Short Range Highway Plan: 2021-2030

Final

June 3, 2021

SAN MATEO COUNTY
Transportation Authority

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San Mateo County Transportation Authority

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Executive Summary

The Short Range Highway Plan (SRHP) is a key document that establishes a strategy for directing Measure A and Measure W sales tax revenues toward highway improvements in San Mateo County. The San Mateo County Transportation Authority (TA) updates the SRHP on a 10-year cycle, with the last plan prepared for the 2011-2020 time period.

This 2021 update to the SRHP includes a policy framework for making investment decisions. With the successful passage of Measure W in 2018, the TA has the opportunity to deliver additional transportation projects and programs, including highway projects that are eligible for funding through the Measure W Countywide Highway Congestion Improvements category. To create a consolidated highway program that addresses both the goals of Measure A and the core principles of Measure W, this SRHP considers 22 existing projects as well as eight new projects. Project proponents whose projects are included in the 2021 SRHP are eligible to apply to the TA for project funding.

The TA's *2020-2024 Strategic Plan* (Strategic Plan) forms the backbone of the policy guidance for development of the SRHP. The Strategic Plan calls for updating the SRHP for the competitive highways programs and specifically calls for the TA to establish criteria that could be applied to identify which highway projects are of countywide significance. The SRHP establishes that criteria and evaluates all 30 projects in the plan. Of those, seven are determined to meet the criteria for countywide significance.

This plan establishes a detailed approach for evaluating the costs and benefits of projects to be submitted by sponsors when the TA issues its next "call for projects". The approach will allow the TA to use evaluation criteria directly from the Strategic Plan to uniformly assign scores for projects when responding to funding requests.

Finally, this plan discusses the remaining funding challenges that exist in delivering $2.9 billion in eligible highway projects. Even with Measure A and Measure W revenues, a shortfall of over $1 billion will exist using current dollars for all recommended projects to be carried to completion by 2049. The plan identifies where other regional, state and Federal funding sources may exist to offset this shortfall.

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1.0 OVERVIEW

The Short Range Highway Plan (SRHP) is a key document that establishes a strategy for directing Measure A and Measure W sales tax revenues toward highway improvements in San Mateo County. The San Mateo County Transportation Authority (TA) updates the SRHP on a 10-year cycle. The current SRHP covers 2011 to 2020. This document, the 2021 update to the SRHP, covers 2021 through 2030.

1.1 PURPOSE OF THE SHORT RANGE HIGHWAY PLAN

As defined in the TA's *Strategic Plan 2020-2024 (*Strategic Plan), the Short Range Highway Plan (SRHP) is a 10-year implementation plan that includes a policy framework for making investment decisions. The SRHP provides a snapshot of current highway program needs and identifies potential costs for all eligible projects regardless of funding source over the 10-year period. With the successful passage of Measure W in 2018, the TA has the opportunity to provide additional funding for various transportation programs including the Countywide Highway Congestion Improvements category. This new SRHP considers both existing projects as well as new projects to create a consolidated highway program that addresses both the goals of Measure A and the core principles of Measure W.

1.2 AGENCY HISTORY

In June 1988, the voters of San Mateo County approved the creation of the TA. Measure A authorized a one-half cent sales tax that funded a Transportation Expenditure Plan with potential transportation projects, including various specified highway, grade separation, and Caltrain commuter rail projects through the TA for a period of 20 years. The original Measure A expired in December 2008. In November 2004, County voters reauthorized the TA's mission and a new TEP for an additional 25 years beginning in 2009 that runs through 2033. In November 2018, the voters of San Mateo County approved Measure W, an additional one-half cent sales tax, beginning July 2019 and ending June 30, 2048, to fund implementation of the San Mateo County Congestion Relief Plan (CRP), among other transportation services in the County. Fifty percent of Measure W is to be administered by the San Mateo County Transit District (SMCTD) for SamTrans bus operations and improvements, and the other 50 percent by the TA. The 50 percent administered by the TA provides, among other project and program categories, 22.5 percent of total funding for highway projects. Measure W is a 30-year sales tax measure that sunsets in 2049. The TA's Strategic Plan provides the policy framework and guidance for implementing both the Measure A Transportation Programs and the TA-administered portion of the new Measure W CRP.

1.3 MEASURE A AND MEASURE W OVERVIEW

1.3.1 Measure A Transportation Expenditure Plan

The Measure A TEP identifies six primary categories for investment: Transit, Highways, Local Streets/Transportation, Grade Separations, Pedestrian and Bicycle, and Alternative Congestion Relief Programs, to be guided by the following Vision and Goals and Objectives:

1. Reduce commute corridor congestion
2. Make regional connections
3. Enhance safety
4. Meet local mobility needs

The TA administers Measure A funds. Every four years, a Strategic Plan is updated to guide the evaluation of projects that apply for funding. Figure 1-1 illustrates the percentage allocation of funds to each program category identified in the Measure A TEP.

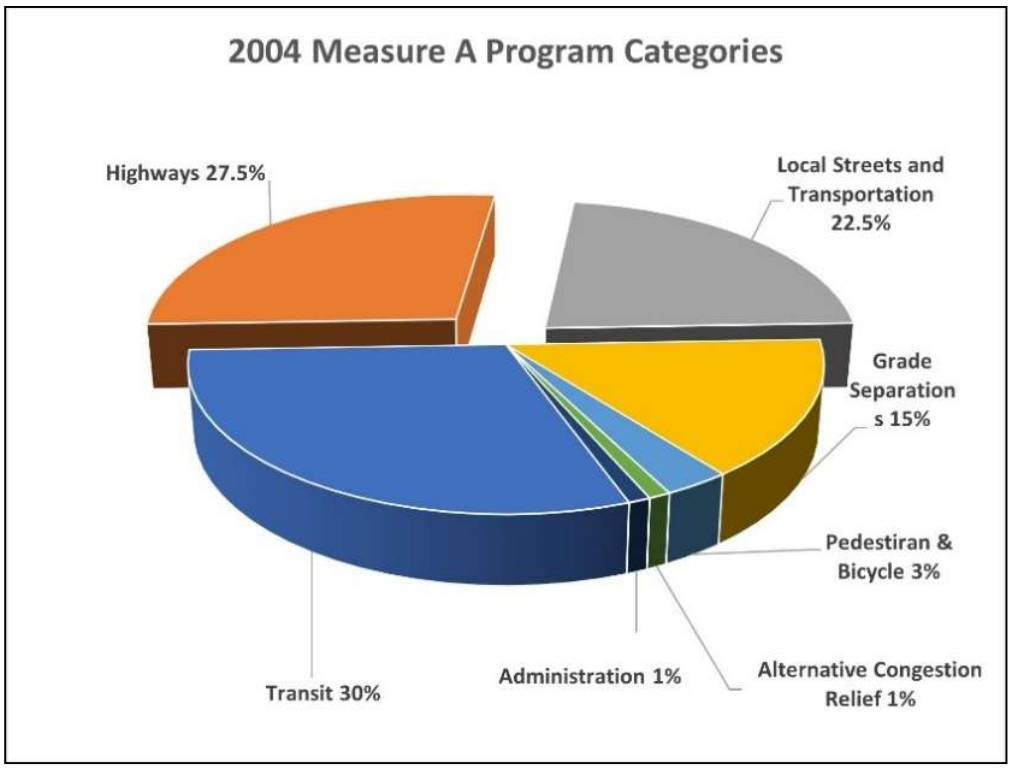

Figure 1-1. Measure A TEP Program Categories

The Measure A TEP allocated 27.5 percent for highways and 22.5 percent for local streets and transportation.

1.3.2 Measure W Transportation Expenditure Plan

Measure W establishes five Investment Categories for these funds: Countywide Highway Congestion Relief, Local Safety/Pothole, Bicycle/Pedestrian, Regional Transit Connections, and Public Transit.

The fund categories include 22.5 percent identified for countywide highway congestion relief and another 10 percent for local investment shares. Other TA-administered categories include funds established for Caltrain grade separations, expanded bicycle and pedestrian facilities and improved transit connections. Half of the Measure W funds are administered by the TA and the remaining 50 percent are administered by the SMCTD. An illustration of the percentage allocations is presented in Figure 1-2.

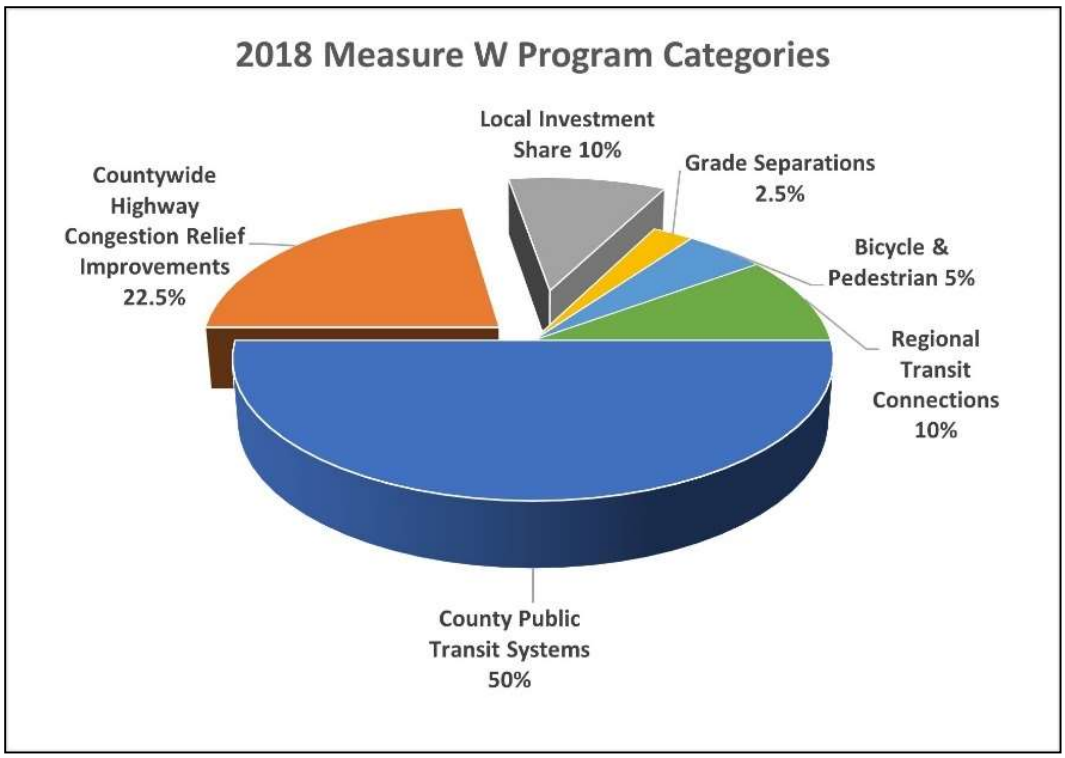

Figure 1-2. Measure W TEP Program Categories

1.4 PREVIOUSLY FUNDED PROJECTS

The 2011-2020 SRHP included a list of projects that became eligible for funding, provided that project sponsors subsequently submitted a funding request through the Call for Projects (CFP) that followed the SRHP.[1]

Previously submitted projects include active projects submitted by the towns, cities and the County for funding consideration in prior Capital Improvement Programs (CIP). The complete list of Measure A projects is provided as Table 16 in the *Existing and Future Conditions Report* (Appendix A) and is shown on Figure 1-3. Since its inception in 1988, Measure A has expended or committed to spending about $1.18 billion in collected funds.[2]

1.5 PLAN DEVELOPMENT PROCESS

Development of the 2021 SRHP and CIP was initiated in Summer of 2020 when the TA Board authorized staff to prepare the update. A project team comprised TA staff with consultant support. Initial tasks included reviewing overall goals and intentions to guide the SRHP development, examining existing and future transportation and traffic conditions, and conducting a project inventory to identify the scope, schedule, and cost of proposed roadway projects that could be eligible for funding through Measures A and W. To ascertain detailed project information, TA staff conferred with the project sponsors, which include participating cities and San Mateo County. A project evaluation tool was developed to assess the need, effectiveness, sustainability, and benefit/cost of all proposed projects. In addition, the project team assessed the need to consider other potential future projects resulting from congestion or safety deficiencies, referred to as a "gap analysis."

