Improve informal trail on County property between Vallemar and MWSD frontage road.
- P.11: Recommendations:
    - Safe highway crossing at Lighthouse/16th St. is badly needed. Caltrans recent leftturn project created more pedestrian/bike danger and no crossing. Highway 1 Safety/Mobility Study had good concept plan.
    - Improve and maintain adequate walking access on west side of highway from Lighthouse to Montara Beach. No traffic safety improvements should be allowed that decrease pedestrian/bike safety such as recent moving of west-side fog line immediately north of Lighthouse.
    - At several sections of abandoned old highway/Main St. trail, the roadbed is undercut and should be shored up. Vegetation along the route needs pruning to improve trail clearance.
    - In front of restaurant at Montara Beach, a trail is needed in the highway ROW where restaurant landscaping now encroaches.

SAN MATEO LOCAL COASTAL PROGRAM (2013)

Link: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/SMC_Midcoast_LCP_2013.pdf

DESCRIPTION

San Mateo County's Local Coastal Program (LCP) is used to guide development in the coastal zone while protecting coastal resources. Any and all development projects in the Coastal Zone require either a Coastal Development Permit or an exemption from Coastal Development Permit requirements. For a permit to be issued, the development must comply with the policies of the Local Coastal Program (LCP).

POLICIES OR PROGRAMS

1.1 Coastal Development Permits
After certification of the Local Coastal Program (LCP), require a Coastal Development Permit for all development in the Coastal Zone subject to certain exemptions.

1.2 Definition of Development
As stated in Section 30106 of the Coastal Act, define development to mean:

On land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

As used in this section, "structure" includes, but is not limited to, any buildings, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line.

1.3 Definition of Urban Areas

a. Define urban areas as those lands suitable for urban development because the area is either: (1) developed, (2) subdivided and zoned for development at densities greater than one dwelling unit/5 acres, (3) served by sewer and water utilities, and/or (4) designated as an affordable housing site in the Housing Component.

b. Recognize, however, that in order to make a logical urban/rural boundary, some land has been included within the urban boundary which should be restricted to open space uses and not developed at relatively high densities (e.g., prime agricultural soils, and sensitive habitats).

1.4 Designation of Urban Areas

Designate as urban those lands shown inside the urban/rural boundary on the Land Use Plan Maps. Such areas include Montara, Moss Beach, El Granada, Princeton and Miramar.

1.5 Land Uses and Development Densities in Urban Areas

a. Incorporate the adopted Montara-Moss Beach-El Granada Community Plan into the land use plan for the Midcoast, but amend it where necessary to meet Local Coastal Program objectives.

GROWTH MANAGEMENT

1.18 Location of New Development

*a. Direct new development to existing urban areas and rural service centers in order to: (1) discourage urban sprawl, (2) maximize the efficiency of public facilities, services, and utilities, (3) minimize energy consumption, (4) encourage the orderly formation and development of local governmental agencies, (5) protect and enhance the natural environment, and (6) revitalize existing developed areas.

b. Concentrate new development in urban areas and rural service centers by requiring the "infilling" of existing residential subdivisions and commercial areas.

c. Allow some future growth to develop at relatively high densities for affordable housing in areas where public facilities and services are or will be adequate and where coastal resources will not be endangered.

d. Require the development of urban areas on lands designated as agriculture and sensitive habitats in conformance with Agriculture and Sensitive Habitats Component policies.

1.20 Definition of Infill

Define infill as the development of vacant land in urban areas and rural service centers which is: (1) subdivided and zoned for development at densities greater than one dwelling unit per 5 acres, and/or (2) served by sewer and water utilities.

1.21 Lot Consolidation
According to the densities shown on the LCP Land Use Plan Map, consolidate contiguous lots, held in the same ownership, in residential subdivisions in Seal Cove to minimize risks to life and property and in Miramar to protect coastal views and scenic coastal areas.

1.23 Timing of New Housing Development in the Midcoast

a. In order to ensure that roads, utilities, schools and other public works facilities and community infrastructure are not overburdened by rapid residential growth, limit the maximum number of new dwelling units built in the urban Midcoast to 40 units each calendar year until:

i. A comprehensive transportation management plan, as described in Policy 2.53, is incorporated into the LCP;

ii. Facilities to adequately contain stormwater infiltration and inflow that exceed the existing Intertie Pipeline System (IPS) capacity during storm events and peak flows have been constructed and sufficient evidence has been presented that IPS capacity is adequate to avoid sewage overflows and water quality violations; and

iii. The growth rate is changed by an LCP amendment.

b. New dwelling units include each new single-family residential unit, each new unit in a two-family dwelling, each new unit in a multiple-family residential development, each new unit in mixed-use development, each new caretaker quarter, each new affordable housing unit, and each new second dwelling unit as further defined in ‘d’.

c. The number of each dwelling units built each year means that the number of units for which building permits have been issued authorizing construction to commence. The date of building permit issuance does not relate to the date of building permit application.

d. If the number of issued building permits for any given year has reached the 40-unit maximum, building permits for affordable housing, including second dwelling units, may still be issued under the following circumstances:

(1) the units are “affordable” as defined by Section 6102.48.6 of the certified zoning regulations and subject to income and cost/rent restrictions for the life of the development; and (2) the growth rate average over the three-year period, that includes the year of building permit issuance and the following two years, does not exceed 40 units/year.

e. This annual limit on residential units is not an entitlement, i.e., it does not guarantee that any proposed development will be approved. A coastal development permit for residential units may only be approved if the proposed development can be found consistent with all applicable policies of the certified LCP.

PUBLIC WORKS COMPONENT

2.1 Development Review of Public Works

After certification of the LCP, require a Coastal Development Permit from any public utility, government agency or special district wishing to undertake any development in the Coastal Zone, with the exceptions of State Universities and colleges and development on public trust lands or tidelands as described in Section 30519(b) of the California Coastal Act.

2.2 Definition of Public Works
Define public works as:

b. All public transportation facilities, including streets, roads, highways, public parking lots and structures, ports, harbors, airports, railroads and mass transit facilities and stations, bridges, trolley wires and other related facilities.

*2.6 Capacity Limits

Limit development or expansion of public works facilities to a capacity which does not exceed that needed to serve buildout of the Local Coastal Program.

2.7 Phased Development of Public Works Facilities

Require the phased development of public works facilities in order to ensure that permitted public works capacities are limited to serving needs generated by development which is consistent with the Local Coastal Program policies. In accordance with Policies 2.9, 2.14, 2.22, 2.27, and 2.42, allow expansion of public works facilities, including but not limited to water supply and transmission, sewage treatment and transmission, and the San Mateo County Midcoast and City of Half Moon Bay regional transportation system only after considering the availability of other public works facilities, and establishing whether capacity increases would overburden the existing and probable future capacity of other public works facilities.

2.9 Timing for New or Expanded Public Works Facilities

a. The amount of new or expanded capacity shall be determined by:
(1) Estimating the capacity needed to serve the land use plan at buildout;
(2) Considering the availability of related public works to establish whether capacity increases would overburden the existing and probable future capacity of other public works;
(3) Considering the availability of funds; and
(4) Considering available information from the Transportation Management Plan required by Policy 2.53.
b. Require every new public works facility or expansion of capacity to go through the coastal development review process.

2.10 Coordination with the City of Half Moon Bay

Coordinate with the City of Half Moon Bay's certified Local Coastal Program to take into consideration the policies of the City's LCP when determining when and how much to increase the capacity of all public works facilities.

ROADS

2.42 Capacity Limits

a. Limit expansion of roadways to capacity which does not exceed that needed to accommodate commuter peak period traffic when buildout of the Land Use Plan occurs and which does not exceed existing and probable future capacity of water and sewage treatment and transmission capacity or otherwise conflict with other policies of the LCP.

b. Use the requirements of commuter peak period traffic as the basis for determining appropriate increases in capacity.

c. Ensure that any additional development that would be served or facilitated by the road expansion project does not exceed the development levels that the existing and probable future water supply and sewage treatment capability can serve.

d. Maintain Highway 1 as scenic two-lane road outside the Urban Midcoast area depicted on Land Use Plan Map 1.3.

2.43 Desired Level of Service

In assessing the need for road expansion, consider Service Level D acceptable during commuter peak periods and Service Level E acceptable during recreation peak periods.

2.44 Route 1 and Route 92 Phase I Capacity Limits

a. On Route 92, limit Phase I improvements to: (1) slow vehicle lanes on uphill grades, and (2) the following operational and safety improvements within the existing alignment or lands immediately adjacent: elimination of sharp curves, lane widening, wider shoulders to allow passage for bicycles and emergency vehicles and signals at major intersections.

b. On Route 1, limit improvements to: (1) slow vehicle lanes on uphill grades and the following operational and safety improvements within the existing alignment or lands immediately adjacent: elimination of sharp curves, lane widening, lane reconfiguration, acceleration/deceleration lanes, wider shoulders to allow passage for bicycles, emergency vehicles and signals at major intersections; (2) additional traffic lanes in the Midcoast project area as depicted on Map 1.3, provided the additional lanes are found to be in compliance with all other applicable policies of the LCP, including, but not limited to, sensitive habitat and wetland protection policies;

2.46 Monitoring
a. Ensure that any data collected by transportation organizations, including CalTrans', of peak commuter periods and recreation peak periods is applied in decisions related to the adequacy of roadway capacity.

b. Monitor the number and rate of new residential construction particularly in the rural and urban Midcoast.

2.49 Preferential Treatment for Buses

Require that CalTrans provide preferential treatment for buses and shuttles at congested locations, such as the intersection of Routes 1 and 92, in accordance with the Transit Policies of this Component.

2.50 Improvements for Bicycle and Pedestrian Trails

a. Require, if funds are available, that CalTrans provide adjacent or separate facilities for bicycle and pedestrian trails in accordance with the policies of the Recreation and Visitor-Serving Facilities and Shoreline Access Components and the San Mateo County Bikeways Plan (CCAG).

c. The County will work with CalTrans, the State Coastal Conservancy, the Coastal Commission, State Parks, Golden Gate National Recreation Area, and other public agencies to ensure that a CCT trail alignment is developed and will continue from the southern terminus of the Devil's Slide Highway 1 relinquishment and link to other trail systems.

d. Require, at a minimum, and consistent with AB 1396, that CalTrans protect and make available adequate right-of-way to allow the future development of bicycle and pedestrian trails in accordance with the policies of the Recreation and Visitor-Servicing Facilities and Shoreline Access Components and the San Mateo County Comprehensive Bike Route Plan (CCAG) and the California Coastal Trail (CCT) Plan.

e. Through coordination with CalTrans, promote the development of a continuous Midcoast pedestrian/bicycle/multi-purpose path (or a system of single mode paths) parallel to Highway 1 as part of the overall CCT system.

f. Through coordination with CalTrans, promote the most appropriate, safe, feasible crossings, either at-grade, above- or below-ground pedestrian crossings at Midcoast locations along Highway 1, including those shown as "Proposed Safe Crossing" in the Midcoast Recreational Needs Assessment – Map 3.

g. Unless a suitable off-highway alternative already exists or is being provided, as part of any new or improved roadway project other than repair and maintenance of existing facilities and consistent with AB 1396, require that CalTrans incorporate the following provisions (the size and scope of which will be commensurate with the size and scope of the proposed roadway project):

(1) A link within the vicinity of the project area necessary to facilitate a continuous Midcoast pedestrian/bicycle/multi-purpose path (or a system of single mode paths) parallel to Highway 1; or

(2) The most appropriate, safe, feasible crossings, either at-grade, above- or below-ground pedestrian crossings at Midcoast locations along Highway 1, including those shown as "Proposed Safe Crossing" in the Midcoast Recreational Needs Assessment – Map 3; Or

(3) Completion of any CCT segment gap that is in the vicinity of the new

or improved roadway project; or

(4) Provide funding necessary to complete any of the above actions; or

(5) Any combination of the above.

h. Ensure that no roadway repair or maintenance project blocks or damages any existing or formally planned public trail segment or, if such an impact is not avoidable, that an equal or better trail connection is provided in conjunction with that repair and maintenance project either directly by CalTrans or through CalTrans' funding to a third party.

2.51 Protecting Road Capacity for Visitors through Transportation System Management Techniques

a. Use the following transportation system management techniques to maximize the efficiency and effectiveness of existing roadways during 2.22 recreation peak periods and protect road capacity for visitors: (1) recommend that the State Highway Patrol enforce illegal parking regulations along Route 1 and in emergency pullouts on peak weekends and holidays; (2) recommend that CalTrans install left turn storage lanes at all parking lots (25 spaces or greater) along the shoreline; (3) prohibit new road or driveway connections to Routes 1 and 92 in the Midcoast area as shown on Map 1.3 which do not serve recreation facilities unless there is no feasible alternative; (4) minimize the number of new road or driveway connections to Routes 1, 92, and 84 in rural areas which do not serve recreation facilities; and (5) orient local commercial and community facilities away from Highways 1 and 92.

b. Recommend to the City of Half Moon Bay that it prohibit the location of local commercial or community facilities on Route 92 and on Route 1, within a half-mile of Route 92.

c. Monitor the peak recreation period traffic to determine whether the above techniques are successful and whether new residential development is consuming road capacity needed for visitors.

2.52 Traffic Mitigation for all Development in the Urban Midcoast

In the urban Midcoast, require applicants for new development, as defined in Section 30106 of the Coastal Act, that generates any net increase in vehicle trips on Highways 1 and/or 92, except for a single-family dwelling, a second dwelling unit, or a two-family dwelling, to develop and implement a traffic impact analysis and mitigation plan (TIMP). Prior to the approval of any coastal development permit (CDP) application involving the above, information necessary for the analysis and implementation of all components of the TIMP shall be submitted in support of any CDP application. Calculation of new vehicle trips generated shall assume maximum occupancy/use of any approved development. The TIMP shall include:

a. Traffic mitigation measures, including but not limited to transportation demand management (TDM) measures set forth by the City/County Association of Governments (CCAG), establishing a shuttle service for employees of the subject development, subsidizing transit for employees of the specific development, charging for non-public access parking, establishing a carpool or vanpooling program for employees of the subject development, having a compressed work week for employees of the subject development, providing bicycle storage facilities and showers for employees of the subject development, and establishing a day care program for employees of the subject development. Prior to approval of the coastal development permit, the County must be able to make the finding that the proposed mitigation measures are adequate to offset new vehicle trips generated by the project to the extent feasible.

b. Specific provisions to assess, and mitigate for, the project's significant adverse cumulative impacts on public access to, and recreational use of, the beaches of the Midcoast region of San Mateo County. This shall include an assessment of project impacts combined with other projects causing related impacts, including all reasonably foreseeable future projects as defined in 14 CCR Section 15130(b). Public access and recreation mitigation measures to consider include: providing public access parking that is not time restricted, public access signage indicating that public access parking is available, providing a public recreation shuttle bus to all the beaches during key recreational use times that commences at the junction of Highways 92 and 280, dedication of construction of various public access improvements such as bikeways, and vertical and lateral public paths to and along the beaches and/or bluffs.

2.53 <u>Transportation Management Plan</u>

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.

SAN MATEO COUNTY TRAFFIC IMPACT STUDY REQUIREMENTS (2013)

Link: https://publicworks.smcgov.org/documents/traffic-impact-analysis-requirements

Description

The County of San Mateo Department of Public Works (DPW) requires analysis for traffic and circulation impacts of proposed developments of a certain size and/or type. This requirement can be satisfied by preparing a Traffic Impact Study (TIS). Generally, projects that are expected to generate over 500 trips per day or over 100 trips during the peak hour are required to develop a TIS. Development of the TIS is the responsibility of the applicant (developer), and the County serves in a reviewing capacity. The results of the TIS inform any conditions of development and mitigations.

SAN MATEO COUNTY INTERIM VMT ANALYSIS GUIDELINES (2020)

Link: https://publicworks.smcgov.org/documents/traffic-impact-analysis-requirements

Description

Senate Bill 743 (SB 743) initiated an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA. As of July 1, 2020, agencies analyzing the transportation impacts of new projects must now use vehicle miles traveled (VMT) instead of level of service (LOS). VMT measures how much actual auto travel a proposed project would create. Applicants must assess whether their proposed projects are subject to a VMT analysis in order to meet CEQA Guidelines Section 15064.3. San Mateo County has developed interim guidance for applicants including when a project would be likely screened from a VMT analysis, significance criteria, and mitigation options. C/CAG is currently developing a VMT estimation tool that is anticipated to be publicly available in early 2021. The County plans to develop final guidance once the C/CAG tool is available. Assessing VMT is not yet reflected in the San Mateo County Local Coastal Program, DPW Traffic Impact Study Requirements, or C/CAG's Traffic Impact Analysis Policy.

PLAN PRINCETON (EXISTING CONDITIONS 2014, NEXT DRAFT 2020)

Link: https://planning.smcgov.org/plan-princeton

DESCRIPTION

Plan Princeton is a study being conducted by San Mateo County to update the land use plan for Princeton. The project will focus on the area west of and including Highway 1, between Pillar Point Harbor and Moss Beach. The purpose of this project is to make a comprehensive update to the policies, plans, and standards regulating the Princeton study area. The project team released the Preferred Plan and Policy Framework in March 2015. The Draft Plan is currently being developed and will be released for public review and comment. The Connect the Coastside Project Team is working closely with the Plan Princeton Project Team to ensure consistency with the current draft of the plan; these projects may change in the future after additional community input.

POLICIES OR PROGRAMS

Section 3.2 – Circulation Policy Framework (p.24)

- Create **pedestrian-oriented street enhancements along Prospect Way, Broadway, Princeton Avenue, and West Point Avenue, as the Princeton Waterfront's visitor-oriented spine**. Street improvements should reinforce Princeton's existing character, while providing safe and attractive space for pedestrians.
- Work with the Harbor District to enhance the pedestrian path along the edge of the Inner Harbor.
- Create a network of **multiuse trails and on-street bike routes that provides safe and attractive access into the Princeton Waterfront area, and enhances the Coastal Trail**. The network includes **multiuse paths along Highway 1 (the "Parallel Trail") and Airport Street**; as well as Class II and Class III bikeways along **Capistrano Road** from Highway 1 (north intersection) to Prospect Way.
- Identify a circulation network for visitor access to Princeton and Pillar Point Harbor that includes the Harbor access road, Capistrano Road, Prospect Way, Broadway from Prospect to Princeton Avenue, Princeton Avenue, and West Point Avenue from Princeton to the Pillar Point recreational parking lot. Improvements on these streets should facilitate multimodal access and enhance the look and feel of Princeton. **Signage should be used to guide visitors along these routes.**
- Identify a circulation network for trucks and marine-related traffic that includes the Harbor access road, Capistrano Road from Highway 1 (south) to Prospect Way, Prospect Way, Harvard Avenue, Airport Street, and Cypress Avenue. Improvements should facilitate movement for large vehicles and equipment, while also supporting other users. Signage should be used to guide trucks and marine-related traffic along these routes.
- **Identify improvements to the intersection of Capistrano Road and Prospect Way** that relieve traffic congestion and create a safe and attractive gateway between the Harbor area and the Princeton Waterfront.
- Support **improvements to the intersections of Highway 1 and Cypress Avenue and Highway 1 and (north) Capistrano Road**, as part of the Comprehensive Transportation Management Plan (CTMP) being conducted in parallel with Plan Princeton (also known as **Connect the Coastside**).

Improvements should be designed to ease congestion and improve the safety and attractiveness of travel by bike and on foot.

- Following policy 2.53 in the certified LCP, plan roadway improvements in light of the overall implementation of the transportation management plan currently underway for the larger Midcoast area.
- Following policy 11.13 in the certified LCP, ensure consistency with San Mateo County's County Trail Policies and the County Trail Design and Management Guidelines, including but not limited to:
    - Ensuring compatibility with the environment by locating, designing, and developing trail routes with consideration of their potential to have environmental, recreational, and other impacts on adjacent lands;
    - Considering an alternative trail route if the location of a trail is proposed in a sensitive habitat or wetland and trail use is not allowed by the LCP;
    - Providing trail access for a range of potential users;
    - Siting and designing trail alignments and associated facilities to be in harmony with their natural and cultural environment, and to keep aesthetically natural characteristics;
    - Siting and designing trails to avoid prime lands designated as suitable for agriculture, or to traverse such lands in a manner that does not result in interference with agricultural activities or substantially reduce the agricultural potential of those lands. Agricultural activities shall be protected and buffered from trail user impacts by means of distance, physical barriers, or other non-disruptive methods.
- Develop a **system of wayfinding signage to direct visitors** to where coastal access parking areas can be found and if there are any parking restrictions, following the guidance established in Plan Princeton.
- Pursue an **agreement with Half Moon Bay Airport (a division of San Mateo County) to establish a parking lot for recreational users of Pillar Point Bluff**, addressing the shortage of recreational parking in this area. The parking lot may be unimproved, and used only for spillover parking at peak times or for special events.

Maps and Photos

- Figure 3-1: Preferred Plan Circulation (p.21)
- Figure 3-2: Circulation Components by Mode (p.22)

SAN MATEO COUNTY COASTSIDE ACCESS STUDY (2015)

Link: https://www.nps.gov/goga/learn/management/upload/SM-Coastside-Access-FINAL-April-2015.pdf

DESCRIPTION

The San Mateo Coastside Access Study considers access to public lands along the San Mateo County coast between Pedro Point Headlands and El Granada. The partners to the study are San Mateo County Parks, California State Parks, and Golden Gate National Recreation Area (GGNRA). The consultant team carried out an assessment of access capacity and visitor demand. The team considered current conditions and developed a forecast of how visitor access might change in the future.