During the course of the SRHP development, the team organized all of the updated project information into a CIP, which was drafted and circulated to the project proponents for review. The CIP includes a financially uncontrained list of previous projects not yet completed as well as newly proposed projects put forth by local sponsors that may be needed to address existing and future traffic congestion and safety.

The overall process for developing the SRHP is shown in Figure 1-4.

[1] San Mateo County Transportation Authority, New Measure A Program Short-range Highway Plan (2011-2021), October 2011.
[2] San Mateo County Transportation Authority, Measure A Program Status Report, June 30, 2020.

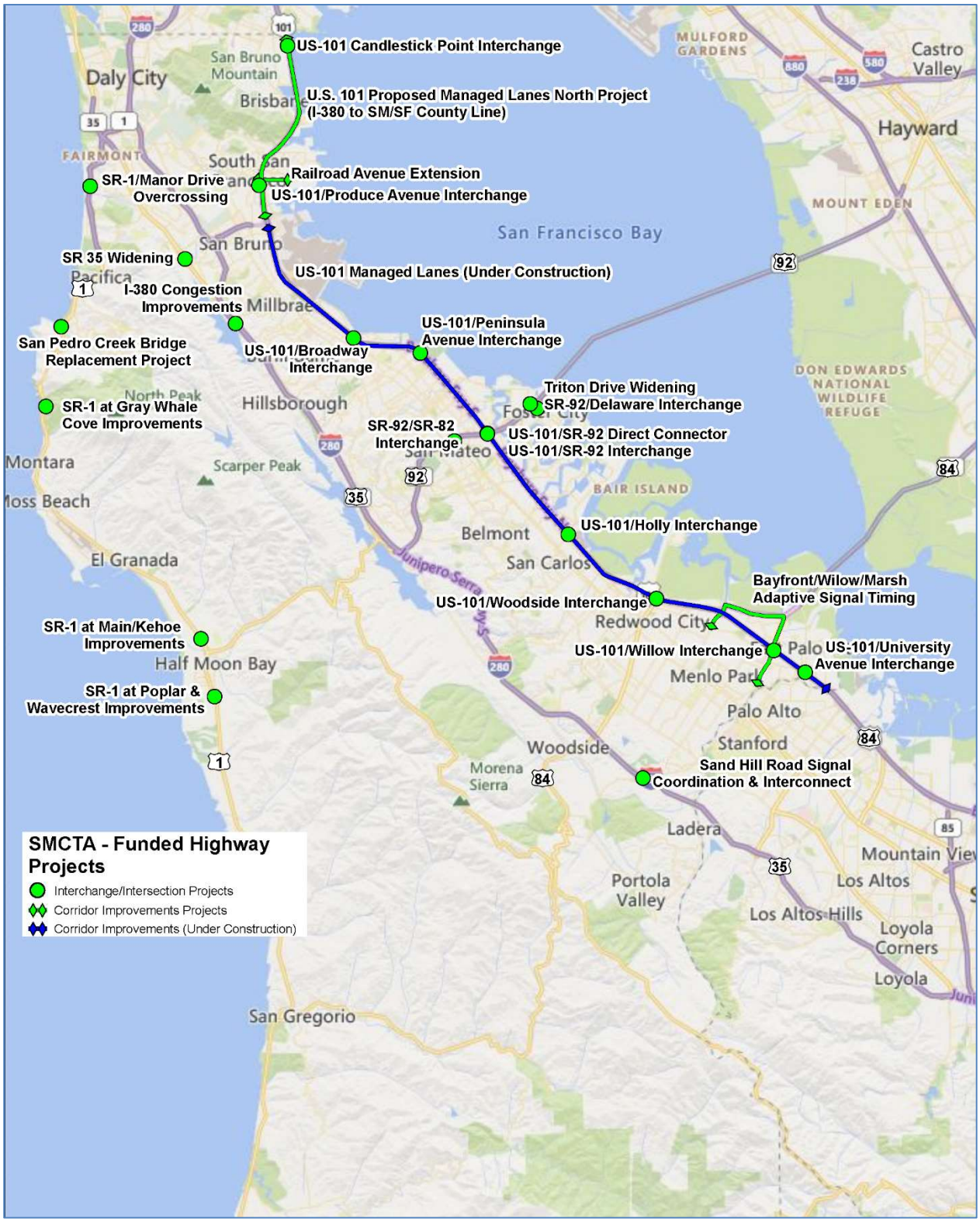

Figure 1-3. Map of Measure A Projects

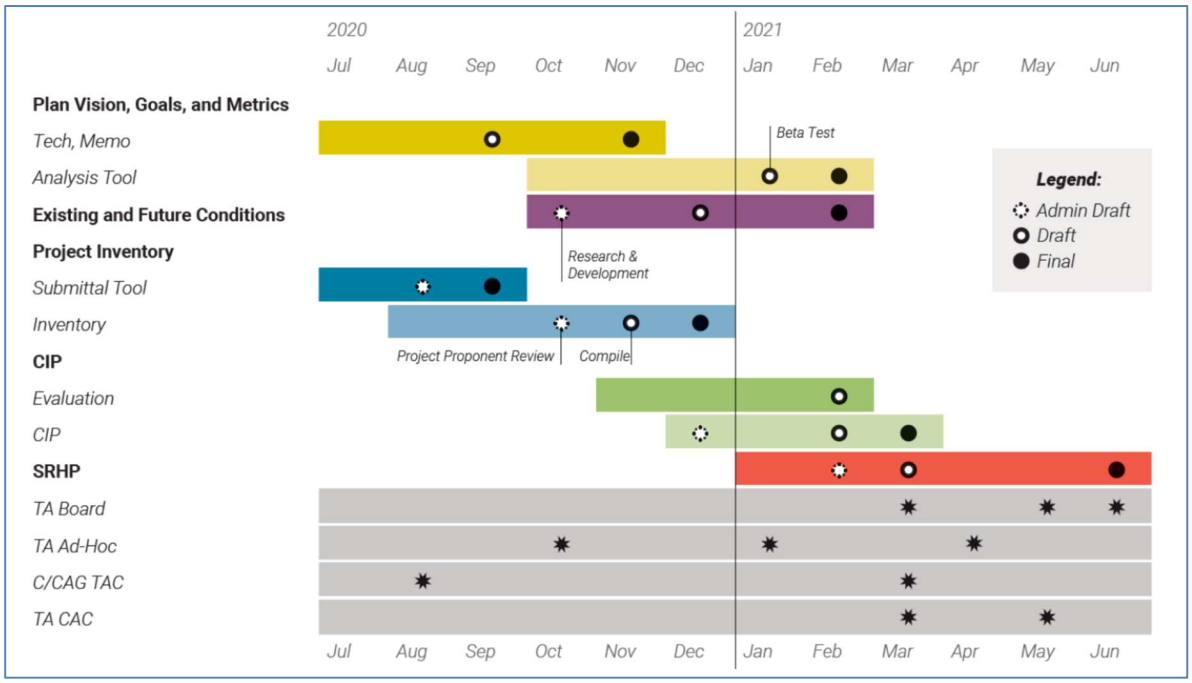

Figure 1-4. SRHP Development Process

1.6 STAKEHOLDER ENGAGEMENT

The SRHP was developed with a core group of stakeholders that were identified during the Strategic Plan process, namely the City/County Association of Governments of San Mateo County Technical Advisory Committee (C/CAG TAC), the TA Citizens Advisory Committee (TA CAC) and a TA Board of Directors Ad-Hoc Committee.

Two meetings were held with C/CAG TAC to solicit input from stakeholders across the county. The first meeting in August 2020 focused on introducing the project and requesting data on individual highway projects potential sponsors wanted included in the SRHP. The second meeting in March 2021 focused on presenting policy updates and providing an opportunity for potential sponsors to review their project information and fact sheets. Additionally, local sponsors who submitted projects were contacted individually to verify project status and details.

The TA has multiple forums to engage both the CAC and Board of Directors for input. For the SRHP, two presentations were held with the TA CAC as part of their regular meetings. The first presentation in March 2021 focused on new policy considerations for inclusion in the SRHP and a review of initially submitted projects. The second presentation in May 2021 was focused on the review of the Draft SRHP and CIP documents. The TA Board also elected to create an Ad-Hoc Committee to provide policy guidance on behalf of the full Board during the development of the SRHP. Directors Horsely, Mates, and Medina participated in three Ad-Hoc Committee meetings in October 2020, January 2021, and April 2021.

2.0 POLICY FRAMEWORK

This SRHP was developed using the guidance from past efforts, including expenditure plans approved by voters and the TA-adopted Strategic Plan. This section details the framework upon which this plan is based and the specific goals developed for the highway program in particular.

2.1 ESTABLISHED POLICY GUIDANCE

This SRHP has been guided by established goals set in Measure A and W TEPs as well as the TA-adopted Strategic Plan. The overall guidance is explained here, and the application of this guidance is found in subsequent chapters.

2.1.1 Measure A Goals

Measure A policy guidance is contained in the 2009-2033 TEP. In addition to designating funding percentages for the six program categories, the TEP lays out goals and objectives for the Measure A programs as listed below.

Goal 1: Reduce Commute Corridor Congestion

A. Improve mass transit serving the County through investments in Caltrain, BART, ferries, and local shuttle services.

B. Construct key highway projects which remove bottlenecks in the most congested commute corridors as indicated by engineers and confirmed by public opinion.

C. Provide funding for supplemental countywide highway projects determined to be critical for congestion reduction.

D. Implement information technologies to optimize the efficiency of the transportation system.

E. Provide incentives for employers to continue and expand their financial support for commute alternatives.

Goal 2: Make Regional Connections

A. Improve Caltrain's Baby Bullet service as an alternative to driving on Highway 101 along the Peninsula.

B. Provide San Mateo County's station and route improvements for the Dumbarton rail line connection with Alameda County.

C. Provide financial assistance as SamTrans' local match for capital investments and operating expenditures associated with the existing San Mateo County/SFO (San Francisco International Airport) BART Extension.

D. Provide financial assistance as local match funds for cost-effective ferry service to South San Francisco and Redwood City.

Goal 3: Enhance Safety

A. Construct roadway/rail grade separations (roadway under or overcrossings) along the Caltrain and Dumbarton rail lines in San Mateo County.

B. Provide safe paths for bicyclists and pedestrians.

C. Improve or maintain local streets, roads and other transportation facilities.

Goal 4: Meet Local Mobility Needs

A. Provide adequate paratransit service for eligible seniors and people with disabilities through the Redi-Wheels and other accessible services administered by SamTrans.

B. Improve local shuttle services to provide a viable option to the private automobile for local trips, and to meet the needs of transit dependents.

C. Provide an assured source of funding to Cities and the County for local street and road improvement and maintenance to meet the unique transportation needs of each community.

2.1.2 Measure W Core Principles

Measure W policy guidance is contained in the accompanying CRP. This plan identifies the program categories and percentage split of tax revenues that are to be implemented with guidance from the 11 Measure W Core Principles. These are listed as:

1. Relieve traffic congestion countywide.

2. Invest in a financially sustainable public transportation system that increases ridership, embraces innovation, creates more transportation choices, improves travel experience, and provides quality, affordable transit options for youth, seniors, people with disabilities, and people with lower incomes.

3. Implement environmentally friendly transportation solutions and projects that incorporate green stormwater infrastructure and plan for climate change.

4. Promote economic vitality, economic development, and the creation of quality jobs.

5. Maximize opportunities to leverage investment and services from public and private partners.
6. Enhance safety and public health.
7. Invest in repair and maintenance of existing and future infrastructure.
8. Facilitate the reduction of vehicle miles traveled, travel times, and greenhouse gas emissions.
9. Incorporate the inclusion and implementation of complete-street policies and other strategies that encourage safe accommodation of all people using the roads, regardless of mode of travel.
10. Incentivize transit, bicycle, pedestrian, carpooling, and other shared-ride options over driving alone.
11. Maximize potential traffic reduction potential associated with the creation of housing in high-quality transit corridors.

2.1.3 Strategic Plan 2020-2024

Project evaluation criteria for the highway program along were developed as part of the Strategic Plan. The evaluation criteria, along with evaluation weightings, were derived from the goals and core principles in the Measure A and Measure W programs.

The process of developing the evaluation criteria and weightings received considerable input from both the Stakeholder Advisory Group (SAG) and the Technical Advisory Group (TAG). Adding to an initially suggested set of criteria generated by the TA staff, the advisory group members generated hundreds of potentially relevant criteria. These were refined through a series of facilitated breakout sessions. Board Ad Hoc members, TA staff, and consultants also contributed significant input to the process which resulted in the criteria listed in Table 2-1 later in this chapter.

Although the Strategic Plan process resulted in a policy framework for administering the highway programs, some details have been left for development as part of this SRHP update. These details include the following:

- While the Strategic Plan provides the criteria and scoring rubric, it does not specify the exact technical metrics or data sources that will be used in applying the scoring rubric.
- The Strategic Plan does not detail the process for identifying new projects to address known congestion or safety needs.
- The Strategic Plan calls for identification of highway projects of countywide significance as part of the SRHP update but does not specify exactly how these projects will be identified.

2.2 SHORT RANGE HIGHWAY PLAN OUTCOMES

This SRHP has a specific role within larger expenditure plans, and creates a consolidated program for distributing funds from Measures A and W. The Strategic Plan identified a specific set of outcomes for the SRHP to address including the following:

- To assist in long-term policy guidance and financial planning for highway projects
- To develop when feasible, a quantitative assessment of how projects advance the goals and core principles
- To define how to determine projects of countywide significance
- To establish a list projects and an investment policy for projects of countywide significance
- To develop a list of potential projects where current congestion and safety needs are not being addressed
- To create an unconstrained 10-year CIP that addresses known safety and congestion issues

2.3 PROJECTS OF COUNTYWIDE SIGNIFICANCE

The Strategic Plan identifies a requirement for "Identification of highway projects of countywide significance and possibly determining an appropriate level of funding to be set-aside for these projects, if appropriate and desired."[3] A key task included in the 2021 SRHP Update is to define the criteria that can be applied to identify which projects are of countywide significance.

2.3.1 Distinguishing Projects of Countywide Significance

The Strategic Plan emphasized the role of the TA in identifying projects of countywide significance since local jurisdictions may have limited resources to implement large highly complex highway projects that impact the workers and residents in the broader county and beyond.

The Strategic Plan also recommended that the TA consider setting aside funding for projects of countywide significance to strike a balance with local needs as part of the SRHP/CIP update.

The adopted Strategic Plan highway program call for project inventory evaluation criteria includes the identification of whether a project is considered to be of countywide significance but did not provide a method to ascertain this. Therefore, a definition and screening process was developed to determine whether submitted projects in the CIP could be considered significant countywide as listed below.

[3] San Mateo County Transportation Authority Strategic Plan 2020-2024, p. 55.

- **Screening Criteria One (Pass/Fail):** Does the project connect two freeways or serve as a state highway facility that provides a connection between a freeway and a state highway facility?
- **Screening Criteria Two:** If the answer to the first question is yes, then, does the project:

    a) Serve a significant amount of through traffic?

    b) Significantly improve access to a major activity center?

    c) Serve a significant amount of inter-county traffic?

    d) Significantly improve connections between two or more geographic areas of the county?

    Projects garnering at least two affirmatives to the four questions above are deemed to have countywide significance.

Criteria for identifying projects of countywide significance were developed in parallel with establishing the evaluation metrics for potential scoring and ranking of projects during the CFP. The criteria, as described above, are intended to be applied qualitatively to all projects in the inventory. To qualify as a project of countywide significance, a project must pass the initial screening criteria (pass /fail) and meet at least two additional significance evaluation criteria. Through application of the criteria, it was determined that seven of the 30 projects in the inventory were of countywide significance. The seven projects are as follows:

- **SR 92 from US 101 to I-280:** This project involves widening SR 92 from US 101 to I-280. It is currently in the preliminary planning stages.
- **US 101/Woodside Road (SR 84) Interchange Project:** Located in Redwood City, this project involves significant operational improvements to the interchange, and improved pedestrian and bicycle access for east-to-west movements across US 101. Final engineering design is nearing completion.
- **US 101 Express Lanes from the Santa Clara County line to I-380:** This project includes the conversion of existing high-occupancy vehicle lanes to express lanes, and construction of new express lanes. The project is currently under construction.
- **US 101 Managed Lanes North Project from I-380 to the San Francisco County Line:** This project converts the inside travel lane in each direction to a managed lane and includes outside widenings for auxiliary lanes. The project is in the planning stages.
- **US 101 / SR 92 Interchange Area Improvements Project:** This project provides short-term operational improvements to improve freeway-to-freeway ramp connectors and improve traffic safety and mobility in the vicinity of the interchange (planning phase). The project is in the planning stage.

- **US 101 / SR 92 Direct Connector Project:** This project develops direct connectors from westbound SR 92 to the northbound and southbound US 101 express lanes. The project has completed the initial planning phase.
- **Roadway Facility Improvements between US 101 and the Dumbarton Bridge (SR 84):** This project improves bus and carpool connections from the Dumbarton Bridge to US 101, including grade separations, direct connectors to express lanes, and connectors to Marsh Road, Willow Avenue, and /or University Avenue. The project is in the planning stage.

The detailed determination of countywide significance is further documented in Appendix B. Two additional projects of countywide significance have also been identified, as explained in Section 4.3.

2.3.2 Set Aside for Projects of Countywide Significance

The Strategic Plan and the local measures that inform that do not contain a formal set aside amount. Based upon a review of the anticipated cost of implementing the next phase of all projects, this SRHP recommends establishing a target set side of up to 40 percent for projects of countywide significance.

2.3.3 TA Role on Projects of Countywide Significance

The Strategic Plan allows for the TA to have the flexibility to sponsor projects of countywide significance. On a project by project basis, the TA will assess the capacity and level of involvement required to become a project sponsor for some or all of the seven projects. The role should be established for each project depending on available resources and stage of project development. The TA can also initiate a planning study for the two gap analysis areas that are identified as being of countywide significance depending on resources and countywide need.

2.4 PROJECT SPONSORSHIP AND ELIGIBILITY

An inventory of projects of countywide significance was developed and is detailed in Chapter 4, Project Inventory. The list contents are based upon project that have been identified and then screened in processes described above. The key details on these projects are provided below.

2.4.1 Eligible Projects

Projects must be identified in the CIP in order to apply for future CFP cycles. Projects identified in the Measure A or Measure W TEP specifically are also eligible to apply for funding.

2.4.2 Eligible Sponsors

The Strategic Plan defines which sponsors are eligible based on the explanations of measures. Measure A and Measure W sponsors may be the California Department of Transportation (Caltrans), San Mateo County, any city within San Mateo County, C/CAG and the TA (for

countywide-serving projects). Measure W eligible sponsors also include the Express Lanes Joint Powers Authority.

2.4.3 Potential Needs without Identified Projects or Sponsors

In addition to projects identified by local sponsors or those included in the TEPs, the TA conducted a "gap analysis" to identify areas on the state highway system with performance issues that are not currently being addressed or studied through the project inventory. The analysis utilized data from C\CAG's *State Highway System Congestion and Safety Performance Assessment*, which is discussed in detail in the *Existing and Future Conditions Report* (Appendix A). While the SRHP does not identify specific sponsors that are responsible to address those areas, eligible sponsors may apply for highway program funds to conduct a planning study to further evaluate the needs and potential solutions for the identified gap areas. No specific projects are recommended to address the deficiencies as part of the gap analysis.

2.5 FUNDING GUIDELINES

The previous SRHP provided guidance on funding projects. Eight principles and policy guidelines, adapted and updated from the prior SRHP, are listed below:

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 Measure A must be met. The TEP sets funding caps for the total program, Key Congested Areas (KCA) subcategory, and Supplemental Roadways (SR) subcategory.

3. Funds will be allocated based on amounts collected annually ("Pay as you go"). If there is a compelling need to advance funds from future years, an exceptional case justification and Board action will be required.

4. The following funding match goals should be met -- 50 percent for KCA projects and 30 percent for SR projects. Given the shortfall, leveraging funds will be critical to advancing the total program.

5. Priority should be given to the projects with the greatest benefit. Rather than allocating funding across different project categories or phases of development, the entire inventory of projects should be assessed as a whole.

6. Project evaluation and determination of merit should be tied to the criteria listed in the Strategic Plan.

7. Projects must remain active to keep allocated funds. If there is no substantial activity on the project for five years or more, reallocation of funds to other active projects will be considered.

8. The development of a CIP will be informed by a biannual Call for Projects. The framework for decision making for Measure A and Measure W projects will utilize the funding policies and guidelines outlined above.