POLICIES OR PROGRAMS

COASTSIDE ACCESS OPPORTUNITIES:

1. Continue to improve pedestrian and bicycle connectivity between parks
2. Study the potential for a regional shared parking strategy
3. Study the potential for a regional paid parking program
4. Improve wayfinding.
5. Provide and promote a more frequent, visitor-oriented regional transit service
6. Monitor growth in parking demand and consider strategically expanding the parking supply in accordance with policy goals

PROJECTS

p.4-11: NEXT STEPS / PHASING APPROACH

1. **Formalize Gray Whale Cove informal parking area and Montara State Beach Roadside parking.**
2. **Begin discussions of shared parking with potential partners.**
3. **Implement improved wayfinding.** The wayfinding improvements discussed in this memo could begin immediately. Signage should identify the formal parking areas at Gray Whale Cove, and at the Montara State Beach roadside. Improved signage should also direct visitors to the public parking spaces at the Oceano Hotel. Land managers may also wish to begin working together on shared website language regarding travel options to and from the Coastside.
4. **Begin discussion of costs, benefits, and tradeoffs of more intensive strategies.**
5. **Monitor parking occupancies.**

HIGHWAY 1 CONGESTION AND SAFETY IMPROVEMENT PROJECT – PRELIMINARY PLANNING STUDY (2015)

Link: https://planning.smcgov.org/highway-1-congestion-and-safety-improvement-project

DESCRIPTION

The San Mateo County Transportation Authority prepared the Preliminary Planning Study (PPS) to evaluate the feasibility of the projects that were identified in the Highway 1 Safety and Mobility Studies (Phase 1 and 2). The study was funded through Measure A funds.

The improvements were grouped into five general locations (from south to north): (1) Mirada Road in Miramar; (2) S. Etheldore Street to Vallemar Street in Moss Beach, CA; (3) 16th Street in Montara, CA; (4) 1st Street through 9th Street in Montara; and (5) Gray Whale Cove. The Moss Beach location includes the proposed improvements at Cypress Avenue. The improvements at each location could be implemented independently of one another as individual projects, combined into a single project, or grouped into multiple projects depending on feasibility, public acceptance, and the availability of funds.

Generally, two alternatives were evaluated for each location. The two alternatives consist of the minimum and the maximum improvements in terms of costs and impacts. A third alternative was developed for two locations—1st Street through 9th Street in Montara and S. Etheldore Street to Vallemar Street in Moss Beach—in response to feedback from the public at the third public workshop, which was held on March 11, 2015.

Table ES-1-1: Highway 1 Preliminary Planning Study Alternatives Matrix

Location	Alternative	Estimated Capital Cost[1]	Estimated Support Cost	Estimated Construction Completion[2]	Environmental Impact[3]	Utility Impact[4]
Mirada Road, Miramar	1	$371,000	$138,000	2018	Low	None
	2	$4,122,000	$1,526,000	2020	Med	Low
Moss Beach	1A	$680,000	$252,000	2018	Low	None
	1B	$577,000	$214,000	2018	Low	None
	2	$7,405,000	$2,740,000	2020	Med	Low
	3	$2,947,000	$1,091,000	2019	Low	None
16th Street, Montara	1	$377,000	$140,000	2018	Low	None
	2	$3,325,000	$1,231,000	2020	Med	Med
1st Street – 9th Street, Montara	1	$517,000	$191,000	2018	Low	None
	2	$7,246,000	$2,681,000	2020	Med	High
	3	$4,106,000	$1,519,000	2019	Low	Med
Gray Whale Cove	1	$951,000	$351,000	2020	Med	Med
	2	$1,050,000	$388,000	2020	Med	Med

Notes:
1. Project capital outlay cost (construction cost) refer to Attachment C.
2. Refer to schedule assumptions.
3. Low = minimizes impacts; Med = some impacts or potential mitigation.
4. Low > $50K > Med > $150K < High

Each of the factors in Table ES-1 plays a key role in the feasibility of the project(s) moving forward. Depending on the implementation strategy, the California Department of Transportation (Caltrans) project delivery process may include the development of a Project Initiation Document (PID), a Project Approval and Environmental Document (PA&ED), and separate Plans, Specifications, and Estimates (PS&E). Delivery of individual sites may qualify for a Permit Engineering Evaluation Report (PEER), which is an abbreviated process. The alternatives and implementation strategies have been discussed with Caltrans District 4 staff.

Beginning on p.4-11, the PPS documents design exceptions, traffic analysis, bridge and structure work, right-of-way and utility impacts, and a Preliminary Environmental Analysis Report (PEAR). The checklist for all alternatives is also included as Attachment D.

Cost estimates for each alternatives are in Tables 4-10 and 4-11 (p.4-25).

Project delivery recommendations are addressed in Section 6.

Projects

Mirada Road and Highway 1 (p.4-3) Future considerations (p.6-2)

- Install at-grade crossing
    - Alternative 1 – RRFBs, highway lighting, advance yield markings and signs
    - Alternative 2 – raised medians, ped refuge in the median, highway lighting, advance yield markings and signs
        - Requires pavement widening to accommodate medians and shoulders, extension of drainage culvert, and four bus stop would need relocation

Moss Beach (p.4-4) Support for Alternative 3

- Median between S. Etheldore St and Marine Boulevard
- Ped crossings at Cypress, Virginia, and/or California Avenues
    - Limit restriping of acceleration lane for northbound Highway 1 traffic at Cypress
- Acceleration lane on Highway 1 for eastbound Cypress Ave going NB on Highway 1

Montara – 16th St (p.4-6) Alternative 1

- At-grade ped crossing with highway lighting. Alternatives include raised medians.

Montara – 1st through 9th St (p.4-7) No individual alternative emerged for 7th St, Alternative 3 for 2nd St

- At-grade ped xings at 2nd St and 7th St with additional highway lighting, RRFBs, alternative includes raised medians

Gray Whale Cove Alternative 1

- New at-grade ped xing north of the parking lot with RRFB or PHB

Maps and Photos

- Attachment B includes detailed exhibits for each alternative

CALTRANS TRANSPORTATION CONCEPT REPORT FOR SR 1 SOUTH (2018)

Link: http://static1.1.sqspcdn.com/static/f/1461275/28065824/1548438726290/2018-04-Caltrans-Rte1-TransConceptRep.pdf?token=gCbuKEZq5TwjCLHNIX6axGltVGw%3D

Description

The purpose of the Transportation Concept Report (TCR) is to evaluate current and projected conditions along the route and communicate the vision for development in each Caltrans District over a 25-year planning horizon; TCRs are part of Caltrans System Planning. The TCR for SR 1 South is from San Mateo/Santa Cruz County to the Golden Gate Bridge. The summary of the 25-year concept for the Midcoast is in the Executive Summary (snapshot below).

Segment	County	Segment Description	Existing Facility	25-yr Concept	Strategies To Achieve Concept
Segment B PM 29.04–R43.46	SM	SR 92 to Sharp Park Road, Pacifica	**2-4** lane Conventional Highway	**2-6** lane Conventional Highway	• Support "Connect the Coastside" efforts • Support completion of CA Coastal Trail • Implement new Traffic Operations Systems elements including Closed Circuit TV and Variable Message Signs • Maintain & improve Park & Ride lots • Improve coastal community safety & mobility with consistent roadway edges, shoulders, ped crossings & roundabouts • Monitor and plan for sea level rise

The TCR acknowledges that Segment B has periods of traffic congestion on the weekends and during annual events, that visitors often park informally along the highway shoulder for trail and beach access, and pedestrian and bicycle activity is prevalent.

The TCR also includes data on each segment as summarized in the tables below.

Route Designations

Table 2: Route Designations

SR 1 South Route Designations and Characteristics				
Segment:	A	B	C	D
	Santa Cruz/San Mateo County Line to SR 92	SR 92 to Sharp Park Road, Pacifica	Sharp Park Road to SM/SF County Line	SM/SF County Line to US 101
California Freeway & Expressway System (F&E)	Yes	Yes	Yes	Yes
National Highway System (NHS)	Partial (North of Tunitas Creek Rd.)	Yes	Yes	Yes
Strategic Highway Network (STRAHNET)	No	No	No	No
Scenic Highway	Yes	Eligible	Eligible	Eligible
Interregional Road System (IRRS)	Yes	Yes	Yes	Yes
Federal Functional Classification	Minor Arterial/Other Principal Arterial	Other Principal Arterial	Other Freeway or Expressway/ Interstate	Other Principal Arterial/Other Freeway or Expressway
Goods Movement Route	No	No	Tier 3 (I-280 portion only)	No
Truck Designation	Terminal Access (STAA*)/ Kingpin to Rear Axle 40 ft. max	CA Legal 65' KPRA 40'max/ Restrictions in Tom Lantos Tunnel	Terminal Access (STAA*)/ Kingpin to Rear Axle 40 ft. max	CA Legal Route 65' max Kingpin to Real Axle 40 ft. max
Rural/Urban/Urbanized	Rural	Rural	Urbanized	Urbanized
Metropolitan Planning Organization/ Regional Transportation Planning Agency	Metropolitan Transportation Commission			
Congestion Management Agency	San Mateo City/County Association of Governments			San Francisco County Transportation Authority
Local Agency	San Mateo County/ City of Half Moon Bay	San Mateo County/ City of Pacifica	San Mateo County/ City of Daly City	San Francisco County Transportation Authority, City & County of San Francisco
Air District	Bay Area Air Quality Management District			
Terrain	Mountainous/ Rolling	Mountainous/ Rolling	Mountainous/ Rolling	Rolling/Flat

*STAA = federal Surface Transportation Assistance Act of 1982

System Characteristics

Table 4: SR 1 South Facility and Lane Characteristics

Segment	A	B	C	D
	Santa Cruz/San Mateo County Line to SR 92	SR 92 to Sharp Park Road, Pacifica	Sharp Park Road to SM/SF County Line	SM/SF County Line to US 101
Existing Facility (2015)				
Facility Type	C	C	F	C/F
General Purpose Lanes	2	2-4	4-10	4-6
Lane Miles				
Centerline Miles	29.04	14.42	4.89	7.08
Median Width	0-12'	0-46'	8-46'	4-14'
Median Characteristics	Striped	Striped/Barrier	Barrier	Raised Island/Barrier
HOV Lanes	0	0	0	0
Auxiliary Lanes	0	0	Yes	Partial
Truck Climbing Lanes	0	0	0	0
Distressed Pavement (2012 Survey)	5%	20%	20%	30%
ROW	<100'	<100'+	100'+	100'+
Concept Facility (2040)				
Facility Type	C	C	F	C/F
General Purpose Lanes	2	2-6	4-10	4-6
Lane Miles	58	79	30	40
Centerline Miles	29.04	14.42	4.89	7.08
HOV /HOT Lanes	0	0	0	0
Aux Lanes	0	0	0	0
Truck Climbing Lanes	0	0	0	0
TMS Elements				
TMS Elements (Base Year)		CCTV CMS	CCTV TMS	CCTV HAR VMS
TMS Elements (Horizon Year)		CCTV CMS VMS	CCTV TMS VMS	CCTV HAR VMS

C = Conventional Highway
F = Freeway

CCTV = Closed Circuit Television
CMS = Changeable Message Signs
HAR = Highway Advisory Radio
TMS = Traffic Monitoring Stations
VMS = Variable Message Signs

Table 5: Bicycle Facilities

SR 1 South Bicycle Facilities										
	SR 1 South Bicycle Facility						Parallel Bicycle Facility		
Segment	*Post Mile*	*Location Description*	*Bicycle Access Prohibited*	*Facility Type*	*Parallel Facility Present*	*Posted Speed Limit*	*Name*	*Location Description*	*Class*
A	*SM 0.00 to SM 29.04*	*SM/SCruz County Line to SR 92*	*No*	*Shared Roadway; no dedicated bikeway*	*Portion*	*55 mph*		*Naomi Patridge Trail, 3.5 mile multipurpose trail through Half Moon Bay*	*I*
B	*SM 29.04 to SM R43.46*	*SR 92 to Sharp Park Rd, Pacifica*	*No*	*Shared Roadway; no dedicated bikeway*	*Portion*	*55 mph*		*Devil's Slide Trail, a 1.3-mile multi-use trail, converted from a former segment of Highway 1*	*n/a*
C	*SM R43.46 to SM R48.22*	*Sharp Park Rd, Pacifica to SM/SF County Line*	*Yes*	*Bicycling Prohibited on freeway*	*Yes*	*65 mph*		*Bradford Way Francisco Blvd. Lakeside Ave. Palmetto Ave. Esplanade Ave. Skyline Blvd. Junipero Serra Blvd.*	*II/III*
D	*SF 0.00 to SF 7.08*	*SM/SF County Line to US 101*	*Portion from Lake Street northward*	*Shared Roadway to Lake Street*	*Yes*	*30 mph*		*Beverly St. Lunado Way Winston Dr. 20th Ave. 23rd Ave. Lincoln Blvd.*	*II/III*

Class I: Bike path
Class II: Bike lane
Class III: Bike route

The TCR identifies high priority intersections for pedestrian crossing improvements, including Coronado St, Capistrano Rd, and Gray Whale Beach parking lot (p.25). It also shares the vision for the California Coastal Trail (p.26) and understanding that Caltrans is committed to cooperate to make lands available for the completion of the trail.

The TCR also discusses the partnership agreement with the California Coastal Commission, with a focus on sea level rise and the California Coastal Trail. Caltrans District 4 is also working on the Climate Change Vulnerability Assessment which studies the potential effects of climate change on the State Highway system. It identifies SR-1 South between Pescadero and San Gregorio (p.37) as an area of immediate concern with erosion on the roadbed (p.37). It also identifies Surfer's Beach in El Granada as an area of concern, due to its exposure to wave erosion.

The TCR acknowledges that roundabouts should be evaluated as they pertain to highway operations, per its Traffic Operations Policy Directive 13-02 on Intersection Control Evaluation (ICE) to better examine the benefits of alternative treatments (p.48).

Policies or Programs

Detailed beginning on page 52; below are examples most relevant to Connect the Coastside.

- Planned traffic operations systems From Half Moon Bay to Pacifica (Segment B):

    - On the conventional highway portions of the corridor, fixed cameras at each signalized intersection, along with a few CCTVs on the long stretches between signalized intersections.
    - VMSs and TMSs to be installed.
    - Consider roundabouts for coastal communities
- Work with transit operators on the planning and implementation of projects to increase people throughput in the corridor such as: Park and Ride facilities, bus signal priority, transit stops and shelters.
- Support operations and expansion of transit service and improve amenities; increase frequency and passenger comfort and reduce travel times, including a Regional Express Bus network.
- Pave transit stops and connect them via sidewalk or path along SR 1 South.
- Support bicycle network improvements paralleling and crossing SR 1 South.
- Install rectangular rapid flashing beacons or pedestrian hybrid beacons where appropriate
- Analyze lane widths of road facilities to consider the addition of medians to provide pedestrian refuge and help with traffic calming.
- Work with local agencies on implementing planned and programmed pedestrian and bicycle network improvements. These may include on-street improvements or grade-separated facilities.
- Provide shoulder striping or edge treatments wherever possible to enhance the walking experience
- Support completion of the California Coastal Trail and provide trail connectivity wherever possible, recognizing the alignment goals for the trail which aim to place it within the sights, sounds, and smells of the ocean, safely protected from motorized traffic.

PROJECTS

Pages 53-54

Table 19: SR 1 South Summary of Planned and Programmed Projects

Seg.	Description	Planned or Programmed	Location	Source	Purpose	Implementation Phase
A	SR 1 possible realignment because of severe erosion between Pescadero & San Gregorio.	Planned	Bean Hollow Rd. to Stage Rd. PM 10.70-19.45	Project Study Report (EA: 2S210K)	Realignment	Planning
A	Complete Class I bike & pedestrian path from Kelly Ave. to San Mateo Rd (SR 92)	Planned	Half Moon Bay	Project Recommended by Caltrans	Bike & Pedestrian Improvements	Planning
A B	Intersection improvements at Kelly Ave., Coronado St., and Capistrano Rd: curve radii, curb extensions, crosswalks	Planned	Half Moon Bay to El Granada and Princeton	Project Recommended by Caltrans	Bike & Pedestrian Improvements	Planning
B	Stripe Class II bike lanes with striped buffer where feasible	Planned	Half Moon Bay to El Granada and Princeton	Project Recommended by Caltrans	Bike & Pedestrian Improvements	Planning
B	Pave Transit Stops and connect stops via sidewalk or path	Planned	Half Moon Bay to El Granada and Princeton	Project Recommended by Caltrans	Transit Improvements	Planning
B	Hwy 1 operational & safety improvements in SM Co. mid-Coast. (acceleration/ deceleration lanes; turn lanes; bike lanes; pedestrian crossings; and trails	Planned $29M	San Mateo County Midcoast	RTP 2013 Plan Bay Area ID #17060020	Highway Operational Improvements	Completion 2020
B	SR 1 Improvements in Half Moon Bay; left and right turn lanes, bike lanes, bus stops, safety lighting, median and channelization improvements	$19M	Half Moon Bay	RTP 2013 Plan Bay Area ID #17060023	Highway Operational Improvements	Completion 2019
B	Along 7 miles of SR 1 between Half Moon Bay and Pacifica install raised medians, left turn lanes, acceleration lanes, and pedestrian crossings	Planned	Between Half Moon Bay and Pacifica	San Mateo County	SHOPP Coordination	Planning
B	Widen overcrossing at Manor Dr. & new onramp for NB SR 1 at Milagra Drive.	$23.4M	Pacifica	RTP 2013 Plan Bay Area ID #240067	Safety	Completion 2040
B	Construct SR 1 (Calera Parkway) northbound and southbound lanes from Fassler Ave. to Westport Dr.	Programmed $58M	Pacifica	RTP 2013 Plan Bay Area ID #17060034	Roadway Expansion	Project on Hold
B	Repair washout Rock Slope Protection due to storm waves and repair box culver	Programmed $1.4M	El Granada, 0.1 mile N of Coronado St.	2016 SHOPP 4J060	Roadway Preservation Flood Protection	Construction April 2019
B C	Rehabilitate pavement	Programmed $18.9M	Montara, Pacifica, & Daly City, 1.3mi N of 2nd St to Sullivan Ave overcrossing	2016 SHOPP 4H210	Roadway Preservation	Construction Sept 2019

CALTRANS D4 BIKE PLAN (2018)

Link to Plan: https://www.catplan.org/files/managed/Document/268/CaltransD4BikePlan_Report.pdf

Link to Bike Plan webmap of proposed projects:
https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=91f1bb4eb7ff418092977b762b459d01

Link to homepage: https://www.catplan.org/district-4

Contact: Elliot Goodrich - elliot.goodrich@dot.ca.gov

DESCRIPTION

The Caltrans District 4 Bike Plan covers the nine-county San Francisco Bay Area and builds on the 2017 California State Bicycle and Pedestrian Plan, Toward an Active California. The District 4 Bike Plan identifies policies, strategies, and actions for Caltrans and its partners to improve the safety and comfort of bicyclists, including evaluating bicycle needs, identifying proposed improvements, and serves as a resource to inform the selection and scoping of District 4 projects for Caltrans funding. The focus of the Plan is on Caltrans-owned and maintained rights-of-way.

POLICIES OR PROGRAMS

- Three pathways for implementation: maintenance and operations (like the State Highway Operation and Protection Program), other funding sources (like State Active Transportation Program, Senate Bill 1 programs, and State Transportation Improvement Program), and locally sponsored projects and programs. (p.57-58)
- Provide guidance to local agency partners on the Caltrans approval process for complete street improvements on the State network (p.59)
- Explore opportunities to partner with local agencies and organizations on short-term pilot projects and events to promote bicycling (p.59)
- Initiate a bicycle count program for the State transportation network in District 4 (p.59)

PROJECTS

- San Mateo County top tier projects that are expected to cost over $250k; full project list is in Appendix A (p.44)
- District 4 project prioritization tool is available to download as an excel file

Street	To (Cross Street 1)	From (Cross Street 2)	Proposed Project	Page #
Highway 92	Highway 1	Half Moon Bay border	Corridor improvement – Class 1. Potential San Mateo County project to install Class 1 facility on SR 92. (SM-92-C02)	p.45 of Plan, p.43 of Appendix A
Highway 92	Main Street	Half Moon Bay town limit	Corridor Improvement – Class II. Potential San Mateo County project to install Class II bike lanes on SR 92. (SM-02-C01)	p.43 of Appendix A

Highway 1	Roosevelt Blvd	Higgins Canyon Road	Corridor improvement – Class 1. Potential San Mateo County project to install Class 1 facility on SR-1. (SM-1-C01)	p.34 of Appendix A
Highway 1	Highway 92	Wavecrest Road	Corridor Improvement – Class 1. Complete Class 1 bikeways on both sides of Hwy 1. (SM-1-C02)	p.34 of Appendix A
Highway 1	Gray Whale Cove Parking Area	Devil's Slide Trail	Corridor Improvement – Class 1. Provide Class 1 connection from Gray Whale Cove to Devils Slide Trail along Hwy 1. (SM-1-C03)	p.44 of Plan, p.34 of Appendix A
Highway 1	Gray Whale Cove	Half Moon Bay Airport	Corridor improvement – Class 1. Provide Class 1 path in Hwy 1 ROW. (SM-1-C05)	p.35 of Appendix A
Highway 1	Gray Whale Cove		Provide flashing beacon, pedestrian hybrid beacon or other improvement along Hwy 1 at Gray Whale Cove beach parking lot to connect to Gray Whale Cove State Beach. (SM-1-X14)	p.36 of Appendix A
Highway 1	2nd St		Provide flashing beacons or other advance warning for bicyclists crossing Hwy 1 at 2nd St (SM-1-X15)	p.36 of Appendix A
Highway 1	7th St		Provide flashing beacons or other advance warning for bicyclists crossing Hwy 1 at 7th St (SM-1-X16)	p.36 of Appendix A
Highway 1	Capistrano Road	Prospect Way	Intersection improvement at controlled intersection. Potential San Mateo County project to install Class III bike route on Capistrano Road between Prospect Way and SR 1. Also improve crossing at Capistrano Road / SR 1. (SM-1-X05)	p.35 of Appendix A
Highway 1	Capistrano Road		Potential San Mateo County project to improve crossing at Capistrano and SR 1 intersection. Consider closing or reconfiguring free right-turn lane. (SM-1-X08)	p.35 of Appendix A
Highway 1	Highway 92		Potential San Mateo County project to improve crossing at SR 1 and SR 92 intersection (SM-1-X06).	p.35 of Appendix A
Carlos Street	Highway 1	Vermont Ave	Potential San Mateo County project to install Class II Bike Lanes on Carlos St from SR 1 to Vermont Ave. (SM-1-X07)	p.35 of Appendix A
Highway 1	Virginia Ave		Provide Ped Hybrid Beacon or flashing beacons for an improved bike and ped crossing of Hwy 1 in Moss Beach – exact location TBD	p.36 of Appendix A
Highway 1	Cypress Avenue		Potential San Mateo County project to improve crossing at Coronado Street and SR 1 intersection. (SM-1-X10)	p.35 of Appendix A

Highway 1	Half Moon Bay Airport entrance		Potential San Mateo County project to improve crossing at Half Moon Bay Airport and SR 1 intersection. (SM-1-X11)	p.36 of Appendix A
Highway 1	Coronado Street		Potential San Mateo County project to improve crossing at Coronado Street and SR 1 intersection. (SM-1-X09)	p.35 of Appendix A
Highway 1	Mirada Road		Potential San Mateo County project to improve crossing at Mirada Road and SR 1 intersection. (SM-1-X12)	p.35 of Appendix A

Maps and Photos

Map of San Mateo County proposed projects (p.46)

Online webmap:
https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=91f1bb4eb7ff418092977b762b459d01

HALF MOON BAY BICYCLE AND PEDESTRIAN MASTER PLAN (2019)

Link: https://www.half-moon-bay.ca.us/640/Bicycle-Pedestrian-Master-Plan

Description

The Half Moon Bay Bicycle and Pedestrian Master Plan was approved by the City of Half Moon Bay in September 2019. The Plan guides the development of programs and facilities to enhance walking and bicycling as practical, safe, and efficient modes of transportation for residents, worker and visitors of Half Moon Bay. It identifies needs and prioritizes active transportation needs and provides the City with a blueprint to implement a complete network, and with tools to apply for grant funding to support implementation. The Plan was developed by collecting data, identifying key activity generators, engaging community on needs, and identifying solutions.

More recently (2020), the City of Half Moon Bay used "Our Voice," a citizen science data collection tool with a small group of stakeholders to capture geotagged photos and annotate them with text with concerns. Some locations in unincorporated County were identified, including:

- Highway 1 near the Beach House Half Moon Bay (between Surfer's Beach and Sam's Chowder House) with photo of parked cars along Highway 1 and people unloading bicycles and getting ready to cross with text "Recommendation: Divert Hwy 1 along Obispo Rd with parking on the west side for all recreation and businesses."
- Highway 1 north of Sam's Chowder House – "there is also a restaurant (Sams), hotel, RV park, and a skatepark on the same block competing for parking."
- Highway 1 at Surfer's Beach with photo of family crossing Highway 1- "Parking along both sides of Hwy 1 and a dirt lot east of the Hwy creates a dangerous crossing for families and surfers going to the beach."

Projects

Recommended projects that connect to or impact unincorporated areas include:

- Mirada Road / Highway 1 – Pedestrian crossing of Highway 1 with pedestrian hybrid beacon
- Mirada Road / Magellan Ave – Class III Bike Route / Bike Boulevard, and additional corridor study of Mirada Road needed
- East and west sides of Highway 1, from southern HMB to Mirada Road – Class 1 Shared -Use Path
- Mirada Road, south of Magellan Ave (near Coastal Access Point) – Add bicycle parking

Maps and Photos

- Figure 3-2: Pedestrian Recommendations, page 3-4
- Figure 3-8: Recommended Bikeway Network, page 3-10

SAMTRANS COASTSIDE TRANSIT STUDY (2018)

Link: https://www.samtrans.com/Planning/Planning_and_Research/Coastside_Transit_Study.html

DESCRIPTION

Between April 2017 and May 2018, SamTrans conducted a study of bus service on the Coastside, including Pacifica, Half Moon Bay, and other Coastside communities like Montara, El Granada, and Moss Beach. The Study was adopted by the SamTrans Board of Directors on August 1, 2018. As part of the study, SamTrans staff evaluated existing SamTrans bus service on the coast and conducted an assessment of transit needs for the area. Staff also reviewed origin/destination trip data for the Coastside and recent and historic operations data, such as ridership and cost per passenger.

The study's goals were to:

- Engage with Coastside community members about SamTrans bus service and hear their ideas
- Evaluate potential demand for additional or modified bus service
- Consider recommendations for bus service concepts that maximize efficiency and provide the best service possible to meet the community's needs.

The study included two rounds of community outreach. Meetings were held in Half Moon Bay and Pacifica in April 2017 to kick off the project and hear from the community about their transit needs. A second round of meetings was held in the same cities in late January/early February 2018 to share draft recommendations.

An estimated 17,000 trips are made from or within the coastside each morning; about 8.700 remain on the coast and 8,300 leave for other destinations (p.19).

POLICIES OR PROGRAMS

Based on input from the community and technical analysis, SamTrans staff developed a set of Coastside service recommendations for both near-term and longer-term implementation.

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 will be 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 will be an ongoing effort in 2018.*

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.

The Plan also recommended initiatives for future study, including:

- Establish SamTrans goals for providing service on the coastside – develop a set of goals as part of either an upcoming Short Range Transit Plan (SRTP) or **Comprehensive Operations Analysis (COA)**
- Explore whether a coastside bike share system could help address mobility needs
- Analyze complementary weekend trip-making data for patterns – evaluate how trip patterns may differ between weekdays and weekends
- Consider re-introduction of Express Bus service from the coast – An express bus service used to exist between Pacifica and downtown San Francisco. SamTrans re-evaluated this opportunity and the route did not meet the daily trips threshold to be included as a route in the Express Bus Study. A challenge is heavily congested freeway conditions that would cause the route to be 30 min longer with less reliability.
- Continue regular evaluation of bus service on the coast – continue to monitor performance and demand for bus service on the coastside. Initiatives for future consideration include weekend bus service and late evening hours, more frequent bus service, extended service into SF, and service using smaller vehicles

C/CAG BIKE/PED PLAN (2011, 2021)

Contact: Mikaela Hiatt, mhiatt@smcgov.org

Link to Draft Plan Webmap: https://tooledesign.github.io/F0066-San-Mateo-CCAG/

Link to homepage: https://bikewalkccag.com/

Link to 2011 San Mateo County Comprehensive Bicycle and Pedestrian Plan: https://performance.smcgov.org/Livable-Community/San-Mateo-County-Comprehensive-Bicycle-and-Pedestr/r4g3-aghc

Description

City/County Association of Governments of San Mateo County Countywide Bicycle & Pedestrian Plan (CBPP) update will set forth detailed goals and objectives to provide an interconnected system of safe, convenient and universally accessible bicycle and pedestrian facilities, for both transportation and recreation throughout San Mateo County. The update builds upon the 2011 Comprehensive Bicycle and Pedestrian Plan to identify opportunities and resources to address the planning, design, funding, and implementation of bicycle and pedestrian projects of countywide significance. As a funding agency, C/CAG's Plan will help guide regional resources.

Projects

The Draft Plan's webmap shows Highways 1 and 92 throughout the Midcoast as part of the county "backbone" network. Connect the Coastside's recommended alignment of the Parallel Trail (with portion along Carlos Street) is also included as part of the network. Portions of Princeton and El Granada near Highway 1 are "pedestrian focus areas." Several stakeholders have commented on the webmap for the recommended Class III Bike Route with Wide Shoulders along Highway 92, requesting a better (Class II) facility or not listing it as a designated route due to safety concerns.

UNINCORPORATED SAN MATEO COUNTY ACTIVE TRANSPORTATION PLAN (2021)

Link to Draft Plan: https://tooledesign.github.io/uninc_smc/pdf/

Link to Draft Appendices: https://tooledesign.github.io/uninc_smc/appendix/

Link to homepage: https://walkbikesmc.org/

Contact: Julia Malmo-Laycock, jmalmolaycock@smcgov.org

Description

The Unincorporated San Mateo County Active Transportation Plan provides a framework to improve active transportation conditions for people walking and biking throughout unincorporated county communities, and includes proposed projects, programs, and policies to do so. The Plan prioritizes projects in unincorporated areas across the Bay Side and Coast side. As of October 2020, the Draft Plan was available for review and comment with a Final Plan anticipated to be released and submitted for approval in 2021.

Policies or Programs

- Existing programs and policies (p.71)
    - Safe Routes to School, operated by the County Office of Education includes education and encouragement programs for students
    - Traffic Calming through the Department of Public Works residential speed control device program
    - Complete Streets resolution (2013)
- Proposed programs and policies (p.72)
    - Employ traffic calming strategies in locations where traffic speeds are too high for pedestrian or bicyclists comfort and areas where anticipated active transportation demand is high.
    - Consider establishing 15 mph school zones and other slow zones near parks, community facilities or senior housing.
    - Work with BART, SamTrans and Caltrain and neighboring jurisdictions to identify infrastructure and programmatic improvements to increased pedestrian, bicycle, and micromobility access to transit.
    - Provide amenities for recreational bicyclists at key locations, for instance on the coastside.
    - Implement short-term interim, high visibility bicycle demonstration or 'pop-up' projects to serve as models that can be applied throughout the county.
    - Develop strategies for rapid network implementation treatments.
- Ongoing high priority county projects, including the Midcoast Multimodal Parallel Trail (p.79)
- Appendix F contains funding sources and descriptions

Projects

- Detailed infrastructure recommendations are available in Appendix D - https://oohwalkbikesmc.blob.core.windows.net/media/Default/Documents/UnincSMC_ActiveTransPlan_AppD_InfrastructureRecs.pdf
- Downtown Montara, Mavericks Event Center (Princeton), and Downtown El Granada were assessed for pedestrian priority destinations (p.67) and conceptual drawings are in Appendix D
- Main Street in Montara and Avenida Alhambra in El Granada project fact sheets are available in Appendix D

Maps and Photos

- Existing bicycle network (p.25)
- Bicycle collisions in Unincorporated San Mateo County (2013-2017) (p.28)
- Proposed Bicycle Network (p.32)
- Proposed Bicycle Network – El Granada, Miramar, Montara, Moss Beach, Princeton (p.35)
- Pedestrian Collisions in Unincorporated San Mateo County (2013-2018) (p.52)
- Pedestrian Focus Areas and Community-Identified Gaps (p.58)
- Pedestrian Focus Areas and Community-Identified Gaps – El Granada, Miramar, Montara, Moss Beach, Princeton (p.61)

CALTRANS D4 PED PLAN (2021)

Link: https://www.catplan.org/district-4

Contact: Gregory Currey, gregory.currey@dot.ca.gov

Description

The Caltrans District-level plans are expected to ultimately lead to an increase in active transportation projects to support a shift in mode-share to active transportation trips. They are also intended to identify opportunities to re-connect communities where transportation facilities have historically created community barriers (Toward an Active California, Chapter 5, E2.1 and S1.1). The District-Level Active Transportation Plans will be data-driven, action-oriented, and project delivery-oriented. The identified bicycle and pedestrian needed improvements – “location-based needs” – will be documented so that they can be incorporated into system and corridor planning, project initiation documents, asset management, and project delivery. Currently under development, the Caltrans District 4 Pedestrian Plan will identify pedestrian needs on and across State highways and develop a comprehensive strategy to address safety concerns. The Planning Team is still collecting community input using Street Story, a tool developed by SafeTREC at UC Berkeley (https://streetstory.berkeley.edu/).

SAN MATEO COUNTY SUSTAINABLE STREETS PLAN (2020)

Link: https://www.flowstobay.org/data-resources/plans/sustainable-streets-master-plan/

DESCRIPTION

The San Mateo Countywide Water Pollution Prevention Program is creating a San Mateo County Sustainable Streets Master Plan. Within the context of a street, the term "green streets" is often used to describe streets that have green infrastructure built into the sidewalks and roadways, allowing water to soak into the land rather than drain straight to the bay or ocean. Transportation planners refer to streets that are designed with enhanced bus stops, cycle tracks, pedestrian-oriented road-crossings, and other improvements to facilitate mobility of all users of the road as "complete streets." Taken together, green infrastructure and complete streets can maximize the benefits of each and lead the way towards what we call "sustainable streets." This long-term planning effort builds on years of watershed modeling and stakeholder input, and will take a closer look at how and where to build sustainable streets in San Mateo County that integrate stormwater management with local priorities, like bike and pedestrian mobility, transit improvements, climate change adaptation, and more. The plan will also use down-scaled climate data to anticipate future changes in rainfall and how we need to account for climate change with respect to sustainable streets planning, design, and construction. The Plan is still in development.

SAN MATEO COUNTY GREEN INFRASTRUCTURE PLAN

Link: https://www.smcsustainability.org/download/energy-water/SMC-GI-PLAN-Final_09-17-19-with-Appendices.pdf

DESCRIPTION

Approved by the San Mateo County Board of Supervisors on September 17, 2019, the San Mateo County Green Infrastructure (GI) Plan intends to reduce the impact of urban development on waterways and comply with the requirements of the Municipal Regional Stormwater Permit. The Plan must show how the County plans to shift from "gray" storm drain infrastructure, which channels polluted runoff directly into waters without treatment, to a more resilient system of "green" infrastructure. Green Infrastructure uses vegetation, soils, and stormwater capture facilities to mimic natural processes, manage stormwater, and create healthier urban environments. The GI Plan represents the County's long-term strategy to incorporate GI into both private and public spaces in unincorporated communities.

The Midcoast (urban areas of Montara, Moss Beach, Princeton, El Granada, and Miramar) are called out as focus areas with characteristics beneficial for GI implementation. The Midcoast watersheds include Montara Creek, Dean Creek, San Vicente, Denniston Creek, El Granada Creek, and Arroyo de en Medio Creek (p.11).

POLICIES OR PROGRAMS

- Section 4.2.4 Midcoast describes opportunities and challenges for GI.
  - Connect the Coastside, which includes specific transportation improvements, can serve as an opportunity to implement GI

- Stormwater conveyance in the rural midcoast is already managed by vegetated ditches, which serve similar functions as GI

- Chapter 5 includes a series of metrics to prioritize potential projects, including green streets, low impact development, and others.
- Appendix C includes the County's Green Infrastructure Design Guidance (p.147)

PROJECTS

- Early implementation green streets projects include:
    - Fitzgerald Marine Reserve Parking Lot: A trench drain was installed, along with 400 square feet of bioretention, to treat drainage from a parking lot at the Fitzgerald Marine Reserve in Moss Beach. The project treats a drainage area of 9,375 square feet. The project was completed in November 2014.
    - Carlos Street: Two bioretention areas were installed on Carlos Street between California Avenue and Virginia Avenue in front of the San Mateo County North Coast Substation in Moss Beach. The bioretention bulbouts receive sheet flow runoff from the sidewalk and runoff from the roadway via curb cuts. The bioretention areas include an underdrain placed 6 inches above the bottom of the aggregate storage layer. The project was completed in 2017.

MAPS AND PHOTOS

High Priority Zoning: The County identified high priority areas for implementing GI based on zoning designations; Figure 5-7 (page 68)

COUNTY CLIMATE ACTION PLAN (2012, 2013, AND 2021)

Link: https://www.smcsustainability.org/climate-change/climate-action-plans/

Description

Local governments have a role to play in helping the State achieve its climate goals. California's Climate Change Scoping Plan encourages local governments to adopt goals to reduce greenhouse gas (GHG) emissions by 15% below 1990 levels by 2020, 40% below 1990 levels in 2030, and 80% below 1990 levels by 2050. Climate action plans are comprehensive roadmaps that outline the specific activities that an agency will undertake to reduce greenhouse gas emissions. San Mateo County has two Climate Action Plans currently in place – a Government Operations Climate Action Plan and a Community Climate Action Plan. The Office of Sustainability is responsible for the update and implementation of both Plans, ensuring that the County meets its GHG emissions reduction commitments. A primary purpose for developing a Community Climate Action Plan (also called an Energy Efficiency Climate Action Plan or EECAP) is to streamline future environmental review of development projects by following CEQA guidelines and meeting the Bay Area Air Quality Management District's (BAAQMD) expectations for a Qualified GHG Reduction Strategy.

Findings (from 2013 EECAP)

- Midcoast communities are designated as "Urban Coastal" (p.4)
- In 2005, transportation accounted for over 60% of all emissions in the County (p.26)
- Commercial and residential energy use accounted for another 28% of all emissions in the county

GHG Reduction Strategies (from 2013 EECAP)

- Goal 5: Design for Mobility and Connectivity
  - Measure 5.3: Impact fees – Create an impact fee program for new projects to encourage development in locations with high accessibility to destinations such as jobs, retail, and other attractions. (p.66)
- Goal 6: Non-Motorized and Alternative Travel
  - Measure 6.2: Traffic Calming in New Construction and Complete Streets – Require larger new projects (including existing projects with major renovations) to evaluate and implement appropriate traffic calming measures at the site, as determined through the plan review process. (p.68)
  - Measure 6.3: Traffic Impact Fund – Use the impact fee program discussed in Measure 5.2 to fund transit improvements, optimization, and expansion in the county. (p.69)
  - Measure 6.4: Expand Transit – Work with SamTrans to optimize the local transit network by adding or modifying existing transit service to enhance service near future project sites and areas of future demand in the unincorporated county. (p.70)
- Goal 7: Commute Trips
  - Measure 8.4: Work Shuttles – Promote expansions of worker shuttle programs (p.74)
- Goal 9: School-related Travel
  - Measure 9.1: Alternative School Transit - Promote school shuttle programs to reduce vehicle miles traveled (VMT).

SOUTHERN SKYLINE BOULEVARD RIDGE TRAIL EXTENSION (SFPUC 2020)

Link: https://sfwater.org/index.aspx?page=1034

Description

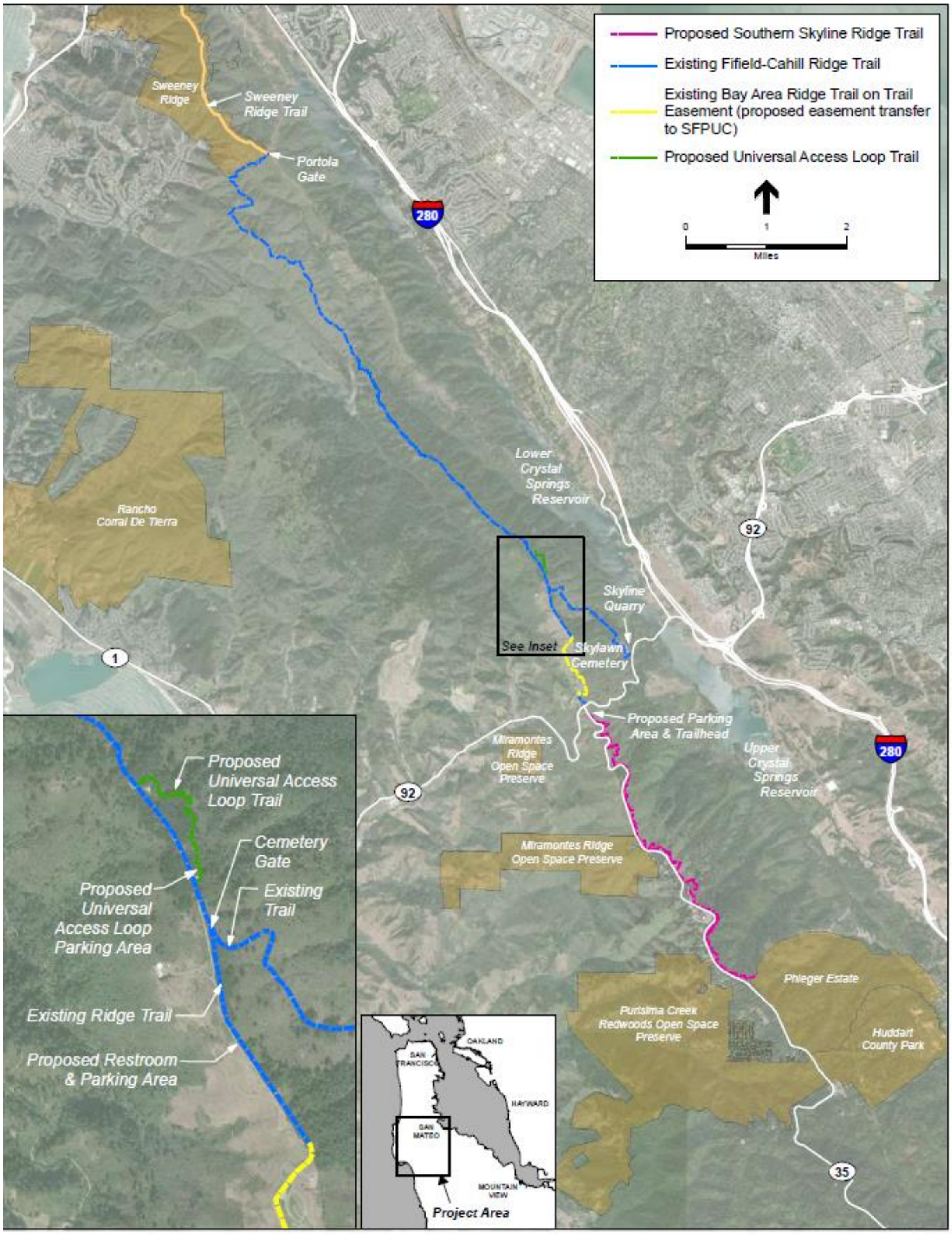
The San Francisco Public Utilities Commission (SFPUC) recently released a Draft Environmental Impact Report for the Southern Skyline Boulevard Ridge Trail Extension Project. SFPUC proposes to improve and develop recreational trails and associated facilities located within the Peninsula Watershed in central San Mateo County in order to extend and enhance the Bay Area Ridge Trail, improve the existing Fifield-Cahill ridge trail, and enhance public awareness of the watershed and SFPUC's role. The Peninsula Watershed property is owned by the City and County of San Francisco and managed by the SFPUC. The project is a component of the SFPUC's Peninsula Watershed Management Plan. The project area includes watershed lands along the Fifield-Cahill ridge trail, which is approximately 1.5 miles north of the State Route 92 (SR-92)/State Route 35 (SR-35) intersection (north of the Skylawn Memorial Park), and watershed lands extending south from SR-92 approximately 6 miles to the Phleger Estate boundary and east from SR-35 a few hundred feet.