2.6 DEVELOPMENT OF TECHNICAL METRICS AND DEVELOPMENT OF SCORING SYSTEM

While Strategic Plan identified the criteria to be evaluated during the CFP process, it did not identify a specific qualitative or quantitative metric to consistently measure the criteria across all projects. Therefore, the SRHP identified at least one technical metric for each criterion listed in the Strategic Plan. Metrics were selected to:

- Closely correlate or reflect the Strategic Plan criteria
- Be readily available based on project description, from typical project studies or data from existing studies such as the State Highway System Congestion and Safety Performance Assessment.

The technical metrics are detailed in Table 2-1. The criteria are organized under thematic categories of Need, Effectiveness, Sustainability, Readiness, and Funding Leverage.

Because the relative weight for each criterion and associated technical metric was defined by the Strategic Plan, it was only necessary to assign the allotted points for each metric over the expected range of values for each technical measure. A variety of research and examples were consulted to aid in this process. This process is used to evaluate projects listed in the SRHP.

Table 2-1. SRHP Technical Metrics

Metric	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
	Need	**22**		
N-1	Severity of current and projected congestion	5	Peak hour delay index Pct Free flow Speed Peak hour V/C	State Highway System Congestion and Safety Performance Assessment; C/CAG Model Run for "No Build" Condition; INRIX Analytics from MTC data purchase
N-2	Need to improve access and connections to jobs, housing, transit hubs and other high activity centers, supporting existing economic activity and spurring new economic development in the vicinity	5	Number of activity centers served	1/2 mile buffer around facility, GIS mapping of activity centers and project limits
N-3	Project recognized in adopted statewide, regional, county or local planning and fund programming documents	5	Project's inclusion in plan(s)	Plan documents
N-4	Identified safety issue (e.g., documented collision history due to site conditions that is higher than average for the facility type)	4	Crash rate per million VMT	Crash data (SWITRS or Congestion and Safety Performance Assessment), AADT (PeMS/Census/INRIX), Length of segment, No. of Lanes
N-5	Regional/Countywide significance, including where applicable, location and relevance on the State Highway Congestion & Safety Performance Assessment for San Mateo County	3	Project extent and location information Select link analysis of project traffic	Refer to Appendix B of SRHP
	Effectiveness	**37**		
E-1	Potential increase in person through-put	6	Average Vehicle Occupancy Support for transit mode shift	TBD
E-2	Ability to relieve congestion/performance improvement (e.g., reduces/ eliminates bottleneck)	5	Project addresses interchange bottleneck Improvement in peak hour delay index Improvement in pct. free flow speed	Project description and location; analysis from environmental phase
E-3	Value: Benefit relative to the amount of funding requested (high impact, low cost - "bang for the buck")	5	Total Project Cost to benefit ratio Cost per GHG/VMT/time reduction	Project inventory and evaluation tool
E-4	Degree to which project reduces GHG emissions and improves air quality	5	Percent reduction in GHG and other emissions	SB1 Emissions Calculator; No Build and Build VMT
E-5	Potential VMT reduction[1]	5	Percent reduction in VMT	Project description and plan documents

Notes: Evaluation criteria and scoring from San Mateo County Transportation Authority Final Strategic Plan 2020-2024,

[1]Caltrans guidance specifies that transportation projects should be analyzed using net VMT impact (see *Transportation Analysis under CEQA* and *Transportation Analysis Framework*, first editions, September 2020).

Table 2-1. SRHP Technical Metrics (continued)

Metric	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
E-6	Ability to address safety issue (e.g., project improves site conditions to reduce potential for collisions)	4	Safety countermeasure effectiveness	Project description; USDOT Crash Modification Factors Clearinghouse
E-7	Potential travel time savings	4	Total corridor travel time savings Travel time index	Comparison of future scenarios generated with an operational or travel demand model (C/CAG model) for project corridor from planning or environmental study
E-8	Demonstrates coordination with adjacent projects/integration of inter-related projects	3	Degree of project coordination	Project description or inventory
	Sustainability	**16**		
S-1	Project accommodates multiple transportation modes (e.g., pedestrian & bicycle access as well as transit infrastructure) where contextually appropriate and to the extent feasible (Complete Streets), including infrastructure for transit (e.g., express lanes, bus only lanes)	5	Number of different modes accommodated	Project scope and description
S-2	Project is primarily an operational improvement (e.g., safety or ITS) rather than infrastructure expansion (e.g., adding general purpose lanes)	4	Split between operational improvement elements and infrastructure expansion	Project Inventory and Project Scope
S-3	Impact project has on low income, transit dependent and or other vulnerable populations	3	Whether beneficial impact occurs to COC or location with CES > 75% or communities with low income and high transit dependency	GIS data layer of C/CAG Equity Focus Areas
S-4	Innovative low environmental impact/green infrastructure, including resiliency elements to address climate change	3	Incorporation of resilience and impact reduction/green infrastructure elements	Project document
S-5	Project accounts for long term repair/maintenance needs (e.g., uses materials with long life cycles, low maintenance costs & has a funding plan for maintenance)	1	Whether the project accounts for long term repair/maintenance needs	Project document

Notes: Evaluation criteria and scoring from San Mateo County Transportation Authority Final Strategic Plan 2020-2024, Appendix E; technical measures.

Table 2-1. SRHP Technical Metrics (continued)

Metric	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
	Readiness	**15**		
R-1	Clear and complete proposal	3	Whether proposal is complete and not missing any information	Project inventory
R-2	Project status and schedule	3	Stage in process from PID to PSE	Project inventory
R-3	Ease and speed of implementation	3	Right of Way status Permitting process status	Project inventory or document
R-4	Demonstrates stakeholder support/community engagement	3	Documented support from stakeholders Public engagement activities Involvement of non-sponsor stakeholder	Documents from project sponsors
R-5	Has a credible cost estimate and funding plan	3	Phase-wise funding information Full funding availability Documentation to show matching funds	Project inventory
	Funding Leverage	**10**		
FL-1	Percent of matching fund contribution	8	Match percentage	Project inventory
FL-2	Private sector contribution, including public/ private partnerships	2	Private sector contribution as percent of total project cost	
	Total	**100**		

Notes: Evaluation criteria and scoring from SMCTA Final Strategic Plan 2020-2024, Appendix E; technical measures.

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3.0 EXISTING AND FUTURE CONDITIONS

In describing existing conditions, the year is estimated to be 2020. However, these 2020 estimates reflect expected conditions without the impacts of the COVID-19 pandemic that has been occurring over the last year. Thus, the data sources used here are often presented with 2019 conditions or earlier, as available. This is important because the suppression of travel during the pandemic has modified travel behavior significantly during 2020 – and the suppression of traffic volumes appears to be returning to pre-pandemic levels as 2021 progresses.

The roadway network documented here is the state highway network. This network has been comprehensively analyzed in several recent documents, including the 2019 Congestion Management Program (C/CAG), the San Mateo Countywide Transportation Plan 2040 (C/CAG) and the State Highway System Congestion and Safety Assessment Update 2019 (C/CAG and TA).

This chapter contains highlights of a larger report prepared as background for this project, entitled *Existing and Future Conditions Report*. It is attached as Appendix A.

3.1 CURRENT DEMOGRAPHICS

According to the Association of Bay Area Governments' (ABAG) *Projections 2040* publication, San Mateo County has an estimated 2020 population of 796,925.[4] This is a growth of over 74,000 residents or 10 percent since 2010. Similarly, there are an estimated 284,260 households in the county. This is an increase of above 26,000 households or above 10 percent since 2010. This growth is attributed to job creation in the region and approvals of new development by jurisdictions in the county.

The same source provides an estimate for total jobs and employed residents. There are just under 400,000 jobs located in San Mateo in the estimate, with just over 415,000 employed residents living in San Mateo County in 2020. This suggests that there is an estimated 0.96 job for each employed resident in 2020. It also demonstrates a general balance between working residents and jobs within the county.

A summary of the growth trends from the past decade is shown in Table 3-1.

[4] Cite Projections 2040

Table 3-1. Recent Growth Trends

Characteristics	2010	2020	Growth 2010-2020	Percent Growth 2010-2020
Population	722,685	796,925	74,240	10.30%
Households	258,065	284,260	26,195	10.20%
Total Jobs	337,785	399,275	61,490	18.20%
Employed Residents	335,340	415,275	79,935	23.80%

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

3.2 CURRENT TRAFFIC CONDITIONS

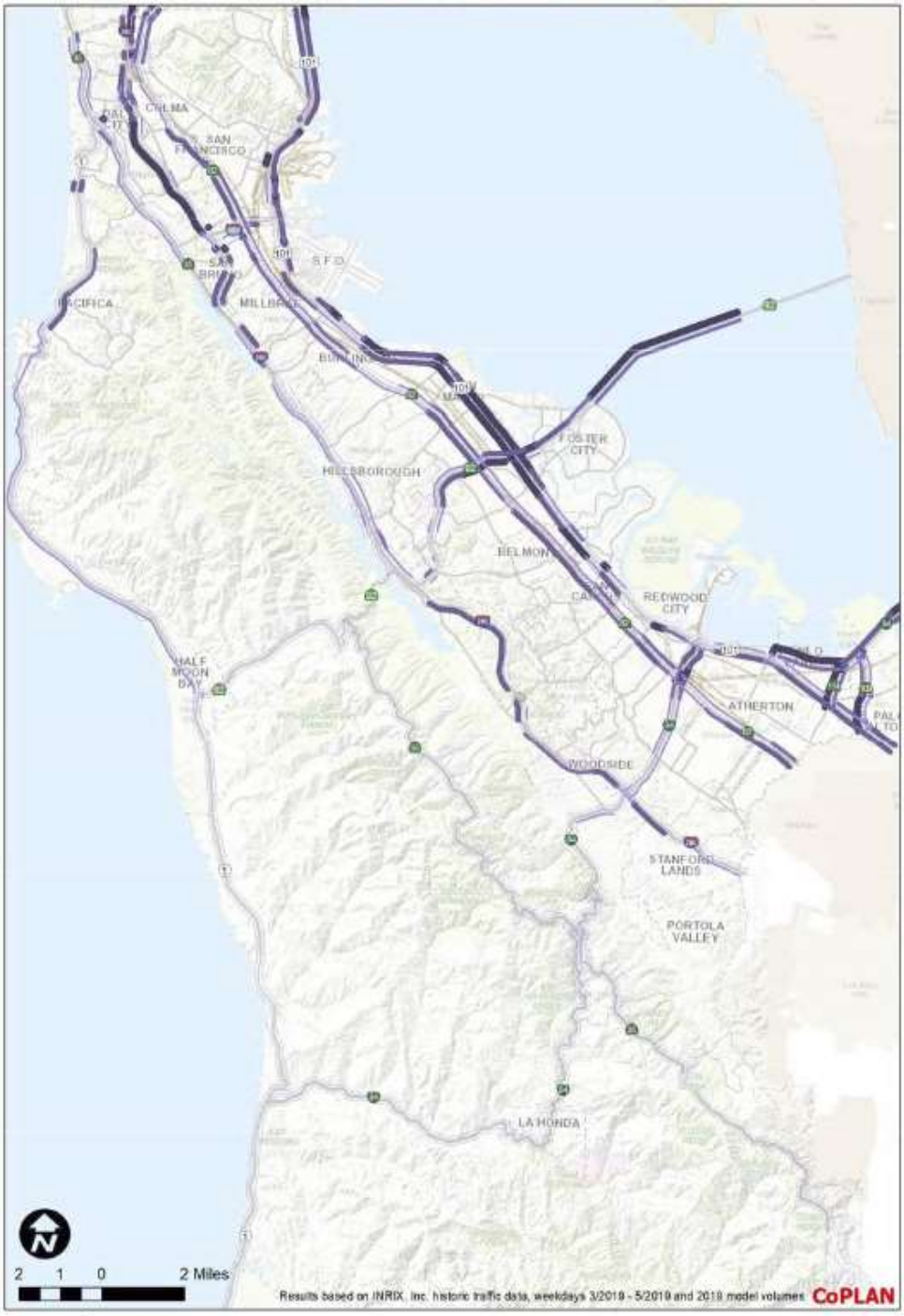
The most recent comprehensive monitoring on traffic congestion in San Mateo County was conducted in 2019. It was published as the State Highway System Congestion and Safety Assessment Update 2019. This report provides detailed maps and tables describing congestion during commute hours. The definition of congestion is based upon total delay, percent of free-flow speed, and travel time reliability.