The SFPUC does not propose to connect segments of the Bay Area Ridge Trail north and south of S.R. 92, nor does it propose to facilitate or otherwise encourage pedestrian, bicycle, or equestrian crossing of S.R. 92. Trail users attempting to cross S.R. 92 near its intersections with Lifemark Road or S.R. 35 would create potentially hazardous conditions for them. S.R. 92 carries approximately 26,800 to 28,900 vehicles per day in this area, is congested when traffic volumes. The DEIR preferred Alternative B, Relocated Parking Lot and Trailhead South of SR-92, would avoid the significant-and-unavoidable-with-mitigation impact related to traffic hazards by relocating the parking lot and trailhead for the southern skyline ridge trail from the proposed location at the intersection of S.R. 92/S.R. 35 to a new location approximately 1.5 miles south of S.R. 92, near the site of a proposed permanent access drive and temporary construction staging. This reduced trail alignment would accommodate multimodal access and include docent-led, unsupervised/unrestricted, or unsupervised/restricted access. The 1.5-mile gap between S.R. 92 and the relocated trailhead of the southern skyline ridge trail would substantially reduce the likelihood that visitors of one trail segment would attempt crossing S.R. 92 to reach the opposite segment.

Caltrans has explored various options to address existing congestion concerns (without the proposed project) at the intersection of SR-92 and SR-35 in the past due to Level of Service F for vehicles northbound on SR-35 turning left to westbound SR-92 during weekday peak hours. Options explored include traffic signals, roundabout and grade separation. The SFPUC intends to work with Caltrans to formulate and execute an agreement on the design, funding, and construction a solution to reduce potentially hazardous conditions for trail user access across S.R. 92 near its intersections with S.R. 35 and Lifemark Road. The agreement shall also provide for the construction of new sidewalks connecting the selected crossing improvement (i.e., bridge or roundabout) to the existing adjacent Bay Area Ridge Trail segment along Lifemark Road to the north, and the southern skyline ridge trail trailhead and parking area approximately 300 feet to the south. SFPUC's financial contribution in the agreement shall be roughly proportional to the project's impact.

MAPS AND PHOTOS

Figure 2-2 – Project Overview and Regional Setting



REIMAGINE SAMTRANS (2021)

Link: https://www.reimaginesamtrans.com/

DESCRIPTION

In summer 2019, SamTrans launched "Reimagine SamTrans" an effort to undergo a comprehensive operational analysis (COA) to identify the challenges in the current bus system using data and public engagement, and identify opportunities to improve SamTrans service. The overarching goals of Reimagine SamTrans are to improve the transit experience, grow new and more frequent ridership, and build SamTrans' efficiency as a mobility provider. Recommendations from Reimagine SamTrans could include route, system, and/or vehicle size changes, improved connectivity with regional providers, new service models or pilot programs, and more. The effort provides an opportunity for Midcoast residents to share their transit needs and concerns directly with SamTrans and identify potential solutions. SamTrans put a hold on the effort due to the COVID-19 public health crisis and plans to restart the project in 2021.

CALTRANS STATE HIGHWAY OPERATION AND PROTECTION PROGRAM (2020)

Link: https://dot.ca.gov/programs/financial-programming/state-highway-operation-protection-program-shopp-minor-program-shopp

DESCRIPTION

The Office of State Highway Operations and Protection Program (SHOPP) Management has primary responsibility for planning, developing, managing and reporting the four-year SHOPP portfolio of projects. This includes preparation of the four-year program, participating in the development of the State Highway System Management Plan, coordinating the formal amendment of adopted SHOPP projects, coordinating with California Transportation Commission (CTC) staff, management of the annual Minor Program, coordination with Districts and Headquarters divisions, and upkeep of project information in the Department's California Transportation Improvement Program System (CTIPS) database.

PLAN BAY AREA 2050 (2020)

Link: https://www.planbayarea.org/

DESCRIPTION

Plan Bay Area 2050 is a long-range plan charting the course for the future of the nine-county San Francisco Bay Area, and serves as the Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS). Plan Bay Area 2050 focuses on four key issues — the economy, the environment, housing and transportation — and will identify a path to make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. Building on the work of the Horizon initiative, this new regional plan outlines strategies for growth and investment through the year 2050, while simultaneously striving to meet and exceed federal and state requirements. The Metropolitan Transportation Commission and the Association of Bay Area Governments are expected to adopt Plan Bay Area 2050 in fall 2021. Plan Bay Area 2050 neither funds specific infrastructure projects nor changes local policies. Cities and counties retain all local land use authority. Plan Bay Area 2050 does identify a potential path forward for future investments — including infrastructure to improve our transportation system and to protect communities from rising sea levels — as well as the types of public policies necessary to realize a future growth pattern for housing and jobs. In order for certain projects to be eligible for funding, they must be in and/or consistent with the RTP/SCS. The Plan will include a final project list, similar to what was prepared for Plan Bay Area 2040 (https://projects.planbayarea.org/). The draft of Plan Bay Area 2050 had not been released as of 11/15/20.

POLICIES OR PROGRAMS

The Midcoast is not identified as a priority development or production area (see Growth Geographies: https://www.planbayarea.org/sites/default/files/PBA2050_Blueprint_Geographies_High_Resolution.pdf

Final Blueprint Strategies (https://www.planbayarea.org/sites/default/files/PlanBayArea2050_FinalBlueprint_Strategies.pdf): Contains a variety of strategies that are largely aimed at reducing single occupancy vehicle driving, encouraging transit use, walking, and bicycling, encouraging affordable housing, allowing for a greater mix of housing/density types, and more.

PROJECTS

Plan Bay Area 2040 included RTP ID# 17-06-0020 for operational and safety improvements for vehicles, bicycles, and pedestrians, along the Highway 1 corridor between Half Moon Bay and Pacifica. This could include acceleration lanes, deceleration lanes, turn lanes, bike lanes, enhanced crossings, and trail network improvements, with an estimated $29 M cost.

HALF MOON BAY LAND USE LOCAL COASTAL PROGRAM UPDATE (2020)

Link: https://planhmb.org/

DESCRIPTION

At their October 20, 2020 regular meeting, the City Council unanimously voted to approve the Local Coastal Land Use Plan Update and submit it to the California Coastal Commission for certification. The Local Coastal Land Use Plan (LCLUP) is the Land Use Plan component of the City of Half Moon Bay's Local Coastal Program. It was comprehensively updated in 2020 and contains the primary policies governing land use and development within the city.

DISCUSSION

- Development policies begin on p.2-19, including policies on lot retirements, development intensity reductions, transfer of development rights, lot mergers, and development impact fees
- Land Use Plan Buildout is discussed in Chapter 3 (p.3-5). The City presents two levels of buildout projections: first for the 2040 planning horizon and the second for the maximum theoretical buildout (MTB). The 2040 horizon helps foresee near term infrastructure needs, while MTB uses an extreme scenario if all potential development sites were developed to analyze longer-term infrastructure capacity.
- The San Mateo County LCP was updated in 2013 and similarly included Midcoast growth projections for "Phase 1" and "Buildout" scenarios. For coordination purposes, the County's LCP "Phase 1" projections are understood to be reasonably aligned to this LUP's 2040 planning horizon; and the "Buildout" scenario represents a maximum buildout without an assumed end year as is the case for this LUP's MTB scenario. The Half Moon Bay and San Mateo County unincorporated Midcoast buildout projections are summarized below in Table 3-1, and the assumptions and calculations for the projections are provided in Appendix B.
- Circulation systems are described beginning on p.3-31. The LCLUP calls for review of alternative or additional performance standards to be studied including the Delay Index (p.3-33).

Table 3-1. City of Half Moon Bay and Midcoast Buildout Summary

	2018	2040 Projections	MTB
Dwelling Units[1]			
Midcoast Total	9,210	11,028	14,006
Half Moon Bay	4,830	5,612	7,051
Unincorporated Midcoast	4,380	5,416	6,955
Population[2]			
Midcoast Total	23,909	28,532	35,347
Half Moon Bay	12,565	14,535	18,262
Unincorporated Midcoast	11,344	14,027	17,085
Employment (Jobs)[3]			
Midcoast Total	7,930	11,047	------
Half Moon Bay	5,379	6,053	7,684
Unincorporated Midcoast	2,551	4,994	------

[1] Residential Dwelling Units:
Half Moon Bay:
- Existing: 2013-2017 American Community Survey, City of Half Moon Bay GIS, and City of Half Moon Bay building permits data.
- 2040 Projections and Maximum Theoretical Buildout: Land Use Plan Appendix B.

Unincorporated Midcoast:
- Existing and 2040 Projections: Connect the Coastside (Public Working Draft), January 15, 2020, page 37, 2014 data including 80 additional dwelling units for 2014-2018 per San Mateo County Planning staff.
- Maximum Theoretical Buildout: San Mateo County LCP 2013, page 2.45.

[2] Population:
Half Moon Bay:
- Existing: 2013-2017 American Community Survey.
- 2040 Projections and Maximum Theoretical Buildout: Assumes 2.59 persons per residential dwelling units per 2013-2017 American Community Survey.

Unincorporated Midcoast:
- Existing and 2040 Projections: Connect the Coastside (Public Working Draft), January 15, 2020, 2014 data adjusted to account for population associated with 20 additional dwelling units per year from 2014-2018 per San Mateo County Planning staff.
- Maximum Theoretical Buildout: San Mateo County LCP 2013, page 2.45, Table 2.21.

[3] Employment:
Half Moon Bay:
- Existing: Half Moon Bay Economic and Real Estate Conditions and Trends, Economic and Planning Systems, July 2014; augmented with City of Half Moon Bay planning and building permit data from 2014 – 2018.
- 2040 Projections and Maximum Theoretical Buildout: Land Use Plan Appendix B.

Unincorporated Midcoast:
- Existing and 2040 Projections: Connect the Coastside, (Public Working Draft), January 15, 2020, page 38.
- Maximum Theoretical Buildout: San Mateo County, ABAG, and other data sources do not include jobs projections for the unincorporated Midcoast for the maximum theoretical buildout condition.

- Public Works policies begin on p.3-42 and include monitoring growth and infrastructure capacity, advancing a road network and town boulevard initiatives that meet multimodal needs, limiting higher-trip generating development, establishing thresholds of significance for VMT, and others.
- Bicycle and Pedestrian Coastal Access policies begin on p.5-23 and include completing the Eastside Parallel Trail, advancing highway crossings, studying the long-term alignment of the California Coastal Trail and improving the California Coastal Trail, and others.
- Parking, Transit, and Alternate Modes policies begin on p.5-29 and include encouraging improvements to parking systems to accommodate visitor surges during peak periods, a comprehensive signage program, bus shelters, community shuttle service, and effective transit services.

Maps and Photos

- Figure 1-1: Regional Setting (p.1-6)
- Table 1-1: Existing Land Uses in the Planning Area (p.1-45)
- Figure 1-10: Existing Land Uses (p.1-46)
- Figure 2-1: Land Use Map (p.2-7)
- Figure 2-2: Town Center (p.2-17)
- Figure 2-3: Established Neighborhoods and Planned Developments (PDs) (p.2-28)
- Screenshot ad drop in or bullet with page number

SAN MATEO COUNTY TRANSPORTATION AUTHORITY STRATEGIC PLAN (2020-2024)

Link: https://www.smcta.com/about/Strategic_Plan_2020-2024.html

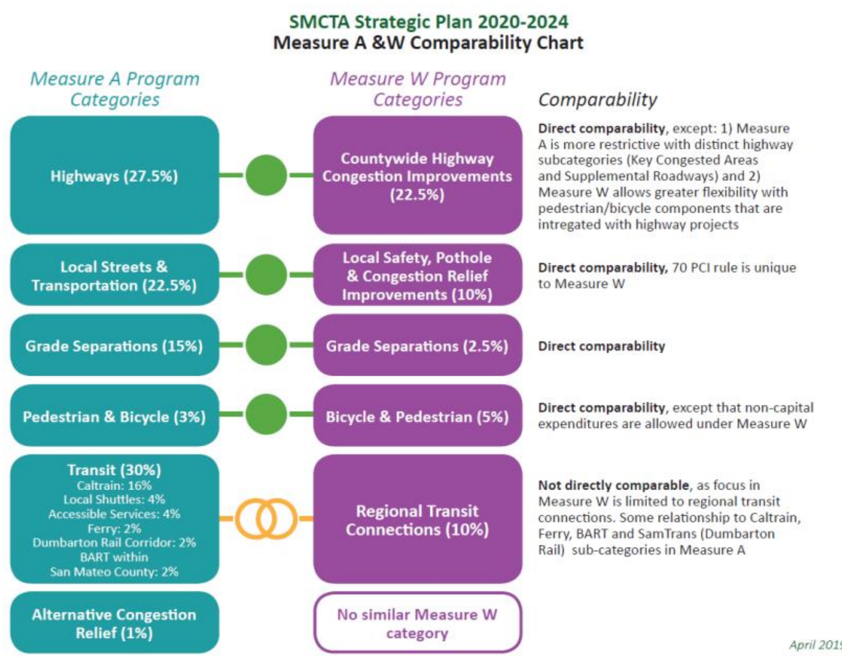
Description

The San Mateo County Transportation Authority (TA) Board approved its Final Strategic Plan 2020-2024 on December 5, 2019, which outlines the principles, vision, goals, and implementation procedures for Measure A and 50% of Measure W. The purpose of the Plan is to provide policy guidance for the implementation of the Measures A and W transportation sales tax programs that the TA is tasked with administering. Both programs are an important source of funding for implementation of transportation projects.

Policies or Programs

- Table 2-1: Measure A Program Category Details (p.4) describes the purpose of each Measure A program category and allocated percentage of funding
- Table 2-2: Measure W Program Category Details (p.8) describes the purpose of each Measure W program category and allocated percentage of funding

Figure 3-2: Measure A & W Comparability Chart



- Section 6 (p.41) identifies the programming and allocation guidelines, including the Project Selection Approach for each category in Table 6-3 (p.43)
- Section 7 (p.51) describes funds management, including requirements regarding matching funds
- The Short Range Highway Plan (SRHP) and accompanying Capital Improvement Program informs the competitive project selection process for the Measure W Countywide Highway Congestion Improvements Program
- The TA will also prepare a Regional Transit Connections Planning Study and accompanying CIP in coordination with the TA's regional transit program for the Measure W Regional Transit Connection Program funds selection process

SAN MATEO COUNTY TRANSPORTATION AUTHORITY SHORT-RANGE HIGHWAY PLAN (2011-2021)

Link: https://www.smcta.com/Programs/Highway.html

DESCRIPTION

In 2004, San Mateo County voters approved a half-cent transportation sales tax (New Measure A) and accompanying Transportation Expenditure Plan (TEP); Measure A is a 25-year program (2009-2033). The San Mateo County Transportation Authority (TA) adopted a Strategic Plan and Implementation Plan in 2008 and 2009 to guide Measure A program expenditures and provide policy parameters. This direction called for the development of a short-range highway plan to advance the overall "Highways" program. This Plan is a 10-year outlook to guide investment decisions and develop a capital improvement plan over time. Once the Plan is adopted, it is regularly updated by the TA and serves as the basis for a call for projects and is used to make short-term funding decisions.

2004 Measure A TEP has 6 programs – Highways Program is one of them, which is divided into two areas: Key Congested Areas which focus on removing bottlenecks in the most congested highway commute corridors and Supplemental Roadways which focus on reducing congestion and improving throughput. (p.4) The Highways Program receives 27.5% of the total sales tax revenue collected for the New Measure A program (17.3% for KCA and 10.2% for SR). The program is oversubscribed and describes funding challenges and the shortfalls (p.7).

POLICIES OR PROGRAMS

The established policies in the TEP, Strategic Plan and Implementation Plan are the following:

1. New Measure A revenues will only be used to fund New Measure A projects. They cannot be used to fund Original Measure A projects unless they are also included in the New Measure A Program.
2. Funding caps established in the Measure A must be met. The TEP sets funding caps for the total program, KCA subcategory, and SR subcategory.
3. Pay as you go. Funds will be allocated based on amounts collected annually. If there is a compelling need to advance funds from future years, an exceptional case justification and Board action will be required.
4. Funding match goals should be met. The matching goal for other funding is 50 percent for KCA projects and 30 percent for SR projects. Given the shortfall, leveraging funds will be critical to advancing the total program.

Projects

Table 1. Key Congested Areas Projects, Status and Estimated Sales Tax Contribution by Corridor			
Corridor	**Sales Tax***	**Projects**	**Status****
Highway 280 (I-280) North Improvements	$77M	Reconstruct I-280/State Route 1 Interchange	CS
		Construct Auxiliary Lanes between I-380 and Hickey Blvd.	Not initiated
Coastside Highway Improvements	$24M	State Route 1/San Pedro Creek Bridge Replacement	E&D
		State Route 1/Manor Drive Overcrossing improvement and widening	CS
		State Route 1 and 92 safety and operational improvements within and in the proximity of Half Moon Bay	CS
Highway 92 (SR-92) Improvements	$50M	Auxiliary Lanes and interchange improvements between I-280 and the San Mateo Hayward Bridge	CS
Highway 101 (US-101) Mid-County Improvements	$49M	Reconstruction of the US-101/Broadway Interchange	E&D
		Modification of the US-101/Peninsula Avenue Interchange	CS
		Operational Improvements on US-101 from Hillsdale to State Route 92	CS
Highway 101 (US-101) South Improvements	$60M	Reconstruct the US-101/Woodside Road Interchange	CS
		US-101 improvements between State Route 84 and the Santa Clara county line and access improvements to the Dumbarton Bridge	CS
Total:	**$260 million**		

* *As estimated in the 2004 Measure A Transportation Expenditure Plan*
** *CS (Conceptual Studies); E&D (Environmental & Design); C (Construction)*

Table 2. Supplemental Roadways Candidate Projects and Status Estimated Sales Tax Contribution $153 million*	
Candidate Projects	**Status****
State Route 35 (I-280 - Sneath Lane) widening	Not initiated
US 101/Produce Avenue Interchange	CS
State Route 92 (I-280 to State Route 35) truck climbing lane	E&D
Willow Road adaptive signal control system	Not initiated
US-101 (Sierra Point Pkwy - SF/SM County Line) auxiliary lanes	CS
Geneva Ave extension	CS
I-280/John Daly Blvd - Overcrossing (north side) widening	Not initiated
Junipero Serra Blvd Improvements in Daly City, Colma, and South San Francisco	Project Complete
US-101/Candlestick Point Interchange	CS
US-101(Sierra Point Pkwy - San Bruno Ave) auxiliary lanes	CS
I-280/I-380 local access improvement	CS
US-101/Sierra Point Pkwy Interchange replacement and Lagoon Way extension	CS
Triton Drive widening (Foster City)	E&D
Sand Hill Road signal coordination	Not initiated
Woodside Road Widening (US-101 - El Camino Real)	E&D

** As identified in the 2004 Measure A Expenditure Plan*
*** CS (Conceptual Studies); E&D (Environmental & Design); C (Construction)*

Chapter 7 includes the Technical Evaluation Criteria and Ranking (p.10)

- Key Congested Areas Technical Project Ranking by Type (Arterial)
    - 1 State Route 1 and 92: Make Safety and Operational Improvements within and in the proximity of Half Moon Bay
    - 2 State Route 1: Manor Drive overcrossing improvement and widening
    - 3 State Route 1: San Pedro Creek Bridge Replacement
- Supplemental Roadways Technical Project Ranking by Type
    - 2 State Route 92: Add truck climbing lane between I-280 and SR 35

SAN MATEO COUNTYWIDE TRANSPORTATION PLAN 2040 (2017)

Link: https://ccag.ca.gov/wp-content/uploads/2014/05/SMCTP-2040-FINAL_.pdf

DESCRIPTION

The San Mateo Countywide Transportation Plan for 2040 (SMCTP 2040) was conceived by San Mateo County leaders as a way to provide the county with a long-range, comprehensive transportation planning document that sets forth a coordinated planning framework and establishes a systematic transportation planning process for identifying and resolving transportation issues. Transportation planning and programming is undertaken by many agencies with sometimes overlapping jurisdiction, including the San Mateo County Transit District, Transportation Authority, C/CAG, Caltrans, BART, Caltrain, and MTC. SMCTP 2040 is intended to articulate clear transportation planning objectives and policies and to promote consistency and compatibility among all transportation plans and programs within the county. By doing so, SMCTP 2040 supports an integrated, system-wide approach to transportation planning that gives proper consideration to the countywide transportation network as a whole, not just in its constituent parts. In general, the approach includes:

- Enhancing transit capacity, service frequency, and connectivity
- Getting the most out of existing infrastructure using managed lanes, intelligent transportation systems, and transportation systems management
- Managing demand through employer-based trip reduction programs, parking policy, and pricing
- Improving safety for bicyclists and pedestrians

POLICIES OR PROGRAMS

- Policies related to the roadway system begin on p.41 and include: Enhancing safety for travel by motorized modes, including consideration of roundabouts and separate lanes or facilities for non-motorized modes where feasible
- Policies related to bicycles begin on p.47 and include:
  - Integration with public transit, including installing bicycle parking
  - Safety, including providing support for programs that educate drivers and bicyclists
  - Complete Streets, including complying with existing Caltrans and MTC complete streets policies
  - Barriers to bicycle access and circulation, including reducing barriers to access caused by freeways among others
- Policies related to pedestrians begin on p.56 and include similar policies to the above for bicyclists.

APPENDIX D – VEHICLE COUNTS COMPARISON

Comparison of Midcoast Vehicular Count Data during AM and PM Peak Periods at Key Intersections

			AM from 7 am to 9 am				PM from 4 pm to 6 pm				Weekend from 11 am to 1 pm				
Major Street	**Minor Street**	**Date of Data Collection**	**Major St (N Bound)**	**Major St (S Bound)**	**Minor St (E Bound)**	**Minor St (W Bound)**	**Major St (N Bound)**	**Major St (S Bound)**	**Minor St (E Bound)**	**Minor St (W Bound)**	**Major St (N Bound)**	**Major St (S Bound)**	**Minor St (E Bound)**	**Minor St (W Bound)**	**Source**
Highway 1	16th Street	Apr-17	1,222	940	8	3	1,271	1,563	19	3	1,320	1,805	5	3	Cypress Point Traffic Impact Analysis
Highway 1	16th Street	Jul-19	1,146	829	4	1	1,219	1,466	11	3	1,212	2,027	21	5	Draft ICE Analysis
	Percent change		*-6%*	*-12%*	*-50%*	*-67%*	*-4%*	*-6%*	*-42%*	*0%*	*-8%*	*12%*	*320%*	*67%*	
Highway 1	Carlos Street	Jun-14	1,100	832	-	32	1,140	1,419	-	13	1,853	2,451	n/a	n/a	Connect the Coastside
Highway 1	Carlos Street	Apr-17	764	504	-	20	672	840	-	-	1,311	1,765	-	18	Draft ICE Analysis
	Percent change		*-31%*	*-39%*	*n/a*	*-38%*	*-41%*	*-41%*	*n/a*	*-100%*	*-29%*	*-28%*	*n/a*	*n/a*	
Highway 1	California Avenue	Jun-14	1,073	826	29	107	1,223	1,344	35	101	1,783	2,435	n/a	n/a	Connect the Coastside
Highway 1	California Avenue	Apr-17	1,156	922	33	131	1,340	1,487	21	86	1,359	1,795	54	90	Cypress Point Traffic Impact Analysis
Highway 1	California Avenue	Jul-19	1,088	819	30	112	1,254	1,387	34	85	1,219	1,986	65	74	Draft ICE Analysis
	*Percent change**		*1%*	*-1%*	*3%*	*5%*	*3%*	*3%*	*-3%*	*-16%*	*-32%*	*-18%*	*20%*	*-18%*	
Highway 1	Cypress Avenue	Jun-14	1,083	996	n/a	n/a	1,297	1,457	n/a	n/a	1,918	2,555			Connect the Coastside
Highway 1	Cypress Avenue	Jul-19	1,116	1,128	166	43	1,412	1,501	185	34					Draft ICE Analysis
	Percent change		*3%*	*13%*	*n/a*	*n/a*	*9%*	*3%*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	

*Percent change calculated between earliest available year of data collection (2014 or 2017) vs. 2019

APPENDIX E – ANALYSIS WORKSHEETS

SR-1 Existing Conditions Synchro 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)	13	0	29	14	0	3	15	565	9	6	1231	5
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	0	31	15	0	3	16	595	9	6	1296	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	1941	1947	1298	1970	1945	599	1301			604		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1941	1947	1298	1970	1945	599	1301			604		
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	85	62	100	99	97			99		
cM capacity (veh/h)	48	62	197	39	63	501	532			974		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	44	18	16	604	6	1301
Volume Left	14	15	16	0	6	0
Volume Right	31	3	0	9	0	5
cSH	100	46	532	1700	974	1700
Volume to Capacity	0.44	0.39	0.03	0.36	0.01	0.77
Queue Length 95th (ft)	47	34	2	0	0	0
Control Delay (s)	67.0	126.2	12.0	0.0	8.7	0.0
Lane LOS	F	F	B		A	
Approach Delay (s)	67.0	126.2	0.3		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	75.1%	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	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		

HCM Unsignalized Intersection Capacity Analysis
5: SR-1 & Vallemar St

9/18/2014

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)	13	0	17	8	0	2	30	1198	11	2	1190	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	13	0	17	8	0	2	30	1210	11	2	1202	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	2485	2494	1208	2499	2494	1216	1214			1221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2485	2494	1208	2499	2494	1216	1214			1221		
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 %	31	100	92	53	100	99	95			100		
cM capacity (veh/h)	19	27	223	17	27	221	574			571		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	10	30	1221	2	1214
Volume Left	13	8	30	0	2	0
Volume Right	17	2	0	11	0	12
cSH	39	21	574	1700	571	1700
Volume to Capacity	0.77	0.48	0.05	0.72	0.00	0.71
Queue Length 95th (ft)	71	34	4	0	0	0
Control Delay (s)	229.7	282.3	11.6	0.0	11.3	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	229.7	282.3	0.3		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	4.1		
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)	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		

HCM Unsignalized Intersection Capacity Analysis
11: SR-1 & Capistrano Rd 9/18/2014

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		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	0	16	11	0	7	26	1096	11	3	835	18
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)	12	0	17	12	0	7	27	1154	12	3	879	19
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	2111	2115	888	2116	2118	1159	898			1165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2111	2115	888	2116	2118	1159	898			1165		
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	95	66	100	97	96			99		
cM capacity (veh/h)	35	49	342	34	48	238	756			599		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	19	27	1165	3	898
Volume Left	12	12	27	0	3	0
Volume Right	17	7	0	12	0	19
cSH	75	51	756	1700	599	1700
Volume to Capacity	0.38	0.37	0.04	0.69	0.01	0.53
Queue Length 95th (ft)	37	33	3	0	0	0
Control Delay (s)	80.3	112.7	9.9	0.0	11.0	0.0
Lane LOS	F	F	A		B	
Approach Delay (s)	80.3	112.7	0.2		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

SR-1 Existing Conditions
16th Street Intersection
Synchro Report
From Draft Intersection Control Analysis

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	1	0	0	0	5	557	0	0	466	0
Future Vol, veh/h	2	0	1	0	0	0	5	557	0	0	466	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	100	-	-
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	2	0	1	0	0	0	5	605	0	0	507	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1123	1123	507	1123	1123	605	507	0	0	605	0	0
Stage 1	507	507	-	616	616	-	-	-	-	-	-	-
Stage 2	616	616	-	507	507	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	183	206	566	183	206	498	1058	-	-	973	-	-
Stage 1	548	539	-	478	482	-	-	-	-	-	-	-
Stage 2	478	482	-	548	539	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	182	205	566	182	205	498	1058	-	-	973	-	-
Mov Cap-2 Maneuver	182	205	-	182	205	-	-	-	-	-	-	-
Stage 1	545	539	-	476	480	-	-	-	-	-	-	-
Stage 2	476	480	-	547	539	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.5	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1058	-	-	235	-	973	-	-
HCM Lane V/C Ratio	0.005	-	-	0.014	-	-	-	-
HCM Control Delay (s)	8.4	-	-	20.5	0	0	-	-
HCM Lane LOS	A	-	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

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	4	0	8	1	0	2	3	663	1	2	1048	6
Future Vol, veh/h	4	0	8	1	0	2	3	663	1	2	1048	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	100	-	-
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	0	9	1	0	2	3	721	1	2	1139	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1876	1875	1142	1879	1878	721	1146	0	0	722	0	0
Stage 1	1147	1147	-	728	728	-	-	-	-	-	-	-
Stage 2	729	728	-	1151	1150	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	55	72	244	54	71	427	610	-	-	880	-	-
Stage 1	242	274	-	415	429	-	-	-	-	-	-	-
Stage 2	414	429	-	241	273	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	71	244	52	70	427	610	-	-	880	-	-
Mov Cap-2 Maneuver	54	71	-	52	70	-	-	-	-	-	-	-
Stage 1	241	273	-	413	427	-	-	-	-	-	-	-
Stage 2	410	427	-	232	272	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.3	34.6	0	0
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	610	-	-	112	125	880	-	-
HCM Lane V/C Ratio	0.005	-	-	0.116	0.026	0.002	-	-
HCM Control Delay (s)	10.9	-	-	41.3	34.6	9.1	-	-
HCM Lane LOS	B	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	0	2	2	0	0	1	3	608	0	0	744	5
Future Vol, veh/h	2	0	2	2	0	0	1	3	608	0	0	744	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	125	-	-	100	-	-
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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	2	2	0	0	1	3	661	0	0	809	5

Major/Minor	Minor2			Minor1			Major1				Major2		
Conflicting Flow All	1478	1481	811	1480	1484	661	813	814	0	0	661	0	0
Stage 1	811	811	-	667	670	-	-	-	-	-	-	-	-
Stage 2	667	670	-	813	814	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	-	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	104	125	379	104	125	462	-	813	-	-	927	-	-
Stage 1	373	393	-	448	455	-	-	-	-	-	-	-	-
Stage 2	448	455	-	372	391	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-		-	-
Mov Cap-1 Maneuver	104	125	379	103	125	462	~ -4	~ -4	-	-	927	-	-
Mov Cap-2 Maneuver	104	125	-	103	125	-	-	-	-	-	-	-	-
Stage 1	373	393	-	448	455	-	-	-	-	-	-	-	-
Stage 2	448	455	-	370	391	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.7	40.7		0
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	+	-	-	163	103	927	-	-
HCM Lane V/C Ratio	-	-	-	0.027	0.021	-	-	-
HCM Control Delay (s)	-	-	-	27.7	40.7	0	-	-
HCM Lane LOS	-	-	-	D	E	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0.1	0.1	0	-	-

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

Simtraffic
SR-1 Existing Report

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	0.7	7.9	0.1	47
Medio Ave	17	0.7	9.6	0.1	47
Magellan Ave	16	1.0	15.2	0.2	47
Coronado St	14	13.5	40.6	0.4	35
	52	7.9	59.7	0.7	44
Capistrano Rd	13	9.6	18.2	0.1	25
	51	4.5	11.1	0.1	29
	50	0.8	4.5	0.1	41
Coral Reef Ave	12	1.2	13.2	0.2	48
	49	0.5	4.8	0.1	44
Capistrano Rd 2	11	0.6	9.0	0.1	50
St Etheldore St	10	7.4	97.2	1.3	47
Cypress Ave	9	3.1	26.8	0.3	45
Vermont Ave	8	1.9	13.1	0.2	43
Virginia Ave	7	0.9	4.9	0.1	41
California Ave	6	1.1	5.1	0.1	39
Vallemar St	5	1.2	9.0	0.1	44
Carlos St	4	2.7	38.6	0.5	47
8th St	3	3.2	34.8	0.4	46
7th St	2	0.6	4.3	0.0	41
2nd St	1	2.6	20.9	0.3	44
Total		65.8	448.8	5.4	43

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	0.9	6.5	0.1	45
	2	0.6	18.6	0.3	49
8th St	3	0.4	4.2	0.0	42
Carlos St	4	1.2	27.9	0.4	58
	5	2.1	37.7	0.5	48
California Ave	6	1.0	8.8	0.1	45
Virginia Ave	7	0.6	4.5	0.1	43
Vermont Ave	8	0.7	4.7	0.1	42
Cypress Ave	9	2.2	13.3	0.2	43
St Etheldore St	10	2.0	26.0	0.3	46
Capistrano Rd 2	11	8.0	97.0	1.3	47
	49	1.0	10.0	0.1	45
Coral Reef Ave	12	0.6	4.8	0.1	44
	50	1.4	14.2	0.2	45
	51	0.8	4.5	0.1	40
Capistrano Rd	13	11.3	17.2	0.1	19
	52	5.5	14.9	0.1	30
Coronado St	14	15.5	62.8	0.7	42
Magellan Ave	16	6.7	34.0	0.4	42
Medio Ave	17	2.2	16.4	0.2	44
Miramar Dr	18	1.5	10.8	0.1	42
Total		66.4	438.9	5.4	44

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	1.4	9.3	0.1	43
Medio Ave	17	1.9	10.9	0.1	42
Magellan Ave	16	1.9	16.6	0.2	43
Coronado St	14	17.2	45.4	0.4	31
	52	9.8	62.0	0.7	42
Capistrano Rd	13	21.1	29.7	0.1	15
	51	5.2	11.7	0.1	27
	50	0.5	4.2	0.1	44
Coral Reef Ave	12	2.1	14.4	0.2	44
	49	0.7	5.1	0.1	42
Capistrano Rd	11	0.8	9.4	0.1	48
St Etheldore St	10	9.1	97.8	1.3	47
Cypress Ave	9	3.5	27.2	0.3	44
Vermont Ave	8	2.7	14.0	0.2	41
Virginia Ave	7	1.5	5.4	0.1	36
California Ave	6	1.6	5.4	0.1	36
Vallemar St	5	1.5	9.3	0.1	42
Carlos St	4	2.8	38.8	0.5	47
8th St	3	3.6	35.3	0.4	46
7th St	2	0.8	4.5	0.0	40
2nd St	1	2.4	20.0	0.3	46
Total		92.1	476.5	5.4	41

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	1.7	8.0	0.1	40
	2	2.2	20.1	0.3	45
8th St	3	0.9	4.8	0.0	37
Carlos St	4	3.2	34.2	0.4	47
	5	4.3	40.1	0.5	45
California Ave	6	2.2	10.1	0.1	39
Virginia Ave	7	1.6	5.5	0.1	36
Vermont Ave	8	1.3	5.3	0.1	37
Cypress Ave	9	3.2	14.4	0.2	40
St Etheldore St	10	3.1	26.8	0.3	45
Capistrano Rd	11	10.7	99.6	1.3	46
	49	1.5	10.5	0.1	43
Coral Reef Ave	12	0.7	4.9	0.1	43
	50	1.8	14.6	0.2	44
	51	1.2	4.9	0.1	38
Capistrano Rd	13	15.4	21.2	0.1	15
	52	6.6	16.0	0.1	28
Coronado St	14	17.0	63.8	0.7	41
Magellan Ave	16	8.1	36.3	0.4	39
Medio Ave	17	3.2	17.7	0.2	41
Miramar Dr	18	2.1	11.3	0.1	40
Total		92.2	470.1	5.4	41

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	1.9	10.3	0.1	41
Medio Ave	17	3.1	12.0	0.1	38
Magellan Ave	16	3.1	17.7	0.2	41
Coronado St	14	19.8	48.0	0.4	30
	52	10.3	62.4	0.7	42
Capistrano Rd	13	13.1	20.6	0.1	22
	51	5.2	11.8	0.1	27
	50	0.5	4.2	0.1	44
Coral Reef Ave	12	2.2	14.4	0.2	44
	49	0.9	5.2	0.1	41
Capistrano Rd	11	0.9	9.3	0.1	48
St Etheldore St	10	8.8	97.1	1.3	47
Cypress Ave	9	4.7	28.3	0.3	42
Vermont Ave	8	3.2	14.3	0.2	40
Virginia Ave	7	1.6	5.5	0.1	36
California Ave	6	1.7	5.7	0.1	35
Vallemar St	5	1.5	9.2	0.1	43
Carlos St	4	2.4	38.2	0.5	48
8th St	3	2.6	31.5	0.4	51
7th St	2	0.8	4.5	0.0	40
2nd St	1	2.1	20.5	0.3	44
Total		90.5	470.6	5.4	42

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	1.9	8.0	0.1	39
	2	1.4	19.1	0.3	48
8th St	3	0.7	4.5	0.0	39
Carlos St	4	2.6	34.5	0.4	47
	5	3.7	39.6	0.5	46
California Ave	6	1.5	9.4	0.1	42
Virginia Ave	7	0.9	4.8	0.1	41
Vermont Ave	8	0.8	4.8	0.1	41
Cypress Ave	9	1.9	13.3	0.2	43
St Etheldore St	10	2.0	25.2	0.3	48
Capistrano Rd	11	9.3	98.0	1.3	47
	49	1.2	10.2	0.1	44
Coral Reef Ave	12	0.6	4.8	0.1	44
	50	1.5	14.3	0.2	44
	51	1.1	4.8	0.1	38
Capistrano Rd	13	15.1	20.4	0.1	16
	52	6.9	16.3	0.1	27
Coronado St	14	13.1	63.3	0.7	41
Magellan Ave	16	6.4	34.7	0.4	41
Medio Ave	17	2.2	16.8	0.2	43
Miramar Dr	18	1.2	10.5	0.1	43
Total		76.1	457.6	5.4	42

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

Simtraffic
SR-92 Existing Report

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	29.7	0.2	27
	13	0.9	8.1	0.1	26
	14	4.4	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	11.2	85.6	0.6	26
	19	6.9	51.1	0.4	26
	20	1.4	10.1	0.1	26
	21	6.2	45.6	0.3	26
	22	3.6	26.4	0.2	26
	23	2.1	15.1	0.1	26
	24	3.4	25.0	0.2	26
	25	3.6	26.1	0.2	26
	26	3.9	27.9	0.2	26
	27	3.6	26.4	0.2	26
Skyline Blvd (West)	48	4.7	15.8	0.1	29
	28	1.4	16.8	0.1	27
	29	1.2	11.7	0.1	26
	30	2.1	17.8	0.1	26
	31	1.4	10.8	0.1	26
	32	1.0	7.8	0.1	27
	33	3.3	25.2	0.2	26
	34	2.0	14.8	0.1	25
	35	2.6	19.4	0.1	26
	36	2.5	18.1	0.1	26
	37	4.4	31.9	0.2	26
	38	3.9	28.1	0.2	26
	39	3.4	24.6	0.2	26
	40	2.2	15.8	0.1	26
	46	5.0	34.0	0.2	26
SR-35 (East)	49	8.9	18.6	0.1	22
Total		109.3	771.1	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	1.7	15.2	0.1	26
	40	1.8	30.8	0.2	28
	39	1.1	15.0	0.1	27
	38	1.7	22.7	0.2	28
	37	2.2	26.4	0.2	27
	36	2.7	30.3	0.2	27
	35	1.7	17.6	0.1	27
	34	1.9	19.0	0.1	27
	33	1.4	13.8	0.1	27
	32	2.5	24.4	0.2	27
	31	0.8	7.8	0.1	26
	30	1.1	10.4	0.1	27
	29	1.9	17.5	0.1	27
	28	1.3	11.5	0.1	27
Skyline Blvd (West)	48	3.0	13.9	0.1	33
	27	0.9	16.2	0.1	29
	26	2.0	25.2	0.2	27
	25	2.5	26.2	0.2	27
	24	2.6	25.2	0.2	27
	23	2.5	23.8	0.2	27
	22	1.6	14.6	0.1	27
	21	2.8	25.6	0.2	27
	20	5.0	44.5	0.3	27
	19	1.1	9.9	0.1	26
	45	5.8	50.3	0.4	27
	17	10.0	84.5	0.6	27
	16	1.1	8.8	0.1	26
	15	1.1	9.1	0.1	27
	14	2.3	18.5	0.1	26
	13	4.6	37.7	0.3	26
	12	1.0	8.2	0.1	26
	11	3.8	30.8	0.2	26
Ox Mt Landfill Rd	47	2.9	9.4	0.1	27
Total		80.4	744.9	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	2.0	29.0	0.2	28
	13	0.7	7.9	0.1	27
	14	3.7	36.7	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	10.0	84.4	0.6	27
	19	6.3	50.8	0.4	26
	20	1.3	10.0	0.1	26
	21	5.7	45.3	0.3	26
	22	3.4	26.2	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	3.6	27.7	0.2	26
	27	3.4	26.1	0.2	26
Skyline Blvd (West)	48	3.8	14.5	0.1	32
	28	1.2	16.5	0.1	28
	29	0.9	11.4	0.1	27
	30	1.7	17.4	0.1	27
	31	1.1	10.6	0.1	26
	32	0.9	7.6	0.1	27
	33	2.9	24.7	0.2	27
	34	1.8	14.5	0.1	26
	35	2.4	19.2	0.1	27
	36	2.2	17.8	0.1	26
	37	4.1	31.6	0.2	26
	38	3.6	27.7	0.2	26
	39	3.2	24.3	0.2	26
	40	2.1	15.7	0.1	26
	46	4.6	33.5	0.2	26
SR-35 (East)	49	10.1	19.8	0.1	20
Total		99.5	761.3	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	32.4	0.2	27
	39	1.9	15.7	0.1	26
	38	2.9	23.9	0.2	26
	37	3.5	27.6	0.2	26
	36	4.1	31.6	0.2	26
	35	2.4	18.3	0.1	26
	34	2.6	19.7	0.1	26
	33	1.9	14.3	0.1	26
	32	3.4	25.3	0.2	26
	31	1.1	8.0	0.1	26
	30	1.5	10.8	0.1	26
	29	2.4	18.0	0.1	26
	28	1.6	11.9	0.1	26
Skyline Blvd (West)	48	4.9	16.0	0.1	28
	27	1.2	16.5	0.1	28
	26	2.6	25.6	0.2	27
	25	3.1	26.8	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	3.5	26.3	0.2	26
	20	6.1	45.5	0.3	26
	19	1.4	10.1	0.1	26
	45	7.0	51.8	0.4	26
	17	11.7	85.8	0.6	26
	16	1.2	8.9	0.1	26
	15	1.3	9.2	0.1	26
	14	2.6	18.8	0.1	26
	13	5.3	38.2	0.3	26
	12	1.2	8.3	0.1	26
	11	4.3	31.1	0.2	26
Ox Mt Landfill Rd	47	2.2	8.5	0.1	30
Total		103.9	767.2	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	2.0	29.0	0.2	28
	13	0.7	7.9	0.1	27
	14	3.6	36.6	0.3	27
	15	1.9	18.1	0.1	27
	16	1.0	9.2	0.1	26
	17	1.0	8.5	0.1	27
	45	10.0	84.4	0.6	27
	19	6.3	50.6	0.4	26
	20	1.3	10.0	0.1	26
	21	5.7	45.1	0.3	26
	22	3.4	26.2	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	3.6	27.6	0.2	26
	27	3.4	26.2	0.2	26
Skyline Blvd (West)	48	4.1	15.4	0.1	30
	28	1.3	16.7	0.1	27
	29	1.1	11.6	0.1	27
	30	2.0	17.7	0.1	27
	31	1.3	10.8	0.1	26
	32	0.9	7.7	0.1	27
	33	3.2	25.0	0.2	26
	34	1.9	14.7	0.1	25
	35	2.5	19.2	0.1	27
	36	2.4	18.1	0.1	26
	37	4.2	31.8	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	4.7	33.8	0.2	26
SR-35 (East)	49	8.5	18.3	0.1	22
Total		100.1	762.7	5.6	26