The performance measure results are summarized for the a.m. and p.m. peak periods. For the purpose of this analysis, the supporting figures and tables were based on the worst hour of the respective periods. For the morning peak, that was found to be between 8 and 9 a.m., and for the evening peak, it was found to be between 5 and 6 p.m.

The represented thresholds in each legend were determined based on the distribution of the results. Each category includes approximately the same percentage of the resulting segments.

A key performance measure discussed here is total delay. Total delay is estimated by comparing the March through May 2019 performance of weekday peak speeds to free-flow speeds. To normalize the impact, the results are estimated Vehicle Hours of Delay per mile (VHD/mile) and multiplied by estimated volumes from the C/CAG – VTA (also known as the Santa Clara Valley Transportation Authority) Travel Demand Model for the 2019 year. The results for Total Delay over the region are illustrated in Figures 3-1 and 3-2 for the a.m. and p.m. peak travel period, respectively.

The greatest morning congestion is shown to be on I-280 southbound from Daly City to San Bruno, US Highway 101 between Burlingame and Belmont in both directions, westbound Highway 92 (San Mateo Bridge), eastbound Highway 92 between El Camino Real and US Highway 101, westbound Highway 84 (Dumbarton Bridge and Bayfront Expressway), westbound Highway 114 (Willow Road), and westbound Highway 109 (University Avenue).



Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 3-1. Total Vehicle Hours of Delay Per Mile - Morning Peak Hour

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 3-2. Total Vehicle Hours of Delay Per Mile - Evening Peak Hour

The greatest evening congestion is shown to be I-280 northbound from Millbrae to Daly City and a segment between the Santa Clara County Line and Highway 84, northbound US Highway 101 between Redwood City and South San Francisco and a segment between the Santa Clara County Line and Highway 109 (University Avenue), southbound US Highway 101 between San Francisco International Airport and San Mateo, eastbound Highway 92 between El Camino Real and Alameda County Line (including the San Mateo Bridge), eastbound Highway 84 (Bayfront Expressway and Dumbarton Bridge), eastbound Highway 114 (Willow Road), eastbound Highway 109 (University Avenue), and a short segment of Highway 82 (El Camino Real) in Menlo Park.

Safety on the highway system is an important design concern. The State Highway System Congestion and Safety Assessment Update 2019 provides information about high crash areas on the system as shown in Figure 3-3. The five top crash segments by mile from 2016 to 2018 are:

- US 101 Northbound from Hillsdale Boulevard On-Ramp to SR 92 Off-Ramp
- US 101 Northbound from Holly Street Eastbound On-Ramp to Holly Street Westbound On-Ramp
- I-280 Southbound from Avalon to Avalon On-Ramp
- US 101 Southbound from SR 114 Off-Ramp to SR 114 On-Ramp
- I-280 Northbound from Sneath Lane to Sneath Lane On-Ramp

3.3 ANTICIPATED GROWTH

With a historical record demonstrating consistent population growth during most decades for the past century, San Mateo County anticipates a continued increase in population. According to ABAG Projections 2017, the population is expected to grow by about 56,000 more residents by 2030 and another 63,000 more residents by 2040, for a total of approximately over 916,000 residents (119,000 or 15 percent more than in 2020). Figure 3-4 contains the summary of anticipated changes in major countywide demographics.

A summary of significant existing and future conditions is provided as Table 3-2.

Table 3-2. Countywide Growth Summary

Characteristics	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Population	796,925	853,260	916,590	119,665	15%
Households	284,260	302,520	317,965	33,705	12%
Total Jobs	399,275	423,005	472,045	72,770	18%
Employed Residents	415,275	433,655	446,040	30,765	7%

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 3-3. Top Crash Segments by Mile

3.4 SUMMARY OF FINDINGS

A graphical summary of many key background demographic and traffic conditions described in this chapter is shown in Figure 3-4.

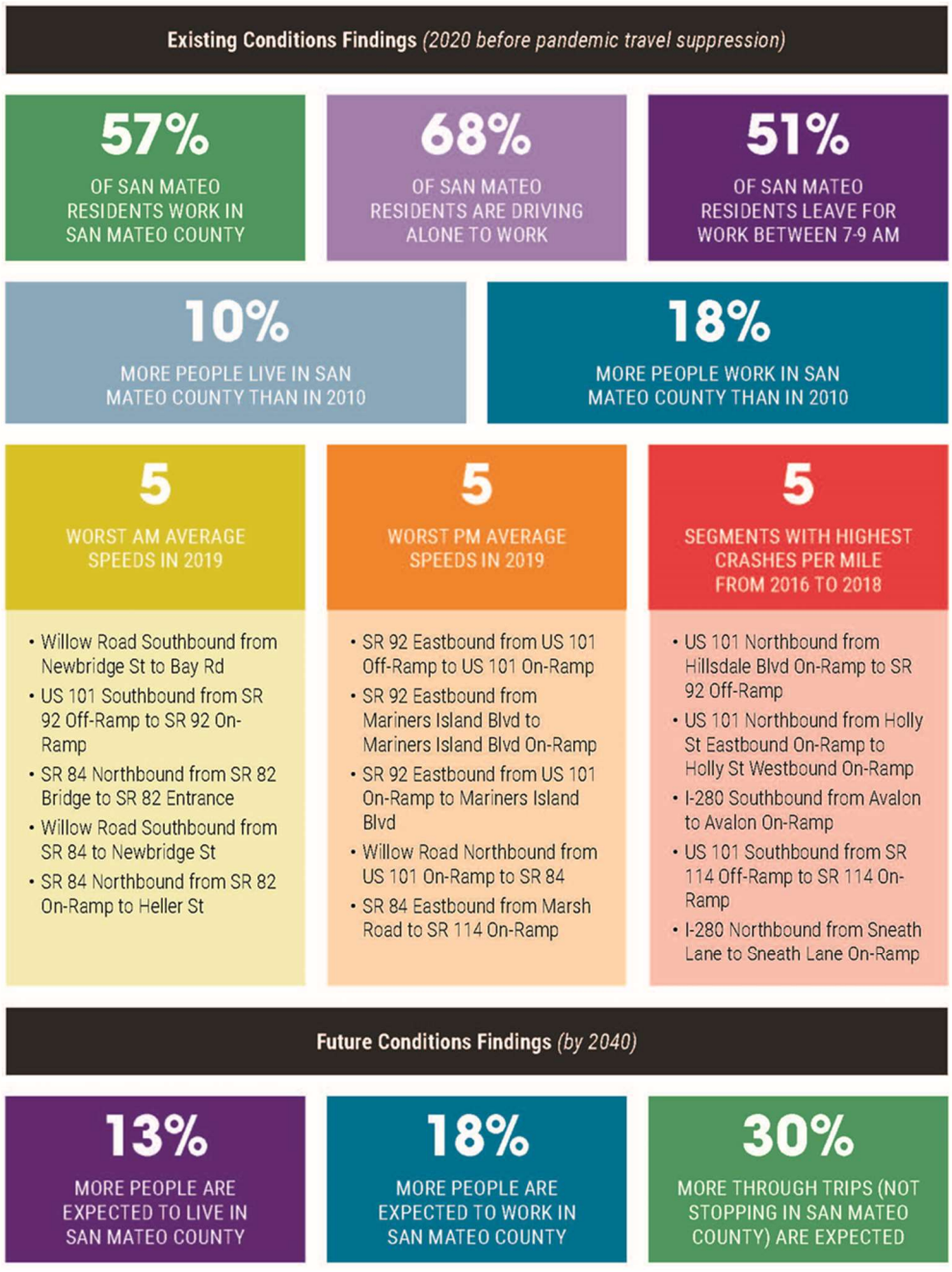


Figure 3-4. Existing and Future Conditions Highlights

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4.0 PROJECT INVENTORY

Development of the SRHP and CIP requires comprehensive knowledge of the full array of projects that are programmed, planned, or otherwise in the pipeline. The status of these projects is in a constant state of evolution, as they transition over many years from unfunded "vision" projects to funded and programmed projects, and ultimately to construction, completion, and operation. The project inventory here involves developing a comprehensive view of the universe of projects that the TA uses to establish a financially unconstrained project list. The project list resides in a master project database.

4.1 INVENTORY FORMAT

The project inventory includes both previously defined projects from the 2011-2021 SRHP, and those projects that have been submitted as part of the regional Plan Bay Area development process. In addition, project sponsors have submitted new projects for the SRHP. In some instances, certain projects were determined to be "no longer supported" or "infeasible" and were therefore deleted.

Each project sponsor completed an inventory form that contains essential information for the project to be considered for funding. Within each project sheet, there are fields that need to be completed that request the project description, location, schedule of the next phase, benefits and needs, current issues, and cost by phase.

4.2 SPONSOR IDENTIFIED PROJECTS

San Mateo County, each city and other project sponsors were asked to identify both previously submitted or pipeline projects as well as potential new projects to include in this inventory. The project inventory request for submittal of new projects was brought by TA staff to the C/CAG Technical Advisory Committee (TAC). The TAC is composed of designated public works engineers and planners from the local jurisdictions of San Mateo County. Project proponents were encouraged to submit new project concepts through a detailed and macro-driven Excel-based inventory tool developed by the TA for the purpose of consolidating project information into a singular database. In response to the recent project inventory update request for details, eight new projects were submitted.

Projects that have already received funding from the TA were assigned a project number with a "TA" prefix. Newly submitted projects are designated with a project number beginning with "UA" to indicate that the project is "unassigned." That is, the project has not yet been submitted by the proponent through the TA's CFP process. To receive a TA number designation, the project must be selected to receive funding as part of the TA's competitive CFP awards.

The list of 30 sponsor-submitted projects is presented in Tables 4-1 and 4-2. Table 4-1 shows previously submitted projects, while Table 4-2 shows new projects. Project locations are identified on the map in Figure 4-1.