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	3.4	16.9	0.1	24
	40	3.4	32.4	0.2	27
	39	1.9	15.8	0.1	26
	38	2.9	23.9	0.2	26
	37	3.5	27.7	0.2	26
	36	4.1	31.6	0.2	26
	35	2.4	18.3	0.1	26
	34	2.6	19.7	0.1	26
	33	1.9	14.3	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	11.8	0.1	26
Skyline Blvd (West)	48	4.8	16.0	0.1	29
	27	1.4	16.7	0.1	28
	26	2.8	25.9	0.2	27
	25	3.3	26.9	0.2	26
	24	3.3	26.0	0.2	26
	23	3.2	24.4	0.2	26
	22	2.0	15.0	0.1	26
	21	3.5	26.4	0.2	26
	20	6.2	45.7	0.3	26
	19	1.4	10.2	0.1	26
	45	7.1	51.6	0.4	26
	17	11.9	85.9	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	5.4	38.5	0.3	26
	12	1.2	8.4	0.1	25
	11	4.4	31.1	0.2	26
Ox Mt Landfill Rd	47	2.8	9.4	0.1	27
Total		105.6	769.4	5.6	26

SR-1 Buildout Conditions Synchro 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)	21	0	48	18	0	4	25	771	11	8	1774	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)	22	0	51	19	0	4	26	812	12	8	1867	9
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	2757	2765	1872	2805	2764	817	1877			823		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2757	2765	1872	2805	2764	817	1877			823		
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	44	0	100	99	92			99		
cM capacity (veh/h)	12	18	90	5	18	376	320			807		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	73	23	26	823	8	1877
Volume Left	22	19	26	0	8	0
Volume Right	51	4	0	12	0	9
cSH	29	6	320	1700	807	1700
Volume to Capacity	2.46	4.00	0.08	0.48	0.01	1.10
Queue Length 95th (ft)	214	Err	7	0	1	0
Control Delay (s)	949.7	Err	17.3	0.0	9.5	0.0
Lane LOS	F	F	C		A	
Approach Delay (s)	949.7	Err	0.5		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	106.4		
Intersection Capacity Utilization	104.5%	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)	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)	24	0	34	12	0	3	39	1402	14	3	1734	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	24	0	34	12	0	3	39	1416	14	3	1752	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	3265	3276	1761	3294	3278	1423	1770			1430		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3265	3276	1761	3294	3278	1423	1770			1430		
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	67	0	100	98	89			99		
cM capacity (veh/h)	5	8	105	3	8	167	352			475		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	59	15	39	1430	3	1770
Volume Left	24	12	39	0	3	0
Volume Right	34	3	0	14	0	18
cSH	11	4	352	1700	475	1700
Volume to Capacity	5.41	3.92	0.11	0.84	0.01	1.04
Queue Length 95th (ft)	Err	Err	9	0	0	0
Control Delay (s)	Err	Err	16.5	0.0	12.6	0.0
Lane LOS	F	F	C		B	
Approach Delay (s)	Err	Err	0.4		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	222.5		
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: SR-1 & 2nd St

9/23/2014

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		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	34	15	0	8	32	1301	13	4	1377	27
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)	22	0	36	16	0	8	34	1369	14	4	1449	28
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	2917	2923	1464	2937	2930	1376	1478			1383		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2917	2923	1464	2937	2930	1376	1478			1383		
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	77	0	100	95	93			99		
cM capacity (veh/h)	9	14	158	7	14	178	456			495		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	24	34	1383	4	1478
Volume Left	22	16	34	0	4	0
Volume Right	36	8	0	14	0	28
cSH	21	10	456	1700	495	1700
Volume to Capacity	2.79	2.38	0.07	0.81	0.01	0.87
Queue Length 95th (ft)	188	100	6	0	1	0
Control Delay (s)	1197.4	1359.6	13.5	0.0	12.3	0.0
Lane LOS	F	F	B		B	
Approach Delay (s)	1197.4	1359.6	0.3		0.0	
Approach LOS	F	F				

Intersection Summary			
Average Delay	34.5		
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

SR-1 Buildout Conditions
16th Street Intersection
Synchro Report
From Draft Intersection Control Analysis

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	5	0	2	2	0	0	0	863	0	0	997	0
Future Vol, veh/h	5	0	2	2	0	0	0	863	0	0	997	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	100	-	-
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	5	0	2	2	0	0	0	938	0	0	1084	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2022	2022	1084	2023	2022	938	1084	0	0	938	0	0
Stage 1	1084	1084	-	938	938	-	-	-	-	-	-	-
Stage 2	938	938	-	1085	1084	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	43	58	264	43	58	321	643	-	-	730	-	-
Stage 1	263	293	-	317	343	-	-	-	-	-	-	-
Stage 2	317	343	-	262	293	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	58	264	43	58	321	643	-	-	730	-	-
Mov Cap-2 Maneuver	43	58	-	43	58	-	-	-	-	-	-	-
Stage 1	263	293	-	317	343	-	-	-	-	-	-	-
Stage 2	317	343	-	260	293	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	77.7	93.1	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	643	-	-	57	43	730	-	-
HCM Lane V/C Ratio	-	-	-	0.133	0.051	-	-	-
HCM Control Delay (s)	0	-	-	77.7	93.1	0	-	-
HCM Lane LOS	A	-	-	F	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	2	0	2	3	1005	0	2	966	0
Future Vol, veh/h	0	0	0	2	0	2	3	1005	0	2	966	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	100	-	-
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	0	0	0	2	0	2	3	1092	0	2	1050	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2154	2153	1050	2153	2153	1092	1050	0	0	1092	0	0
Stage 1	1054	1054	-	1099	1099	-	-	-	-	-	-	-
Stage 2	1100	1099	-	1054	1054	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	35	48	276	35	48	261	663	-	-	639	-	-
Stage 1	273	303	-	258	288	-	-	-	-	-	-	-
Stage 2	257	288	-	273	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	48	276	35	48	261	663	-	-	639	-	-
Mov Cap-2 Maneuver	35	48	-	35	48	-	-	-	-	-	-	-
Stage 1	272	302	-	257	287	-	-	-	-	-	-	-
Stage 2	254	287	-	272	302	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	67.4	0	0
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	663	-	-	-	62	639	-	-
HCM Lane V/C Ratio	0.005	-	-	-	0.07	0.003	-	-
HCM Control Delay (s)	10.5	-	-	0	67.4	10.7	-	-
HCM Lane LOS	B	-	-	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	5	2	0	3	0	1046	0	2	1084	0
Future Vol, veh/h	6	0	5	2	0	3	0	1046	0	2	1084	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	125	-	-	100	-	-
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	7	0	5	2	0	3	0	1137	0	2	1178	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2322	2320	1178	2322	2320	1137	1178	0	0	1137	0	0
Stage 1	1183	1183	-	1137	1137	-	-	-	-	-	-	-
Stage 2	1139	1137	-	1185	1183	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	26	38	232	26	38	246	593	-	-	614	-	-
Stage 1	231	263	-	245	277	-	-	-	-	-	-	-
Stage 2	245	277	-	230	263	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	38	232	25	38	246	593	-	-	614	-	-
Mov Cap-2 Maneuver	26	38	-	25	38	-	-	-	-	-	-	-
Stage 1	231	262	-	245	277	-	-	-	-	-	-	-
Stage 2	242	277	-	224	262	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	114.9	79	0	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	593	-	-	44	54	614	-	-
HCM Lane V/C Ratio	-	-	-	0.272	0.101	0.004	-	-
HCM Control Delay (s)	0	-	-	114.9	79	10.9	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0.3	0	-	-

Simtraffic
SR-1 Buildout Report

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	0.7	8.9	0.1	43
Medio Ave	17	1.0	11.0	0.1	42
Magellan Ave	16	1.5	16.0	0.2	45
Coronado St	14	16.4	43.3	0.4	33
	52	9.3	61.3	0.7	43
Capistrano Rd	13	24.7	33.3	0.1	13
	51	5.3	11.8	0.1	27
	50	0.4	4.2	0.1	44
Coral Reef Ave	12	1.6	14.0	0.2	46
	49	0.6	5.0	0.1	43
Capistrano Rd	11	0.6	8.4	0.1	53
St Etheldore St	10	7.0	85.8	1.3	53
Cypress Ave	9	3.5	27.0	0.3	45
Vermont Ave	8	2.6	14.0	0.2	41
Virginia Ave	7	1.3	5.3	0.1	37
California Ave	6	1.5	5.5	0.1	36
Vallemar St	5	1.7	9.4	0.1	42
Carlos St	4	3.7	39.9	0.5	45
8th St	3	4.5	39.6	0.4	41
7th St	2	1.4	5.5	0.0	32
2nd St	1	3.9	24.2	0.3	38
Total		93.2	473.4	5.4	41

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	1.2	7.8	0.1	40
	2	1.5	21.5	0.3	42
8th St	3	0.8	5.1	0.0	35
Carlos St	4	3.7	33.9	0.4	48
	5	4.3	40.0	0.5	45
California Ave	6	2.0	9.9	0.1	40
Virginia Ave	7	1.4	5.4	0.1	37
Vermont Ave	8	1.6	5.6	0.1	35
Cypress Ave	9	4.4	15.7	0.2	36
St Etheldore St	10	4.4	27.6	0.3	43
Capistrano Rd	11	6.8	75.5	1.3	61
	49	1.6	10.5	0.1	43
Coral Reef Ave	12	2.2	5.8	0.1	40
	50	4.9	17.8	0.2	36
	51	5.9	9.5	0.1	19
Capistrano Rd	13	49.4	55.1	0.1	6
	52	10.6	20.0	0.1	22
Coronado St	14	101.5	152.7	0.7	17
Magellan Ave	16	11.2	39.0	0.4	37
Medio Ave	17	3.6	19.6	0.2	37
Miramar Dr	18	2.5	12.8	0.1	36
Total		225.5	590.7	5.4	33

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	3.0	16.0	0.1	34
Medio Ave	17	4.0	13.9	0.1	33
Magellan Ave	16	4.9	19.8	0.2	36
Coronado St	14	22.8	50.7	0.4	28
	52	14.1	66.0	0.7	40
Capistrano Rd	13	82.6	90.9	0.1	5
	51	6.1	12.7	0.1	25
	50	0.4	4.2	0.1	44
Coral Reef Ave	12	2.2	14.5	0.2	44
	49	0.8	5.1	0.1	42
Capistrano Rd	11	0.7	8.5	0.1	53
St Etheldore St	10	8.5	89.4	1.3	51
Cypress Ave	9	3.9	27.8	0.3	43
Vermont Ave	8	2.9	14.3	0.2	40
Virginia Ave	7	1.6	5.5	0.1	36
California Ave	6	1.7	5.6	0.1	35
Vallemar St	5	1.9	9.6	0.1	41
Carlos St	4	3.6	39.7	0.5	46
8th St	3	4.3	39.2	0.4	41
7th St	2	1.2	5.3	0.0	33
2nd St	1	3.3	23.1	0.3	39
Total		174.6	561.9	5.4	35

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	3.8	12.7	0.1	29
	2	8.4	28.3	0.3	32
8th St	3	2.7	7.0	0.0	25
Carlos St	4	8.7	40.5	0.4	40
	5	7.5	43.4	0.5	42
California Ave	6	4.9	12.8	0.1	31
Virginia Ave	7	3.4	7.4	0.1	27
Vermont Ave	8	3.1	7.1	0.1	28
Cypress Ave	9	6.3	17.5	0.2	32
St Etheldore St	10	4.9	28.8	0.3	42
Capistrano Rd	11	8.6	84.1	1.3	54
	49	4.7	13.6	0.1	33
Coral Reef Ave	12	8.8	30.8	0.1	17
	50	41.7	54.4	0.2	12
	51	17.7	21.3	0.1	9
Capistrano Rd	13	69.1	74.8	0.1	4
	52	10.8	20.2	0.1	22
Coronado St	14	112.8	176.2	0.7	16
Magellan Ave	16	12.2	40.5	0.4	35
Medio Ave	17	4.2	20.3	0.2	35
Miramar Dr	18	2.6	13.0	0.1	35
Total		346.8	754.7	5.4	27

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	3.3	14.2	0.1	33
Medio Ave	17	4.7	14.6	0.1	31
Magellan Ave	16	5.2	20.1	0.2	36
Coronado St	14	42.2	70.1	0.4	20
	52	14.0	66.1	0.7	40
Capistrano Rd	13	42.9	50.3	0.1	9
	51	6.2	12.8	0.1	25
	50	0.5	4.2	0.1	43
Coral Reef Ave	12	2.2	14.6	0.2	44
	49	0.8	5.2	0.1	41
Capistrano Rd	11	0.8	8.7	0.1	52
St Etheldore St	10	8.6	89.7	1.3	51
Cypress Ave	9	5.8	28.9	0.3	42
Vermont Ave	8	3.9	15.1	0.2	38
Virginia Ave	7	1.9	5.8	0.1	34
California Ave	6	2.1	6.1	0.1	32
Vallemar St	5	1.9	9.8	0.1	40
Carlos St	4	3.4	39.5	0.5	46
8th St	3	3.8	36.9	0.4	44
7th St	2	1.4	5.5	0.0	32
2nd St	1	3.1	23.3	0.3	39
Total		158.8	541.4	5.4	36

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	3.1	11.2	0.1	31
	2	2.7	22.7	0.3	40
8th St	3	1.1	5.4	0.0	33
Carlos St	4	4.9	37.2	0.4	44
	5	5.4	41.2	0.5	44
California Ave	6	2.7	10.6	0.1	37
Virginia Ave	7	1.9	5.8	0.1	34
Vermont Ave	8	1.7	5.8	0.1	34
Cypress Ave	9	3.3	14.8	0.2	39
St Etheldore St	10	2.9	26.0	0.3	46
Capistrano Rd	11	7.4	79.2	1.3	58
	49	4.7	13.7	0.1	33
Coral Reef Ave	12	14.1	98.1	0.1	12
	50	78.9	91.6	0.2	7
	51	35.7	39.3	0.1	5
Capistrano Rd	13	88.0	237.9	0.1	3
	52	10.5	19.9	0.1	23
Coronado St	14	18.3	70.0	0.7	37
Magellan Ave	16	9.0	37.0	0.4	39
Medio Ave	17	3.1	19.2	0.2	37
Miramar Dr	18	1.8	12.2	0.1	38
Total		301.2	898.8	5.4	29

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

Simtraffic
SR-92 Buildout Report

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

SR-1 Mitigated Buildout Conditions SIDRA Report

MOVEMENT SUMMARY

Site: 101 [Highway 1 & 16th Street AM]

Highway 1 & 16th Street
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Highway 1												
3	L2	1	2.0	0.700	12.2	LOS B	9.0	229.5	0.15	0.03	0.15	28.6
8	T1	938	2.0	0.700	12.2	LOS B	9.0	229.5	0.15	0.03	0.15	35.5
18	R2	1	2.0	0.700	12.2	LOS B	9.0	229.5	0.15	0.03	0.15	27.1
Approach		940	2.0	0.700	12.2	LOS B	9.0	229.5	0.15	0.03	0.15	35.5
East: 16th Street												
1	L2	2	2.0	0.009	7.2	LOS A	0.0	0.8	0.64	0.52	0.64	28.3
6	T1	1	2.0	0.009	7.2	LOS A	0.0	0.8	0.64	0.52	0.64	23.3
16	R2	1	2.0	0.009	7.2	LOS A	0.0	0.8	0.64	0.52	0.64	27.8
Approach		4	2.0	0.009	7.2	LOS A	0.0	0.8	0.64	0.52	0.64	26.7
North: Highway 1												
7	L2	1	2.0	0.806	16.7	LOS C	15.6	395.2	0.16	0.03	0.16	27.1
4	T1	1084	2.0	0.806	16.7	LOS C	15.6	395.2	0.16	0.03	0.16	33.2
14	R2	1	2.0	0.806	16.7	LOS C	15.6	395.2	0.16	0.03	0.16	25.8
Approach		1086	2.0	0.806	16.7	LOS C	15.6	395.2	0.16	0.03	0.16	33.2
West: 16th Street												
5	L2	5	2.0	0.020	8.5	LOS A	0.1	1.8	0.68	0.63	0.68	27.6
2	T1	1	2.0	0.020	8.5	LOS A	0.1	1.8	0.68	0.63	0.68	22.9
12	R2	2	2.0	0.020	8.5	LOS A	0.1	1.8	0.68	0.63	0.68	27.1
Approach		9	2.0	0.020	8.5	LOS A	0.1	1.8	0.68	0.63	0.68	26.8
All Vehicles		2039	2.0	0.806	14.6	LOS B	15.6	395.2	0.16	0.03	0.16	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Highway 1 & 16th Street Mid]

Highway 1 & 16th Street
Site Category: (None)
Roundabout

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
Movement Performance - Vehicles												
South: Highway 1												
3	L2	3	2.0	0.814	17.2	LOS C	16.3	414.4	0.17	0.03	0.17	26.9
8	T1	1092	2.0	0.814	17.2	LOS C	16.3	414.4	0.17	0.03	0.17	32.9
18	R2	1	2.0	0.814	17.2	LOS C	16.3	414.4	0.17	0.03	0.17	25.6
Approach		1097	2.0	0.814	17.2	LOS C	16.3	414.4	0.17	0.03	0.17	32.9
East: 16th Street												
1	L2	2	2.0	0.013	8.5	LOS A	0.0	1.1	0.68	0.61	0.68	28.0
6	T1	1	2.0	0.013	8.5	LOS A	0.0	1.1	0.68	0.61	0.68	23.1
16	R2	2	2.0	0.013	8.5	LOS A	0.0	1.1	0.68	0.61	0.68	27.5
Approach		5	2.0	0.013	8.5	LOS A	0.0	1.1	0.68	0.61	0.68	26.7
North: Highway 1												
7	L2	2	2.0	0.784	15.5	LOS C	13.6	345.7	0.19	0.04	0.19	27.4
4	T1	1050	2.0	0.784	15.5	LOS C	13.6	345.7	0.19	0.04	0.19	33.8
14	R2	1	2.0	0.784	15.5	LOS C	13.6	345.7	0.19	0.04	0.19	26.1
Approach		1053	2.0	0.784	15.5	LOS C	13.6	345.7	0.19	0.04	0.19	33.7
West: 16th Street												
5	L2	1	2.0	0.007	8.1	LOS A	0.0	0.6	0.67	0.56	0.67	28.3
2	T1	1	2.0	0.007	8.1	LOS A	0.0	0.6	0.67	0.56	0.67	23.3
12	R2	1	2.0	0.007	8.1	LOS A	0.0	0.6	0.67	0.56	0.67	27.8
Approach		3	2.0	0.007	8.1	LOS A	0.0	0.6	0.67	0.56	0.67	26.3
All Vehicles		2159	2.0	0.814	16.3	LOS C	16.3	414.4	0.18	0.04	0.18	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Highway 1 & 16th Street PM]

Highway 1 & 16th Street
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Highway 1												
3	L2	1	2.0	0.851	19.8	LOS C	20.0	508.7	0.33	0.08	0.33	26.1
8	T1	1137	2.0	0.851	19.8	LOS C	20.0	508.7	0.33	0.08	0.33	31.7
18	R2	1	2.0	0.851	19.8	LOS C	20.0	508.7	0.33	0.08	0.33	24.9
Approach		1139	2.0	0.851	19.8	LOS C	20.0	508.7	0.33	0.08	0.33	31.7
East: 16th Street												
1	L2	2	2.0	0.011	8.9	LOS A	0.0	0.9	0.70	0.62	0.70	27.7
6	T1	1	2.0	0.011	8.9	LOS A	0.0	0.9	0.70	0.62	0.70	23.0
16	R2	1	2.0	0.011	8.9	LOS A	0.0	0.9	0.70	0.62	0.70	27.2
Approach		4	2.0	0.011	8.9	LOS A	0.0	0.9	0.70	0.62	0.70	26.2
North: Highway 1												
7	L2	2	2.0	0.877	22.1	LOS C	25.1	637.2	0.24	0.04	0.24	25.4
4	T1	1178	2.0	0.877	22.1	LOS C	25.1	637.2	0.24	0.04	0.24	30.8
14	R2	1	2.0	0.877	22.1	LOS C	25.1	637.2	0.24	0.04	0.24	24.3
Approach		1182	2.0	0.877	22.1	LOS C	25.1	637.2	0.24	0.04	0.24	30.7
West: 16th Street												
5	L2	7	2.0	0.033	9.6	LOS A	0.1	2.9	0.71	0.71	0.71	27.4
2	T1	1	2.0	0.033	9.6	LOS A	0.1	2.9	0.71	0.71	0.71	22.8
12	R2	5	2.0	0.033	9.6	LOS A	0.1	2.9	0.71	0.71	0.71	27.0
Approach		13	2.0	0.033	9.6	LOS A	0.1	2.9	0.71	0.71	0.71	26.8
All Vehicles		2338	2.0	0.877	20.9	LOS C	25.1	637.2	0.29	0.06	0.29	31.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Highway 1 & California AM]