Table 4-1. Previously Submitted Project Details

TA Project #	Project Name	Sponsor (Agency)	Next Feasible Phase	Total Project Cost	Cost of Next Feasible Phase	Measure A Category	Countywide Significance?
PLANNING & FEASIBILITY STUDIES							
TA-000625	US 101 Candlestick Point Interchange Environmental Studies	Brisbane	Project Initiation Document	$47,700,000	$500,000	SR	
TA-000710	Geneva Avenue Extension	Brisbane	Preliminary Planning Study	$95,000,000	$500,000		
TA-000733	SR 92 from US 101 to I-280	San Mateo	Preliminary Planning Study	$551,000,000	$1,000,000		Yes
TA-000792	SR 92/South Delaware Interchange Improvement	San Mateo	Preliminary Planning Study	$76,600,000	$1,000,000	KCA	
TA-000796	I-380 Congestion Improvements	San Bruno	Preliminary Planning Study	$146,000,000	$500,000		
TA-100321	Route 1/Manor Drive Overcrossing Project	Pacifica	Preliminary Planning Study	$24,236,885	$1,720,000		
			Subtotal	**$940,536,885**	**$5,220,000**		
ENVIRONMENTAL REVIEW							
TA-000801	US 101/ Peninsula Avenue Interchange Project	San Mateo	Final Design (PS&E)	$120,000,000	$6,557,000	SR	
TA-000803	US 101 / Produce Avenue Interchange Project	South San Francisco	Environmental	$94,150,000	$8,000,000	SR	
TA-100302	US 101 Managed Lanes North Project (I-380 to SF/SM Co Line)	TA & C/CAG	Final Design (PS&E)	$349,600,000	$16,800,000	KCA	Yes
TA-100318	US 101 / SR 92 Interchange Area Improvements Project	TA & C/CAG	Final Design (PS&E)	$30,017,000	$2,817,000	KCA	Yes
TA-100319	US 101 / SR 92 Direct Connector Project	TA & C/CAG	Final Design (PS&E)	$194,400,000	$12,200,000	KCA	Yes
			Subtotal	**$788,167,000**	**$46,374,000**		

KCA – Key Congested Areas; SR – Supplemental Roadways

Table 4-1. Previously Submitted Project Details (continued)

TA Project #	Project Name	Sponsor (Agency)	Development Phase	Total Project Cost	Cost of Next Feasible Phase	Measure A Category	Countywide Significance?
ENGINEERING DESIGN							
TA-000768	US 101/ Woodside Road (SR 84) Interchange Project	Redwood City	Right-of-Way	$279,450,000	$60,000,000	KCA	Yes
TA-000794	SR 1 (Mid Coast) Congestion, Throughput & Safety Improvements	San Mateo County	Preliminary Engineering	$16,219,815	$1,000,000		
			Subtotal	**$295,669,815**	**$61,000,000**		
RIGHT-OF-WAY & CONSTRUCTION							
TA-000791	US 101 Express Lanes Project (SCL/SM Co Line to I-380)	TA & C/CAG	Construction	$581,136,036	5,000,000	SR	Yes
TA-000793	SR 1 Safety and Operational Improvement Project at Gray Whale Cove	San Mateo County	Final Design (PS&E)	$3,179,505	$925,000	SR	
TA-000795	US 101/ Holly Street Interchange Project	San Carlos	Construction	$18,970,000	$18,070,000	SR	
TA-000800	US 101/ University Avenue Interchange Improvements	East Palo Alto	Final Design (PS&E)	$15,660,000	$15,660,000		
TA-000822	SR 1 Safety and Operational Improvement Project: Wavecrest Road to Poplar St	Half Moon Bay	Project Closeout	$5,090,000	$4,040,000		
TA-000823	SR 1 Safety and Operational Improvement Project: Main Street to Kehoe Avenue	Half Moon Bay	Construction	$11,162,290	$9,893,000		
			Subtotal	**$635,197,831**	**$53,588,000**		
LANDSCAPING/CLOSEOUT							
TA-000621	US 101 / Broadway Interchange Project	Burlingame	Landscaping	$2,080,000	$2,080,000	KCA	
TA-000622	US 101 / Willow Road Interchange Landscaping	Menlo Park	Landscaping	$6,360,000	$5,560,000	KCA	
TA-000805	SR 92 / SR 82 (El Camino Real) Interchange Project	San Mateo	Landscaping	$2,000,000	$1,870,000	KCA	
			Subtotal	**$10,440,000**	**$9,510,000**		
			TOTAL COST	**$2,670,011,531**	**$175,692,000**		

KCA – Key Congested Areas; SR – Supplemental Roadways

Notes: (1) Total project cost includes expenditures incurred prior to FY2021 in the amount of $612,133,921. (2) For the purposes of Measure A, any newly submitted projects that are non-KCA designated may be assigned an SR designation. For the purposes of this analysis, only previously assigned Pipeline-SR-designated projects in Measure A were included in the SR cost estimate.

Table 4-2. Newly Submitted Project Details

TA Project #	Project Name	Sponsor (Agency)	Development Phase	Total Project Cost	Cost of Next Feasible Phase	Measure A Category	Countywide Significance?
PLANNING AND FEASIBILITY STUDIES							
UA-000101	I-280/John Daly Boulevard Overcrossing North Side Widening for Bicycle/Pedestrian Accommodation	Daly City	Preliminary Planning Study	$16,650,000	$1,000,000		
UA-000102	I-380 Connection (via new Haskins Way Bridge)	South San Francisco	Preliminary Planning Study	$128,000,000	$1,000,000		
UA-000104	Kelly Avenue & SR 1 Safety Improvement Project	Half Moon Bay	Not initiated	$1,500,000	$1,500,000		
UA-000105	SR 82 (El Camino Real), Safety and Operational Improvements	Redwood City	Project Initiation Document	$30,000,000	$500,000		
UA-000106	SR 84 (Woodside Road), Safety and Operational Improvements	Redwood City	Not initiated	$40,000,000	$250,000		
UA-000107	US 101/Sierra Point Pkwy Interchange replacement and Lagoon Way Extension	Brisbane	Preliminary Planning Study	$24,000,000	$500,000		
UA-000108	Roadway Facility Improvements between US 101 and Dumbarton Bridge	C/CAG	Not initiated	$7,000,000	$500,000		Yes
			Subtotal	**$247,150,000**	**$5,250,000**		
ENVIRONMENTAL REVIEW							
UA-000103	ITS Improvements in Daly City, Brisbane, and Colma	C/CAG	Final Design (PS&E)	$10,885,000	$350,000		
			Subtotal	**$10,885,000**	**$350,000**		
			TOTAL COST	**$258,035,000**	**$5,600,000**		

Note: One additional project was submitted by San Mateo County for the Connect the Coastline Operational and Safety Project after the evaluation process was finalized, but it is included in this CIP and will be eligible for highway program funding.

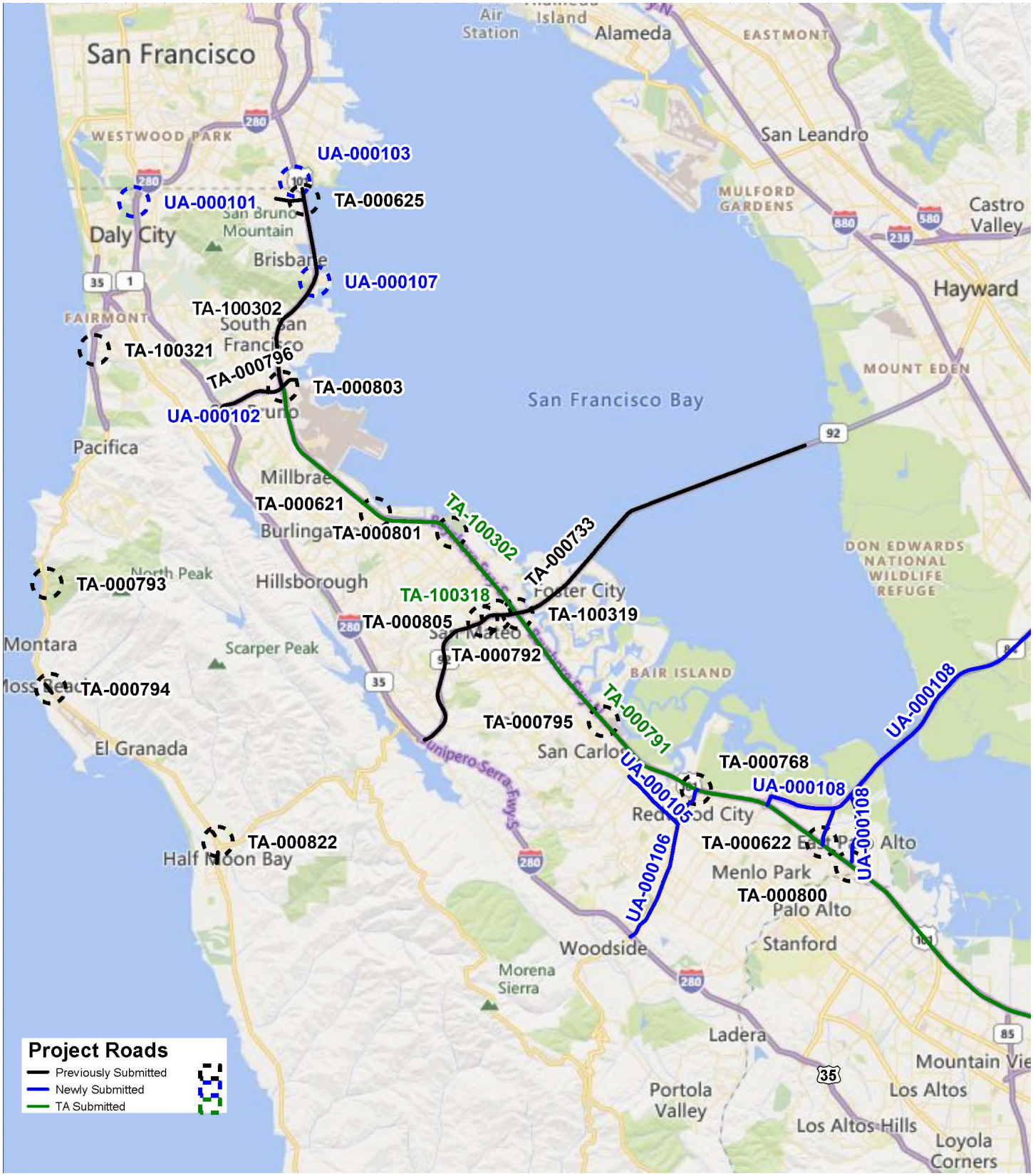

Figure 4-1. Submitted Project Locations

4.3 GAP ANALYSIS

The purpose of the gap analysis was to determine whether the proposed future highway improvements developed through the project inventory exercise could fully address the congestion and safety issues identified in the TA's *Existing and Future Conditions Report*. The Gap Analysis uses a qualitative approach to compare the location of proposed projects with documented data and information regarding the location of congestion and safety areas. The Gap Analysis assists the TA in:

- Identifying areas on the state highway system with performance issues that are not currently being addressed or studied through the project inventory;
- Considering whether these unaddressed high-needs areas warrant the introduction of additional planning studies to the project inventory; and
- Determining whether any of the new planning studies are eligible for funding through Measures A or W.

Based upon the results of the Gap Analysis, the TA determined which roadway segments warrant further consideration for possible corridor studies. Additional review was conducted to determine whether the gap analysis segment was of countywide significance. The TA Board supported the policy that gap analysis segments with three or more performance issues may apply to the highway program CFP for a planning study funds if a sponsor is identified and elects to do. The TA may be eligible to apply for planning funding for gap analysis segments of countywide significance. The gap analysis only identifies the need for a planning study, but does not identify or imply a certain project to improve the performance issues.

The results are shown in Table 4-3 and Figure 4-2. Two corridors – I-280 between Daly City and San Bruno and SR 92 between US 101 and the San Mateo Bridge -- are two corridors which may warrant future projects to address problem roadway performance.

Table 4-3. Potential Gap Analysis Segments

Roadway Name	Segment or Vicinity	Performance Issue	Countywide Significance?
I-280	Washington St (Daly City) to I-380 (San Bruno)	VHD, Speed, Travel Reliability, and Crashes per mile	✓
SR 35	SR 84 to SC County Line	Travel Reliability, Crashes per mile	
SR 82 (El Camino Real)	San Francisco Co. to San Pedro Road, Poplar Avenue to SR 92, SR 84 to Atherton Avenue, and Atherton Ave. to Santa Clara Co.	VHD, Speed, Travel Reliability, and Crashes per mile	
SR 84	SR 35 to SR 1	Travel Reliability, Speed, Crashes per mile	
SR 92	US 101 to Foster City	VHD, Speed, Travel Reliability	✓

Key: SR = State Route
Speed = Travel Speed as a percent of freeflow
VHD = Total Vehicle Hours of Delay per mile

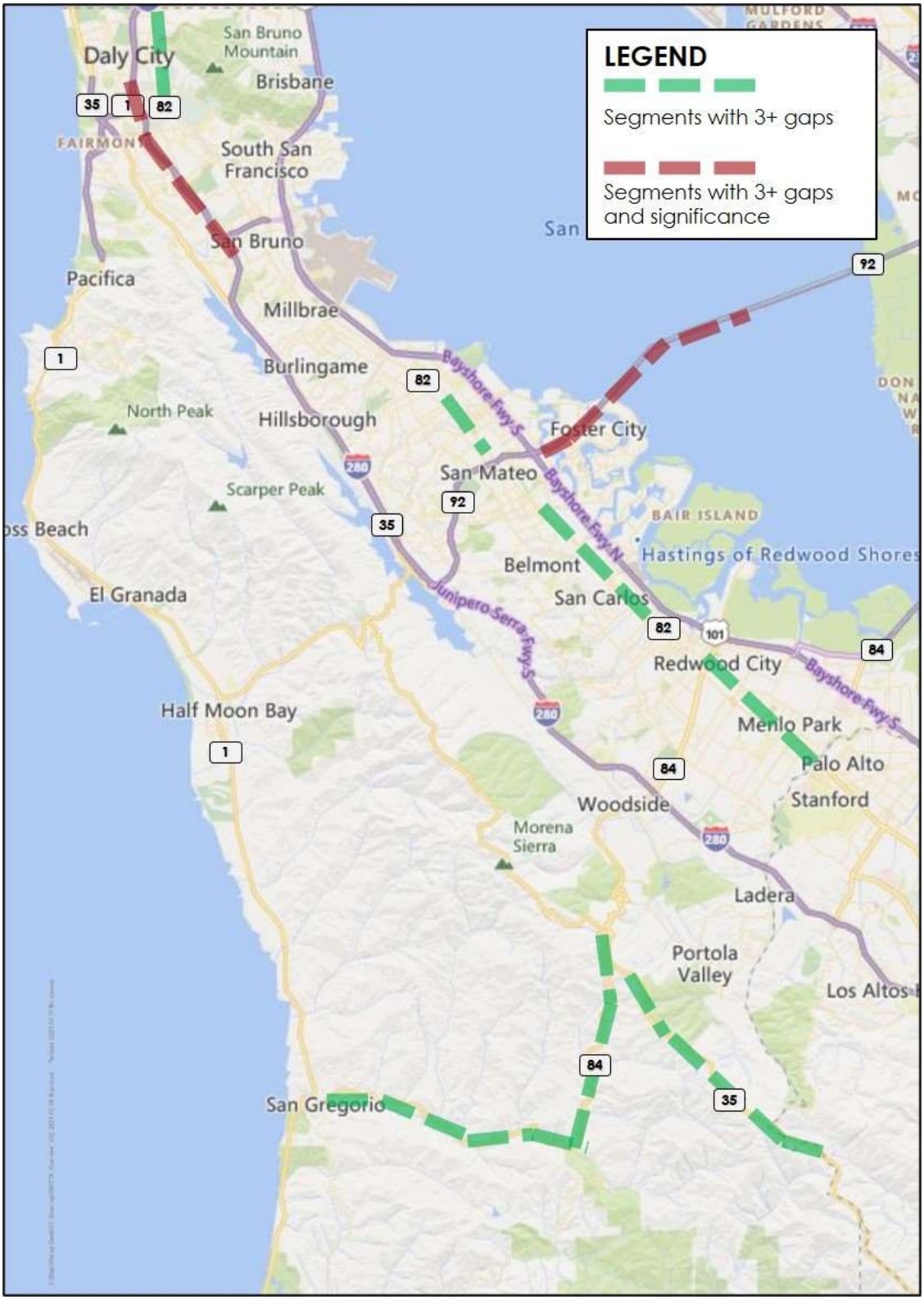

Figure 4-2. Potential Gap Analysis Segments

4.4 SUMMARY OF HIGHWAY PROGRAM NEED

The project inventory process resulted in the submittal of 30 projects. Most of the projects that were submitted are not yet ready to go to construction. In fact, many are still in the early phases of planning and development. Within the 10-year CIP time frame $130 million is projected to be needed to keep projects moving forward through the next indicated phases. In total, $2.9 billion is projected to be needed for all phases for all project costs beyond the life of the CIP, while $2.3 billion of those costs are currently unfunded.

Under established TA practice, projects are funded one phase at a time. Therefore, it is important to understand which phase a project is currently in, and which is the "next feasible phase" that will require funding. For the purposes of this Highway CIP, the lexicon of different stages of project development are distilled down to the five phases: 1) Planning & Feasibility Studies, 2) Environmental Review, 3) Engineering Design, 4) Right-of-Way & Construction, and 5) Landscaping/Closeout.

As shown in Table 4-4, the costs for the next feasible phase for all 30 projects is $181.3 million, which is considerably less that the estimated total project cost.

Table 4-4. Cost of Next Feasible Phase

Phase	1	2	3	4	5	
Project Type	Planning & Feasibility Studies	Environmental Review	Engineering Design	Right-of-Way & Construction	Landscap-ing/ Closeout	Total
Number of Projects	13	1	7	6	3	30
Total Cost (millions USD)	$11.5	$8.0	$55.3	$97.0	$9.5	$181.3

A more extensive description of each project is provided in customized Project Fact Sheets, provided in the accompanying CIP.

The Measure A TEP further identifies two distinct funding categories for capital roadway projects: Key Congested Areas (KCA), and Supplemental Roadways (SR).[5] These categories are found in Measure A only; they were not carried forward into Measure W.

> **Key Congested Areas**: (63 percent of highway program funds) This funding component includes 11 different projects identified within five highway corridors. KCAs were designated by city, county, and TA engineers and confirmed through public input.
>
> **Supplemental Roadways:** (37 percent of highway program funds) A partial list of candidate projects is provided in the TEP. However, additional projects may be submitted for consideration such as the newly submitted projects without a designation in the TEP from the project inventory. SRs include all types of roadways (local, collector, arterial, and state routes) anywhere in the county.

Examining the TA- and UA-designated projects, the project inventory needs indicate that 57 percent of project costs are identified in Measure A as KCA and 43 percent are SR. The Measure A cost percentage assigned to KCA and SR funding in the Measure A TEP is 63/37. The ratio must be met at the sunset of the measure but can fluctuate during each CFP project allocation cycle, if needed.

The breakdown is shown in Table 4-5. Table 4-1, presented earlier in this chapter, shows which projects fall into these Measure A categories.

Table 4-5. Breakdown of KCA/SR Projected Costs and Revenues (in millions USD)

Project Type	Estimated Total Project Costs	Percentage of Total Project Cost	Measure A Percentage Designation
Key Congested Area (KCA) projects:	$608.7	57%	63%
Supplemental Roadway (SR) projects:	$461.9	43%	37%
Total Project Costs:	**$1,070.6**	**100%**	**100%**

[5] San Mateo County Transportation Authority, 2004 Transportation Expenditure Plan, p. 11.

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5.0 PROJECT EVALUATION

The TA administers Measure A and W sales tax revenues to transportation improvement programs and projects throughout San Mateo County. While some programs, such as the Local Streets and Transportation Program, are directly funded through a percentage allocation, other programs, including the Highway, Pedestrian and Bicycle, Grade Separation, Shuttle, Alternative Congestion Relief/Transportation Demand Management, and Regional Transit Connections programs use a competitive CFP process.

The CFP process provides an opportunity for project proponents to apply for funding that will help move eligible highway projects into the next phase of project development. For example, a highway project that has completed the preliminary planning process and has a Caltrans-approved Project Study Report (PSR) is eligible to apply for funding to move into the Project Approval and Environmental Document (PA & ED) phase.

The SRHP helps guide the Measure A and W highway program CFP. Only projects that are included in the CIP inventory are eligible to compete for funding in upcoming CFP funding cycles. The next Highway CFP will occur in Summer 2021, following TA adoption of the SRHP in June 2021.

5.1 EVALUATION METHOD AND RELATION TO CALL FOR PROJECTS

The project evaluation process accommodates projects that are in broadly varying stages of development, from project concepts identified by the gap analysis, to planning studies, environmental clearance, and the ROW acquisition/engineering/construction stage. There are also projects that can be characterized as "finishing up," such as landscaping for a previously completed highway project. The Strategic Plan identifies a need to balance delivery of projects already in the funding pipeline with new projects and lists what factors are to be evaluated.

To help the TA better understand where the projects with the highest needs are located, the SRHP conducted an evaluation of all projects using a consistent set of data provided from the C/CAG State Highway System Congestion and Safety Assessment as well as other available sources. This provided an opportunity to have a more direct "apples to apples" comparison should future funding decisions need to be evaluated during CFP cycles. This evaluation could be used in tie-breaker situations or to help the TA Board understand where to narrow funding should external funding conditions change.

5.1.1 Project Evaluation Process

Project evaluation for the SRHP/CIP update consists of using the evaluation criteria and metrics to compare the relative need and merit of the projects in the inventory. At this stage, projects do not receive published scores but are ranked in high, medium, and low categories based on only the Need evaluation criteria. As such, the project evaluation process lets sponsors see how their project Need compares to all projects that may potentially apply for TA highway

program funding. This process also provides the opportunity for TA staff to work with project sponsors to potentially improve their scores during future CFPs.