Highway 1 & California Ave
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Highway 1												
3	L2	5	2.0	0.643	10.7	LOS B	6.9	174.3	0.24	0.07	0.24	29.1
8	T1	817	2.0	0.643	10.7	LOS B	6.9	174.3	0.24	0.07	0.24	36.3
18	R2	27	2.0	0.643	10.7	LOS B	6.9	174.3	0.24	0.07	0.24	27.6
Approach		850	2.0	0.643	10.7	LOS B	6.9	174.3	0.24	0.07	0.24	35.9
East: 16th Street												
1	L2	61	2.0	0.111	7.7	LOS A	0.4	10.6	0.64	0.64	0.64	27.3
6	T1	1	2.0	0.111	7.7	LOS A	0.4	10.6	0.64	0.64	0.64	22.8
16	R2	1	2.0	0.111	7.7	LOS A	0.4	10.6	0.64	0.64	0.64	26.9
Approach		63	2.0	0.111	7.7	LOS A	0.4	10.6	0.64	0.64	0.64	27.2
North: Highway 1												
7	L2	8	2.0	0.825	18.7	LOS C	13.6	346.6	0.72	0.36	0.72	26.4
4	T1	1025	2.0	0.825	18.7	LOS C	13.6	346.6	0.72	0.36	0.72	32.2
14	R2	8	2.0	0.825	18.7	LOS C	13.6	346.6	0.72	0.36	0.72	25.2
Approach		1040	2.0	0.825	18.7	LOS C	13.6	346.6	0.72	0.36	0.72	32.1
West: 16th Street												
5	L2	13	2.0	0.065	9.2	LOS A	0.2	5.8	0.69	0.69	0.69	27.6
2	T1	1	2.0	0.065	9.2	LOS A	0.2	5.8	0.69	0.69	0.69	22.9
12	R2	14	2.0	0.065	9.2	LOS A	0.2	5.8	0.69	0.69	0.69	27.1
Approach		28	2.0	0.065	9.2	LOS A	0.2	5.8	0.69	0.69	0.69	27.1
All Vehicles		1982	2.0	0.825	14.8	LOS B	13.6	346.6	0.51	0.25	0.51	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Highway 1 & California Mid]

Highway 1 & California Ave
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Highway 1												
3	L2	11	2.0	0.611	9.9	LOS A	6.1	155.5	0.18	0.05	0.18	29.4
8	T1	758	2.0	0.611	9.9	LOS A	6.1	155.5	0.18	0.05	0.18	36.8
18	R2	46	2.0	0.611	9.9	LOS A	6.1	155.5	0.18	0.05	0.18	27.9
Approach		814	2.0	0.611	9.9	LOS A	6.1	155.5	0.18	0.05	0.18	36.0
East: 16th Street												
1	L2	40	2.0	0.070	6.7	LOS A	0.3	6.7	0.61	0.58	0.61	27.6
6	T1	1	2.0	0.070	6.7	LOS A	0.3	6.7	0.61	0.58	0.61	23.0
16	R2	1	2.0	0.070	6.7	LOS A	0.3	6.7	0.61	0.58	0.61	27.2
Approach		42	2.0	0.070	6.7	LOS A	0.3	6.7	0.61	0.58	0.61	27.5
North: Highway 1												
7	L2	10	2.0	0.802	17.1	LOS C	12.9	326.5	0.60	0.27	0.60	26.9
4	T1	1009	2.0	0.802	17.1	LOS C	12.9	326.5	0.60	0.27	0.60	33.0
14	R2	10	2.0	0.802	17.1	LOS C	12.9	326.5	0.60	0.27	0.60	25.6
Approach		1028	2.0	0.802	17.1	LOS C	12.9	326.5	0.60	0.27	0.60	32.8
West: 16th Street												
5	L2	1	2.0	0.073	9.0	LOS A	0.3	6.5	0.68	0.68	0.68	28.4
2	T1	4	2.0	0.073	9.0	LOS A	0.3	6.5	0.68	0.68	0.68	23.3
12	R2	27	2.0	0.073	9.0	LOS A	0.3	6.5	0.68	0.68	0.68	27.9
Approach		33	2.0	0.073	9.0	LOS A	0.3	6.5	0.68	0.68	0.68	27.2
All Vehicles		1917	2.0	0.802	13.7	LOS B	12.9	326.5	0.42	0.19	0.42	33.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Highway 1 & California PM]

Highway 1 & California Ave
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Highway 1												
3	L2	17	2.0	0.912	26.5	LOS D	28.7	728.3	0.80	0.28	0.80	24.2
8	T1	1129	2.0	0.912	26.5	LOS D	28.7	728.3	0.80	0.28	0.80	29.0
18	R2	53	2.0	0.912	26.5	LOS D	28.7	728.3	0.80	0.28	0.80	23.2
Approach		1200	2.0	0.912	26.5	LOS D	28.7	728.3	0.80	0.28	0.80	28.6
East: 16th Street												
1	L2	40	2.0	0.104	10.3	LOS B	0.4	9.3	0.72	0.72	0.72	26.5
6	T1	1	2.0	0.104	10.3	LOS B	0.4	9.3	0.72	0.72	0.72	22.2
16	R2	1	2.0	0.104	10.3	LOS B	0.4	9.3	0.72	0.72	0.72	26.1
Approach		42	2.0	0.104	10.3	LOS B	0.4	9.3	0.72	0.72	0.72	26.4
North: Highway 1												
7	L2	22	2.0	0.857	21.1	LOS C	16.7	424.7	0.78	0.37	0.78	25.7
4	T1	1057	2.0	0.857	21.1	LOS C	16.7	424.7	0.78	0.37	0.78	31.1
14	R2	13	2.0	0.857	21.1	LOS C	16.7	424.7	0.78	0.37	0.78	24.5
Approach		1091	2.0	0.857	21.1	LOS C	16.7	424.7	0.78	0.37	0.78	30.9
West: 16th Street												
5	L2	4	2.0	0.023	8.8	LOS A	0.1	2.0	0.69	0.66	0.69	27.8
2	T1	1	2.0	0.023	8.8	LOS A	0.1	2.0	0.69	0.66	0.69	23.0
12	R2	4	2.0	0.023	8.8	LOS A	0.1	2.0	0.69	0.66	0.69	27.3
Approach		10	2.0	0.023	8.8	LOS A	0.1	2.0	0.69	0.66	0.69	26.9
All Vehicles		2343	2.0	0.912	23.6	LOS C	28.7	728.3	0.79	0.34	0.79	29.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [1 Lane Roundabout 2040 AM]

Highway 1 & Cypress Ave
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	30	3.9	0.877	15.7	LOS B	18.6	480.4	1.00	0.68	29.3
8	T1	940	3.9	0.877	9.7	LOS A	18.6	480.4	1.00	0.68	34.4
18	R2	3	3.9	0.877	9.4	LOS A	18.6	480.4	1.00	0.68	27.6
Approach		973	3.9	0.877	9.8	LOS A	18.6	480.4	1.00	0.68	34.2
East: Cypress East Leg											
1	L2	13	3.9	0.116	16.6	LOS B	0.8	21.0	0.98	0.89	24.2
6	T1	11	3.9	0.116	11.4	LOS B	0.8	21.0	0.98	0.89	20.6
16	R2	11	3.9	0.116	12.3	LOS B	0.8	21.0	0.98	0.89	23.7
Approach		35	3.9	0.116	13.6	LOS B	0.8	21.0	0.98	0.89	22.8
North: RT 1 North Leg											
7	L2	5	3.9	0.819	13.1	LOS B	15.3	394.0	0.69	0.47	33.2
4	T1	859	3.9	0.819	7.1	LOS A	15.3	394.0	0.69	0.47	36.4
14	R2	129	3.9	0.819	6.7	LOS A	15.3	394.0	0.69	0.47	28.5
Approach		993	3.9	0.819	7.1	LOS A	15.3	394.0	0.69	0.47	35.1
West: Cypress West Leg											
5	L2	111	3.9	0.345	13.2	LOS B	2.4	62.0	0.92	0.94	25.4
2	T1	8	3.9	0.345	7.9	LOS A	2.4	62.0	0.92	0.94	21.4
12	R2	46	3.9	0.345	8.9	LOS A	2.4	62.0	0.92	0.94	24.5
Approach		165	3.9	0.345	11.7	LOS B	2.4	62.0	0.92	0.94	24.9
All Vehicles		2166	3.9	0.877	8.8	LOS A	18.6	480.4	0.85	0.61	33.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [2 Lane Roundabout 2040 AM]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	30	3.9	0.423	12.1	LOS B	3.3	86.3	0.43	0.50	31.5
8	T1	940	3.9	0.423	6.2	LOS A	3.3	86.3	0.42	0.50	37.5
18	R2	3	3.9	0.344	6.0	LOS A	2.4	62.4	0.41	0.50	30.1
Approach		973	3.9	0.423	6.4	LOS A	3.3	86.3	0.42	0.50	37.3
East: Cypress East Leg											
1	L2	13	3.9	0.061	9.3	LOS A	0.2	6.3	0.64	0.70	28.7
6	T1	11	3.9	0.061	4.3	LOS A	0.2	6.3	0.64	0.70	23.8
16	R2	11	3.9	0.061	5.0	LOS A	0.2	6.3	0.64	0.70	28.0
Approach		35	3.9	0.061	6.4	LOS A	0.2	6.3	0.64	0.70	26.8
North: RT 1 North Leg											
7	L2	5	3.9	0.400	12.3	LOS B	2.9	75.8	0.25	0.46	35.9
4	T1	859	3.9	0.400	6.4	LOS A	2.9	75.8	0.25	0.47	38.8
14	R2	129	3.9	0.325	6.0	LOS A	2.2	55.6	0.25	0.48	29.9
Approach		993	3.9	0.400	6.4	LOS A	2.9	75.8	0.25	0.47	37.4
West: Cypress West Leg											
5	L2	111	3.9	0.247	9.2	LOS A	1.1	27.1	0.63	0.79	27.3
2	T1	8	3.9	0.247	4.1	LOS A	1.1	27.1	0.63	0.79	23.2
12	R2	46	3.9	0.247	4.9	LOS A	1.1	27.1	0.63	0.79	26.4
Approach		165	3.9	0.247	7.7	LOS A	1.1	27.1	0.63	0.79	26.9
All Vehicles		2166	3.9	0.423	6.5	LOS A	3.3	86.3	0.36	0.51	36.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [1 Lane Roundabout 2040 WE]

Highway 1 & Cypress Ave
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	61	0.9	0.829	13.2	LOS B	14.0	352.1	0.90	0.59	29.7
8	T1	894	0.9	0.829	7.1	LOS A	14.0	352.1	0.90	0.59	35.3
18	R2	9	0.9	0.829	6.9	LOS A	14.0	352.1	0.90	0.59	28.0
Approach		964	0.9	0.829	7.5	LOS A	14.0	352.1	0.90	0.59	34.8
East: Cypress East Leg											
1	L2	14	0.9	0.070	14.4	LOS B	0.5	12.3	0.94	0.82	25.2
6	T1	6	0.9	0.070	9.2	LOS A	0.5	12.3	0.94	0.82	21.1
16	R2	6	0.9	0.070	10.1	LOS B	0.5	12.3	0.94	0.82	24.7
Approach		26	0.9	0.070	12.2	LOS B	0.5	12.3	0.94	0.82	24.0
North: RT 1 North Leg											
7	L2	9	0.9	1.330	166.0	LOS F	187.4	4717.7	1.00	1.74	6.2
4	T1	1482	0.9	1.330	160.0	LOS F	187.4	4717.7	1.00	1.74	7.7
14	R2	122	0.9	1.330	159.7	LOS F	187.4	4717.7	1.00	1.74	7.2
Approach		1613	0.9	1.330	160.0	LOS F	187.4	4717.7	1.00	1.74	7.6
West: Cypress West Leg											
5	L2	100	0.9	0.524	26.4	LOS C	4.6	115.7	1.00	1.13	20.8
2	T1	6	0.9	0.524	21.2	LOS C	4.6	115.7	1.00	1.13	17.2
12	R2	43	0.9	0.524	22.1	LOS C	4.6	115.7	1.00	1.13	20.2
Approach		149	0.9	0.524	24.9	LOS C	4.6	115.7	1.00	1.13	20.5
All Vehicles		2752	0.9	1.330	97.9	LOS F	187.4	4717.7	0.97	1.29	11.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [2 Lane Roundabout 2040 WE]

New Site
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	61	0.9	0.403	11.9	LOS B	3.2	81.5	0.40	0.50	31.5
8	T1	894	0.9	0.403	6.0	LOS A	3.2	81.5	0.40	0.50	37.9
18	R2	9	0.9	0.327	5.8	LOS A	2.3	59.1	0.39	0.48	30.2
Approach		964	0.9	0.403	6.4	LOS A	3.2	81.5	0.40	0.50	37.4
East: Cypress East Leg											
1	L2	14	0.9	0.041	8.8	LOS A	0.2	4.2	0.62	0.68	28.8
6	T1	6	0.9	0.041	3.8	LOS A	0.2	4.2	0.62	0.68	23.6
16	R2	6	0.9	0.041	4.5	LOS A	0.2	4.2	0.62	0.68	28.0
Approach		26	0.9	0.041	6.7	LOS A	0.2	4.2	0.62	0.68	27.2
North: RT 1 North Leg											
7	L2	9	0.9	0.645	12.6	LOS B	6.9	172.7	0.43	0.48	34.6
4	T1	1482	0.9	0.645	6.8	LOS A	6.9	172.7	0.41	0.49	38.2
14	R2	122	0.9	0.524	6.3	LOS A	4.5	113.2	0.38	0.49	29.4
Approach		1613	0.9	0.645	6.8	LOS A	6.9	172.7	0.41	0.49	37.3
West: Cypress West Leg											
5	L2	100	0.9	0.312	12.2	LOS B	1.5	37.7	0.78	0.89	26.1
2	T1	6	0.9	0.312	7.1	LOS A	1.5	37.7	0.78	0.89	21.9
12	R2	43	0.9	0.312	7.8	LOS A	1.5	37.7	0.78	0.89	25.2
Approach		149	0.9	0.312	10.7	LOS B	1.5	37.7	0.78	0.89	25.7
All Vehicles		2752	0.9	0.645	6.9	LOS A	6.9	172.7	0.43	0.51	36.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [1 Lane Roundabout 2040 PM]

Highway 1 & Cypress Ave
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	57	1.5	1.127	79.6	LOS F	76.8	1943.2	1.00	1.74	13.0
8	T1	1120	1.5	1.127	73.6	LOS F	76.8	1943.2	1.00	1.74	14.0
18	R2	27	1.5	1.127	73.3	LOS F	76.8	1943.2	1.00	1.74	11.1
Approach		1204	1.5	1.127	73.8	LOS E	76.8	1943.2	1.00	1.74	13.9
East: Cypress East Leg											
1	L2	17	1.5	0.121	19.1	LOS B	0.9	22.1	1.00	0.91	22.9
6	T1	9	1.5	0.121	13.9	LOS B	0.9	22.1	1.00	0.91	19.5
16	R2	6	1.5	0.121	14.8	LOS B	0.9	22.1	1.00	0.91	22.5
Approach		32	1.5	0.121	16.8	LOS B	0.9	22.1	1.00	0.91	21.8
North: RT 1 North Leg											
7	L2	11	1.5	1.062	47.3	LOS F	78.8	1994.0	1.00	0.84	17.4
4	T1	1120	1.5	1.062	41.3	LOS F	78.8	1994.0	1.00	0.84	20.4
14	R2	155	1.5	1.062	40.9	LOS F	78.8	1994.0	1.00	0.84	17.6
Approach		1286	1.5	1.062	41.3	LOS D	78.8	1994.0	1.00	0.84	20.0
West: Cypress West Leg											
5	L2	165	1.5	0.716	35.6	LOS D	7.6	193.1	1.00	1.29	18.4
2	T1	10	1.5	0.716	30.4	LOS C	7.6	193.1	1.00	1.29	15.2
12	R2	46	1.5	0.716	31.3	LOS C	7.6	193.1	1.00	1.29	17.9
Approach		221	1.5	0.716	34.5	LOS C	7.6	193.1	1.00	1.29	18.1
All Vehicles		2743	1.5	1.127	54.7	LOS D	78.8	1994.0	1.00	1.27	16.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 102 [2 Lane Roundabout 2040 PM]

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: RT 1 South Leg											
3	L2	57	1.5	0.541	12.5	LOS B	4.9	123.5	0.58	0.57	30.8
8	T1	1120	1.5	0.541	6.7	LOS A	4.9	123.5	0.56	0.57	36.9
18	R2	27	1.5	0.439	6.5	LOS A	3.4	86.1	0.54	0.56	29.5
Approach		1204	1.5	0.541	6.9	LOS A	4.9	123.5	0.56	0.57	36.4
East: Cypress East Leg											
1	L2	17	1.5	0.065	10.4	LOS B	0.3	7.2	0.72	0.79	27.8
6	T1	9	1.5	0.065	5.3	LOS A	0.3	7.2	0.72	0.79	23.0
16	R2	6	1.5	0.065	6.0	LOS A	0.3	7.2	0.72	0.79	27.1
Approach		32	1.5	0.065	8.1	LOS A	0.3	7.2	0.72	0.79	26.1
North: RT 1 North Leg											
7	L2	11	1.5	0.520	12.5	LOS B	4.6	116.0	0.37	0.48	35.0
4	T1	1120	1.5	0.520	6.6	LOS A	4.6	116.0	0.36	0.49	38.4
14	R2	155	1.5	0.422	6.2	LOS A	3.2	81.1	0.35	0.50	29.5
Approach		1286	1.5	0.520	6.6	LOS A	4.6	116.0	0.36	0.49	37.1
West: Cypress West Leg											
5	L2	165	1.5	0.378	11.0	LOS B	1.9	47.8	0.74	0.90	26.5
2	T1	10	1.5	0.378	6.0	LOS A	1.9	47.8	0.74	0.90	22.3
12	R2	46	1.5	0.378	6.7	LOS A	1.9	47.8	0.74	0.90	25.6
Approach		221	1.5	0.378	9.9	LOS A	1.9	47.8	0.74	0.90	26.1
All Vehicles		2743	1.5	0.541	7.1	LOS A	4.9	123.5	0.48	0.56	35.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Simtraffic
SR-1 Mitigated Buildout Report

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	0.6	8.8	0.1	43
Medio Ave	17	0.9	10.9	0.1	42
Magellan Ave	16	1.4	16.0	0.2	45
	55	1.0	21.3	0.3	48
	54	1.0	4.9	0.1	39
Coronado St	14	11.5	15.6	0.1	14
	53	6.6	10.9	0.1	19
	52	6.7	54.6	0.7	44
Capistrano Rd	13	18.8	27.5	0.1	16
	51	4.8	11.4	0.1	28
	50	0.4	4.1	0.1	44
Coral Reef Ave	12	1.6	14.0	0.2	46
	49	0.6	5.0	0.1	42
Capistrano Rd	11	0.6	8.4	0.1	54
St Etheldore St	10	6.5	84.7	1.3	54
Cypress Ave	9	12.3	35.0	0.3	34
Vermont Ave	8	2.1	21.4	0.2	27
Virginia Ave	7	3.0	7.0	0.1	28
California Ave	6	7.3	10.9	0.1	18
Vallemar St	5	0.9	14.4	0.1	27
Carlos St	4	7.7	43.7	0.5	42
16th St	58	4.6	7.2	0.0	17
8th St	3	2.4	39.9	0.4	38
7th St	2	1.0	5.2	0.0	34
2nd St	1	3.5	23.7	0.3	38
Total		108.2	506.4	5.4	39

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	1.1	7.8	0.1	40
	2	1.5	21.5	0.3	42
8th St	3	0.6	4.9	0.0	36
16th St	58	14.8	42.8	0.4	35
Carlos St	4	0.4	7.7	0.0	16
	5	156.8	200.2	0.5	9
California Ave	6	58.2	65.7	0.1	6
Virginia Ave	7	5.2	14.3	0.1	14
Vermont Ave	8	7.3	11.7	0.1	17
Cypress Ave	9	47.2	73.4	0.2	10
St Etheldore St	10	3.2	34.3	0.3	35
Capistrano Rd	11	6.0	75.2	1.3	61
	49	1.4	10.4	0.1	43
Coral Reef Ave	12	2.0	5.4	0.1	42
	50	2.4	15.2	0.2	42
	51	0.8	4.5	0.1	41
Capistrano Rd	13	15.6	21.4	0.1	15
	52	4.4	13.8	0.1	32
	53	5.9	54.0	0.7	45
Coronado St	14	14.9	19.0	0.1	11
	54	14.9	19.3	0.1	11
	55	4.2	8.2	0.1	24
Magellan Ave	16	6.4	26.3	0.3	39
Medio Ave	17	4.7	20.8	0.2	35
Miramar Dr	18	2.9	13.3	0.1	34
Total		382.8	790.9	5.4	25

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	2.4	11.8	0.1	35
Medio Ave	17	3.1	13.1	0.1	35
Magellan Ave	16	3.7	18.6	0.2	39
	55	1.5	21.7	0.3	47
	54	1.2	5.1	0.1	38
Coronado St	14	10.0	14.2	0.1	15
	53	8.0	12.3	0.1	17
	52	8.5	56.0	0.7	43
Capistrano Rd	13	28.3	36.8	0.1	12
	51	5.7	12.2	0.1	26
	50	0.5	4.2	0.1	43
Coral Reef Ave	12	2.4	14.8	0.2	43
	49	0.9	5.2	0.1	41
Capistrano Rd	11	0.8	8.6	0.1	52
St Etheldore St	10	8.5	89.4	1.3	51
Cypress Ave	9	14.7	38.0	0.3	32
Vermont Ave	8	2.9	22.2	0.2	26
Virginia Ave	7	3.5	7.5	0.1	27
California Ave	6	7.2	11.1	0.1	18
Vallemar St	5	0.9	14.5	0.1	27
Carlos St	4	8.0	44.1	0.5	41
16th St	58	4.5	7.0	0.0	18
8th St	3	2.6	40.3	0.4	37
7th St	2	1.2	5.4	0.0	33
2nd St	1	3.1	22.9	0.3	40
Total		134.2	537.1	5.4	36

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	3.6	12.8	0.1	30
	2	5.6	25.5	0.3	36
8th St	3	1.2	5.5	0.0	32
16th St	58	11.3	36.6	0.4	41
Carlos St	4	0.2	7.7	0.0	16
	5	6.3	43.3	0.5	42
California Ave	6	20.4	28.0	0.1	14
Virginia Ave	7	1.9	11.0	0.1	18
Vermont Ave	8	2.8	7.2	0.1	28
Cypress Ave	9	25.5	38.6	0.2	16
St Etheldore St	10	4.4	31.3	0.3	39
Capistrano Rd	11	8.4	83.5	1.3	55
	49	2.6	11.6	0.1	38
Coral Reef Ave	12	2.9	7.0	0.1	33
	50	3.7	16.6	0.2	38
	51	1.3	5.0	0.1	36
Capistrano Rd	13	19.3	25.1	0.1	13
	52	5.0	14.4	0.1	31
	53	7.4	55.3	0.7	44
Coronado St	14	19.2	26.1	0.1	9
	54	17.6	22.0	0.1	10
	55	4.6	8.5	0.1	23
Magellan Ave	16	7.4	27.6	0.3	37
Medio Ave	17	5.6	21.7	0.2	33
Miramar Dr	18	3.6	13.9	0.1	33
Total		191.9	586.1	5.4	34

Arterial Level of Service: NB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Miramar Dr	18	2.6	12.9	0.1	35
Medio Ave	17	4.2	14.1	0.1	32
Magellan Ave	16	4.4	19.3	0.2	37
	55	1.6	21.9	0.3	47
	54	1.4	5.3	0.1	36
Coronado St	14	9.8	14.1	0.1	15
	53	8.3	12.6	0.1	17
	52	8.7	56.5	0.7	43
Capistrano Rd	13	20.8	28.2	0.1	16
	51	5.9	12.5	0.1	26
	50	0.6	4.3	0.1	43
Coral Reef Ave	12	2.6	14.9	0.2	43
	49	0.9	5.3	0.1	40
Capistrano Rd	11	0.7	8.7	0.1	51
St Etheldore St	10	8.3	90.0	1.3	51
Cypress Ave	9	16.9	39.4	0.3	31
Vermont Ave	8	3.0	21.8	0.2	26
Virginia Ave	7	3.6	7.6	0.1	26
California Ave	6	7.5	11.1	0.1	18
Vallemar St	5	0.8	14.6	0.1	27
Carlos St	4	7.2	43.2	0.5	42
16th St	58	4.6	7.2	0.0	17
8th St	3	2.1	37.9	0.4	40
7th St	2	1.1	5.3	0.0	34
2nd St	1	2.9	23.0	0.3	40
Total		130.5	531.7	5.4	37

Arterial Level of Service: SB SR-1

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	1	3.3	11.6	0.1	30
	2	2.6	22.5	0.3	40
8th St	3	0.6	4.9	0.0	36
16th St	58	22.5	50.0	0.4	30
Carlos St	4	0.9	8.3	0.0	15
	5	81.4	117.4	0.5	15
California Ave	6	48.6	56.6	0.1	7
Virginia Ave	7	1.6	10.9	0.1	18
Vermont Ave	8	1.2	5.7	0.1	35
Cypress Ave	9	20.1	31.1	0.2	18
St Etheldore St	10	1.9	33.7	0.3	36
Capistrano Rd	11	6.8	80.7	1.3	57
	49	1.7	10.7	0.1	42
Coral Reef Ave	12	2.2	5.8	0.1	39
	50	2.7	15.6	0.2	41
	51	1.1	4.8	0.1	38
Capistrano Rd	13	19.6	25.1	0.1	13
	52	5.1	14.5	0.1	31
	53	6.1	54.0	0.7	45
Coronado St	14	8.4	12.6	0.1	17
	54	9.6	14.0	0.1	15
	55	3.1	7.1	0.1	27
Magellan Ave	16	5.3	25.5	0.3	40
Medio Ave	17	3.8	19.9	0.2	36
Miramar Dr	18	2.1	12.5	0.1	37
Total		262.4	655.5	5.4	30

SR-92 Mitigated Buildout Report

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	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	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	2	1429	0	0	3	841	1	0	2	15	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	844	0	0	1429	0	0	1857	2277	1429	1437	1436	3
Stage 1	-	-	-	-	-	-	1433	1433	-	3	3	-
Stage 2	-	-	-	-	-	-	424	844	-	1434	1433	-
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	792	-	-	476	-	-	56	40	165	111	133	1081
Stage 1	-	-	-	-	-	-	166	200	-	1020	893	-
Stage 2	-	-	-	-	-	-	608	379	-	166	200	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	792	-	-	476	-	-	56	40	165	109	133	1081
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	40	-	109	133	-
Stage 1	-	-	-	-	-	-	166	199	-	1017	893	-
Stage 2	-	-	-	-	-	-	607	379	-	163	199	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	42.2	41
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	100	792	-	-	476	-	-	116
HCM Lane V/C Ratio	0.033	0.003	-	-	-	-	-	0.141
HCM Control Delay (s)	42.2	9.6	-	-	0	-	-	41
HCM Lane LOS	E	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1205	0	120	340	116	304
Future Volume (veh/h)	1205	0	120	340	116	304
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1310	0	130	370	126	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1348	1146	143	1564	157	141
Arrive On Green	0.72	0.00	0.08	0.84	0.09	0.00
Sat Flow, veh/h	1863	1583	1774	1863	1774	1583
Grp Volume(v), veh/h	1310	0	130	370	126	0
Grp Sat Flow(s),veh/h/ln	1863	1583	1774	1863	1774	1583
Q Serve(g_s), s	73.3	0.0	8.1	4.4	7.8	0.0
Cycle Q Clear(g_c), s	73.3	0.0	8.1	4.4	7.8	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1348	1146	143	1564	157	141
V/C Ratio(X)	0.97	0.00	0.91	0.24	0.80	0.00
Avail Cap(c_a), veh/h	1382	1174	143	1598	254	226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.4	0.0	51.1	1.8	50.0	0.0
Incr Delay (d2), s/veh	17.7	0.0	49.7	0.1	9.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	43.7	0.0	6.0	2.3	4.2	0.0
LnGrp Delay(d),s/veh	32.1	0.0	100.7	1.9	59.0	0.0
LnGrp LOS	C		F	A	E	
Approach Vol, veh/h	1310			500	126	
Approach Delay, s/veh	32.1			27.6	59.0	
Approach LOS	C			C	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.9	13.0	85.0				98.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	9.0	83.0				96.0
Max Q Clear Time (g_c+I1), s		9.8	10.1	75.3				6.4
Green Ext Time (p_c), s		0.1	0.0	5.7				2.2

Intersection Summary		
HCM 2010 Ctrl Delay		32.7
HCM 2010 LOS		C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	448	1081	992	36	41	111
Future Volume (vph)	448	1081	992	36	41	111
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	0.95	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	3539	1550	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1550	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	487	1175	1078	39	45	121
RTOR Reduction (vph)	0	0	0	23	0	53
Lane Group Flow (vph)	487	1175	1078	16	45	68
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)	20.3	50.0	25.7	25.7	5.3	25.6
Effective Green, g (s)	20.3	50.0	25.7	25.7	5.3	25.6
Actuated g/C Ratio	0.32	0.79	0.41	0.41	0.08	0.40
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)	567	1471	1436	629	148	727
v/s Ratio Prot	c0.28	c0.63	0.30		c0.03	0.01
v/s Ratio Perm				0.01		0.04
v/c Ratio	0.86	0.80	0.75	0.03	0.30	0.09
Uniform Delay, d1	20.2	3.8	16.1	11.3	27.3	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.9	2.9	2.0	0.0	0.4	0.0
Delay (s)	32.0	6.7	18.1	11.3	27.7	11.7
Level of Service	C	A	B	B	C	B
Approach Delay (s)		14.1	17.8		16.0	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	63.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	70	482	1463	134	461
Future Volume (veh/h)	765	70	482	1463	134	461
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	832	0	524	1590	146	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	917	779	546	1553	175	156
Arrive On Green	0.49	0.00	0.31	0.83	0.10	0.00
Sat Flow, veh/h	1863	1583	1774	1863	1774	1583
Grp Volume(v), veh/h	832	0	524	1590	146	0
Grp Sat Flow(s),veh/h/ln	1863	1583	1774	1863	1774	1583
Q Serve(g_s), s	48.7	0.0	34.4	99.0	9.6	0.0
Cycle Q Clear(g_c), s	48.7	0.0	34.4	99.0	9.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	917	779	546	1553	175	156
V/C Ratio(X)	0.91	0.00	0.96	1.02	0.83	0.00
Avail Cap(c_a), veh/h	917	779	553	1553	239	213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.7	0.0	40.3	9.9	52.5	0.0
Incr Delay (d2), s/veh	12.6	0.0	28.1	29.0	16.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	0.0	21.1	61.7	5.5	0.0
LnGrp Delay(d),s/veh	40.3	0.0	68.4	38.9	69.0	0.0
LnGrp LOS	D		E	F	E	
Approach Vol, veh/h	832			2114	146	
Approach Delay, s/veh	40.3			46.2	69.0	
Approach LOS	D			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.7	40.6	62.4				103.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	37.0	58.0				99.0
Max Q Clear Time (g_c+I1), s		11.6	36.4	50.7				101.0
Green Ext Time (p_c), s		0.1	0.1	3.1				0.0

Intersection Summary			
HCM 2010 Ctrl Delay			45.7
HCM 2010 LOS			D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	312	865	1688	91	19	257
Future 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	0.95	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	3539	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	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	30	0	9
Lane Group Flow (vph)	339	940	1835	69	21	270
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)	18.3	69.3	47.0	47.0	7.2	25.5
Effective Green, g (s)	18.3	69.3	47.0	47.0	7.2	25.5
Actuated g/C Ratio	0.22	0.82	0.56	0.56	0.09	0.30
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)	383	1527	1968	862	150	543
v/s Ratio Prot	c0.19	0.50	c0.52		0.01	c0.04
v/s Ratio Perm				0.04		0.13
v/c Ratio	0.89	0.62	0.93	0.08	0.14	0.50
Uniform Delay, d1	32.1	2.8	17.3	8.7	35.8	24.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.4	0.5	8.6	0.0	0.2	0.3
Delay (s)	52.4	3.3	25.9	8.7	35.9	24.5
Level of Service	D	A	C	A	D	C
Approach Delay (s)		16.3	25.0		25.3	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	3.1

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	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	1	936	4	3	1642	3	0	0	2	12	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1645	0	0	940	0	0	2597	2591	938	2589	2590	1642
Stage 1	-	-	-	-	-	-	940	940	-	1648	1648	-
Stage 2	-	-	-	-	-	-	1657	1651	-	941	942	-
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	393	-	-	729	-	-	17	25	321	17	25	123
Stage 1	-	-	-	-	-	-	316	342	-	125	157	-
Stage 2	-	-	-	-	-	-	124	156	-	316	342	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	393	-	-	729	-	-	14	24	321	16	24	123
Mov Cap-2 Maneuver	-	-	-	-	-	-	14	24	-	16	24	-
Stage 1	-	-	-	-	-	-	315	341	-	125	149	-
Stage 2	-	-	-	-	-	-	104	149	-	313	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	16.3	$ 314.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	393	-	-	729	-	-	30
HCM Lane V/C Ratio	0.007	0.003	-	-	0.004	-	-	0.87
HCM Control Delay (s)	16.3	14.2	-	-	10	0	-	$ 314.3
HCM Lane LOS	C	B	-	-	A	A	-	F
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	2.9

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	802	74	411	1476	97	383
Future Volume (veh/h)	802	74	411	1476	97	383
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	872	0	447	1604	105	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1075	914	472	1623	129	115
Arrive On Green	0.58	0.00	0.27	0.87	0.07	0.00
Sat Flow, veh/h	1863	1583	1774	1863	1774	1583
Grp Volume(v), veh/h	872	0	447	1604	105	0
Grp Sat Flow(s),veh/h/ln	1863	1583	1774	1863	1774	1583
Q Serve(g_s), s	53.4	0.0	35.5	114.4	8.4	0.0
Cycle Q Clear(g_c), s	53.4	0.0	35.5	114.4	8.4	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1075	914	472	1623	129	115
V/C Ratio(X)	0.81	0.00	0.95	0.99	0.81	0.00
Avail Cap(c_a), veh/h	1075	914	532	1636	198	177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.1	0.0	51.6	8.6	65.5	0.0
Incr Delay (d2), s/veh	4.8	0.0	24.9	19.4	13.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.8	0.0	20.6	64.9	4.6	0.0
LnGrp Delay(d),s/veh	28.9	0.0	76.5	27.9	79.1	0.0
LnGrp LOS	C		E	C	E	
Approach Vol, veh/h	872			2051	105	
Approach Delay, s/veh	28.9			38.5	79.1	
Approach LOS	C			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.5	42.2	86.8				129.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	43.0	79.0				126.0
Max Q Clear Time (g_c+I1), s		10.4	37.5	55.4				116.4
Green Ext Time (p_c), s		0.1	0.7	6.4				8.5

Intersection Summary	
HCM 2010 Ctrl Delay	37.2
HCM 2010 LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	338	772	1627	77	22	213
Future 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	0.95	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	3539	1551	1770	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	1863	3539	1551	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	367	839	1768	84	24	232
RTOR Reduction (vph)	0	0	0	27	0	11
Lane Group Flow (vph)	367	839	1768	57	24	221
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)	19.2	69.0	45.8	45.8	7.2	26.4
Effective Green, g (s)	19.2	69.0	45.8	45.8	7.2	26.4
Actuated g/C Ratio	0.23	0.82	0.54	0.54	0.09	0.31
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	1526	1925	843	151	562
v/s Ratio Prot	c0.21	0.45	c0.50		0.01	c0.03
v/s Ratio Perm				0.04		0.11
v/c Ratio	0.91	0.55	0.92	0.07	0.16	0.39
Uniform Delay, d1	31.7	2.5	17.5	9.1	35.7	22.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.9	0.2	7.4	0.0	0.2	0.2
Delay (s)	55.6	2.7	24.8	9.1	35.9	22.8
Level of Service	E	A	C	A	D	C
Approach Delay (s)		18.8	24.1		24.0	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	84.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Simtraffic
SR-92 Mitigated Buildout Report

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	37.6	0.3	26
	15	2.4	18.6	0.1	26
	16	1.2	9.4	0.1	26
	17	1.1	8.6	0.1	26
	45	11.4	85.9	0.6	26
	19	6.9	51.1	0.4	26
	20	1.4	10.1	0.1	26
	21	8.0	47.4	0.3	25
	22	15.5	38.2	0.2	18
	23	16.7	29.6	0.1	13
	24	36.0	57.5	0.2	11
	25	45.8	68.2	0.2	10
	26	63.3	86.9	0.2	8
	27	63.0	85.4	0.2	8
Skyline Blvd (West)	48	46.0	56.3	0.1	8
	28	3.9	19.2	0.1	24
	29	1.2	11.7	0.1	26
	30	2.1	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	1.9	14.7	0.1	25
	35	2.6	19.4	0.1	26
	36	2.4	18.0	0.1	26
	37	4.3	31.9	0.2	26
	38	3.8	28.1	0.2	26
	39	3.3	24.4	0.2	26
	40	2.2	15.8	0.1	26
	46	4.8	33.9	0.2	26
SR-35 (East)	49	6.0	15.7	0.1	25
Total		371.8	1031.9	5.6	19

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	8.1	21.7	0.1	18
	40	2.9	32.0	0.2	27
	39	1.7	15.5	0.1	26
	38	2.6	23.6	0.2	27
	37	3.2	27.4	0.2	26
	36	3.9	31.4	0.2	26
	35	2.3	18.1	0.1	26
	34	2.5	19.7	0.1	26
	33	1.8	14.2	0.1	26
	32	3.3	25.2	0.2	26
	31	1.0	8.0	0.1	26
	30	1.4	10.7	0.1	26
	29	2.4	18.0	0.1	26
	28	1.6	11.8	0.1	26
Skyline Blvd (West)	48	3.0	11.3	0.1	40
	27	0.7	15.9	0.1	29
	26	1.2	24.3	0.2	28
	25	1.7	25.4	0.2	28
	24	1.9	24.7	0.2	27
	23	2.0	23.3	0.2	28
	22	1.3	14.3	0.1	27
	21	2.4	25.1	0.2	27
	20	4.3	43.7	0.3	27
	19	1.0	9.8	0.1	27
	45	5.3	50.1	0.4	27
	17	9.2	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	4.4	37.5	0.3	27
	12	1.0	8.2	0.1	26
	11	3.9	30.7	0.2	26
Ox Mt Landfill Rd	47	4.5	11.4	0.1	26
Total		90.5	752.2	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	29.1	0.2	28
	13	0.7	7.9	0.1	27
	14	3.8	36.8	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	10.4	84.8	0.6	27
	19	6.4	50.5	0.4	27
	20	1.3	10.1	0.1	26
	21	5.9	45.2	0.3	26
	22	3.4	26.2	0.2	26
	23	2.0	15.0	0.1	26
	24	3.3	24.8	0.2	26
	25	3.5	26.0	0.2	26
	26	3.7	27.6	0.2	26
	27	4.8	27.5	0.2	25
Skyline Blvd (West)	48	30.9	41.5	0.1	11
	28	3.4	18.7	0.1	24
	29	1.1	11.6	0.1	27
	30	1.9	17.7	0.1	27
	31	1.3	10.7	0.1	26
	32	0.9	7.7	0.1	27
	33	3.1	25.0	0.2	26
	34	1.9	14.7	0.1	26
	35	2.5	19.3	0.1	27
	36	2.3	17.9	0.1	26
	37	4.2	31.8	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	4.7	33.8	0.2	26
SR-35 (East)	49	5.6	15.2	0.1	26
Total		129.0	789.8	5.6	25

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	14.4	27.9	0.1	14
	40	3.5	32.5	0.2	27
	39	2.0	15.9	0.1	26
	38	3.1	24.1	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	25.4	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	1.9	12.1	0.1	25
Skyline Blvd (West)	48	9.1	20.3	0.1	22
	27	2.1	17.5	0.1	27
	26	2.6	25.7	0.2	27
	25	3.2	26.8	0.2	27
	24	3.3	26.0	0.2	26
	23	3.2	24.4	0.2	26
	22	2.0	15.0	0.1	26
	21	3.5	26.2	0.2	26
	20	6.1	45.6	0.3	26
	19	1.4	10.1	0.1	26
	45	7.0	51.6	0.4	26
	17	11.9	86.3	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	4.4	31.2	0.2	26
Ox Mt Landfill Rd	47	2.3	8.6	0.1	30
Total		122.5	786.4	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	29.2	0.2	28
	13	0.7	7.9	0.1	27
	14	3.8	36.8	0.3	27
	15	2.0	18.3	0.1	26
	16	1.0	9.3	0.1	26
	17	1.0	8.5	0.1	27
	45	10.2	85.0	0.6	27
	19	6.4	50.7	0.4	26
	20	1.3	10.1	0.1	26
	21	5.9	45.4	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	3.8	27.8	0.2	26
	27	5.4	28.2	0.2	24
Skyline Blvd (West)	48	29.6	40.7	0.1	11
	28	3.4	18.7	0.1	24
	29	1.1	11.6	0.1	27
	30	2.0	17.7	0.1	26
	31	1.3	10.8	0.1	26
	32	0.9	7.7	0.1	27
	33	3.1	25.0	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	31.8	0.2	26
	38	3.7	28.0	0.2	26
	39	3.3	24.4	0.2	26
	40	2.1	15.8	0.1	26
	46	5.5	34.6	0.2	25
SR-35 (East)	49	5.9	15.3	0.1	26
Total		128.6	792.0	5.6	25

Arterial Level of Service: WB SR-92

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
	46	13.9	27.5	0.1	15
	40	3.4	32.5	0.2	27
	39	1.9	15.8	0.1	26
	38	3.0	24.0	0.2	26
	37	3.6	27.8	0.2	26
	36	4.2	31.8	0.2	26
	35	2.5	18.3	0.1	25
	34	2.7	19.8	0.1	26
	33	2.0	14.3	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	2.5	18.1	0.1	26
	28	1.9	12.1	0.1	26
Skyline Blvd (West)	48	8.7	19.8	0.1	23
	27	2.2	17.5	0.1	27
	26	2.6	25.7	0.2	27
	25	3.2	26.8	0.2	27
	24	3.2	25.8	0.2	26
	23	3.1	24.4	0.2	26
	22	1.9	14.9	0.1	26
	21	3.5	26.2	0.2	26
	20	6.1	45.5	0.3	26
	19	1.4	10.1	0.1	26
	45	7.0	51.5	0.4	26
	17	11.8	85.8	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	4.4	31.2	0.2	26
Ox Mt Landfill Rd	47	2.9	9.4	0.1	27
Total		121.4	784.9	5.6	26