As previously mentioned, projects vary widely in their status and phases. Projects in the initial phases are more readily assessed according to need where projects that have progressed to environmental clearance or design can be evaluated by effectiveness. For this reason, future CFPs will evaluate the remaining TA Strategic Plan evaluation criteria once more details are provided project sponsors. The metrics will then be evaluated with an Excel-based tool that will compare all projects evaluation criteria against one another.

5.2 EVALUATION METRICS AND PERFORMANCE ASSESSMENT

To better understand regional congestion and safety "hot spots" in San Mateo County, the plan development included a performance assessment using the following metrics:

- Congestion
  - Total Delay
  - Percent of free-flow speed
  - Travel time and reliability
- Safety
  - Collision fatalities and injuries
  - Collision rates

This assessment is documented in the *Existing and Future Conditions Report* (Appendix A) and highlighted in Chapter 3, which presents an overview of the major street and highway system in San Mateo County.

5.2.1 Evaluation by Phase

Project evaluation for the CIP update of this SRHP consists of using the evaluation criteria and metrics to compare the relative need and merit of the projects in the inventory. The project evaluation process is intended to inform project sponsors about how to improve their projects, if necessary, in preparation for the CFP.

The basic project evaluation process consists of calculating a score for each project, consistent with the project evaluation policies found in the adopted Strategic Plan. Each project starts with a score of zero and accumulates points in the categories of Need, Effectiveness, Sustainability, Project Readiness, and Funding Leverage, up to a maximum of 100. The scoring is automated through a spreadsheet tool that has been developed for the CIP.

As previously mentioned, projects vary widely in their status and phases of development. Projects in the initial phases are more readily assessed according to need, whereas projects that have progressed to environmental clearance or design can be evaluated by effectiveness. Table 5-1 displays how the criteria vary by phase.

Table 5-1. Applicability of Evaluation Criteria by Project Phase

Project Phase		Example from Inventory	Criteria Groupings				
			Need	Effectiveness	Sustainability	Readiness	Funding Leverage
1	Planning & Feasibility Studies	Kelly Avenue & Highway 1 Safety Improvement Project	●				
		SR 92 from U.S. 101 to I-280	●				
		Geneva Avenue Extension	●				
		US 101/Candlestick Point Interch ange Environmental Studies	●				
		US 101/Sierra Point Pkwy Interchange replacement	●				
2	Environmental Review	US 101/Peninsula Ave. Interchange Project	●				
3	Engineering Design	SR 1 (Mid Coast) Congestion, Throughput & Safety Improvements	●	●	●	●	●
		US 101/ Woodside Road (SR 84) Interchange Project	●	●	●	●	●
4	Right of Way & Construction	SR 1 - Gray Whale Cove	●	●	●	●	●
		US 101/Holly Street Interchange Project	●	●	●	●	●
		US 101/University Avenue Interchange Project	●	●	●	●	●
		US 101 Express Lanes Project (SC/SM Co. Line to I-380)	●	●	●	●	●
5	Landscape/ Closeout	US 101/Holly Street Interchange Project	Not Applicable (Projects not evaluated)				
		US 101/Willow Road Interchange Project - Landscaping	Not Applicable (Projects not evaluated)				
		US 101/Broadway Interchange Project					

● Applicable to CFP Evaluation

Key: Pkwy = Parkway; SC/SM Co. = Santa Clara/San Mateo County; SR = State Route; U.S. = United States

5.3 PROJECT NEED EVALUATION FINDINGS

A project performance evaluation method has been developed to apply to the inventory of projects listed in Chapter 4. This evaluation is based upon information about each project made available to date. Each project rating shown here is defined qualitatively, using scoring methods applied to the current list. The evaluation is not to be applied to projects nearing closeout including final landscaping phases.

The evaluation findings presented here are based on criteria in the Need category, as there is not yet sufficient data to rate the other categories. There are five criteria in the Need category that apply to all projects in any phase between planning and construction:

- Delay Index or V/C Ratio or Percent Free Flow Speed
- Number of activity centers served
- Project's inclusion in the plan
- Crash rate per million VMT
- Project extent and location relevant to Countywide Significance

Scoring levels have been assigned according to a numerical system using the Need category criteria, and the scoring method is detailed in Appendix B. The resulting scoring levels set are defined as follows:

- **High rating.** Projects that achieve a score of seven (7) or above.
- **Medium rating.** Projects that achieve a score of five (5) or six (6).
- **Low rating.** Projects that achieve a score of four (4) or below.

Table 5-2 lists these ratings for 27 projects included in the Inventory eligible for evaluation. As shown, nine have been assigned a high rating, eleven have been assigned a medium rating and seven have been assigned a low rating.

Table 5-2. Project Need Evaluation Ratings

TA Project #	Project Name	Sponsor (Agency)	Development Phase	Measure A Category	Countywide Significance?	Evaluation Rating
PLANNING & FEASIBILITY STUDIES						
TA-000625	US 101 Candlestick Point Interchange Environmental Studies	Brisbane	Project Initiation Document	SR		Medium
TA-000710	Geneva Avenue Extension	Brisbane	Preliminary Planning Study			Low
TA-000733	SR 92 from US 101 to I-280	San Mateo	Preliminary Planning Study		Yes	High
TA-000792	SR 92/South Delaware Interchange Improvement	San Mateo	Preliminary Planning Study	KCA		High
TA-000796	I-380 Congestion Improvements	San Bruno	Preliminary Planning Study			Medium
TA-100321	Route 1/Manor Drive Overcrossing Project	Pacifica	Preliminary Planning Study			Low
UA-000101	I-280/John Daly Boulevard Overcrossing North Side Widening for Bicycle/Pedestrian Accommodation	Daly City	Preliminary Planning Study			Low
UA-000102	I-380 Connection (via new Haskins Way Bridge)	South San Francisco	Preliminary Planning Study			Low
UA-000104	Kelly Avenue & SR 1 Safety Improvement Project	Half Moon Bay	Not initiated			Medium
UA-000105	SR 82 (El Camino Real), Safety and Operational Improvements	Redwood City	Project Initiation Document			High
UA-000106	SR 84 (Woodside Road), Safety and Operational Improvements	Redwood City	Not initiated			High
UA-000107	US 101/Sierra Point Pkwy Interchange replacement and Lagoon Way Extension	Brisbane	Preliminary Planning Study			Medium
UA-000108	Roadway Facility Improvements between US 101 and Dumbarton Bridge	C/CAG	Not initiated		Yes	High
ENVIRONMENTAL REVIEW						
TA-000801	US 101/ Peninsula Avenue Interchange Project	San Mateo	Final Design (PS&E)	SR		Medium

KCA – Key Congested Areas; SR – Supplemental Roadways

Table 5-2. Project Need Evaluation Ratings (continued)

TA Project #	Project Name	Sponsor (Agency)	Development Phase	Measure A Category	Countywide Significance?	Evaluation Rating
ENVIRONMENTAL REVIEW						
TA-000803	US 101 / Produce Avenue Interchange Project	South San Francisco	Environmental	SR		Medium
TA-100302	US 101 Managed Lanes North Project (I-380 to SF/SM Co Line)	TA & C/CAG	Final Design (PS&E)	KCA	Yes	High
TA-100318	US 101 / SR 92 Interchange Area Improvements Project	TA & C/CAG	Final Design (PS&E)	KCA	Yes	Medium
TA-100319	US 101 / SR 92 Direct Connector Project	TA & C/CAG	Final Design (PS&E)	KCA	Yes	Medium
UA-000103	ITS Improvements in Daly City, Brisbane, and Colma	C/CAG	Final Design (PS&E)			Low
ENGINEERING DESIGN						
TA-000768	US 101/ Woodside Road (SR 84) Interchange Project	Redwood City	Right-of-Way	KCA	Yes	High
TA-000794	SR 1 (Mid Coast) Congestion, Throughput & Safety Improvements	San Mateo County	Preliminary Engineering			Medium
RIGHT-OF-WAY & CONSTRUCTION						
TA-000791	US 101 Express Lanes Project (SCL/SM Co Line to I-380)	TA & C/CAG	Construction	SR	Yes	High
TA-000793	SR 1 Safety and Operational Improvement Project at Gray Whale Cove	San Mateo County	Final Design (PS&E)	SR		Low
TA-000795	US 101/ Holly Street Interchange Project	San Carlos	Construction	SR		Medium
TA-000800	US 101/ University Avenue Interchange Improvements	East Palo Alto	Final Design (PS&E)			High
TA-000822	SR 1 Safety and Operational Improvement Project: Wavecrest Road to Poplar St	Half Moon Bay	Project Closeout			Low
TA-000823	SR 1 Safety and Operational Improvement Project: Main Street to Kehoe Avenue	Half Moon Bay	Construction			Medium

KCA – Key Congested Areas; SR – Supplemental Roadways

6.0 CAPITAL IMPROVEMENT PROGRAM

The primary purpose of the Highway CIP is to: a) broadly assess the full cost of highway improvements for San Mateo County as envisioned by all project sponsors eligible to receive Measure A and W sales tax revenues; b) compare those costs to expected revenues over the next 10 years; and c) establish a baseline of project costs and revenues to inform the development of the SRHP.

The following goals were set for the development of the Highway CIP:

1. Assess projected costs vs. revenue over a ten-year period from fiscal years (FY) 2021 through FY2030 and the cumulative implications;
2. Provide a strong foundation for making future investment decisions;
3. Identify key issues and policy considerations for further study; and
4. Develop an updated SRHP to set project priorities and establish funding levels through 2030.

6.1 FUNDING OUTLOOK

The Measure A TEP allocates 27.5 percent of Measure A funds to the highway program. The TEP further divides the Highway program into two categories: 1) Key Congested Areas (KCA) – 17.3 percent; and 2) Supplemental Roadways (SR) – 10.2 percent.

According to the mid-range financial forecast provided by the TA Finance Division, total annual revenues for both measures begins at $80 million in FY2021 and increases to $113 by FY2030. In total this equates to a potential projected amount of $495 million in revenue throughout the 10-year CIP that may be available for highway program projects.

In addition to local sales tax funds, the TA and its project sponsors are generally eligible to receive transportation funding through other sources. These include federal, state, regional, local, and private fund sources. The TA has a general policy to only fund up to 50 percent of a project's total cost. For funding projections, it is then assumed that TA funds can be leveraged one-to-one with these additional external fund sources. This essentially doubles the value of the TA's investment in local and countywide significant projects.

Table 6-1 and Figure 6-1 shows the fund sources and amounts available over the 10-year timeframe of the highway program's CIP.

Table 6-1. Funding Sources and Amounts Available (FY2021-FY2030 in millions USD)

Funding Source	Description	Amount
Measure A	KCA Funding	$171.5
Measure A	SR Funding	$101.1
Measure W	Countywide Highway Congestion	$223.0
	Total Measures A and W	**$495.6**
Other Potential Fund Sources	Federal, State, Regional, Local, Private	$495.6
	Grand Total	**$991.2**

Key:
FY = Fiscal Year
KCA = Key Congested Area
SR = Supplemental Roadway
USD = United States Dollars

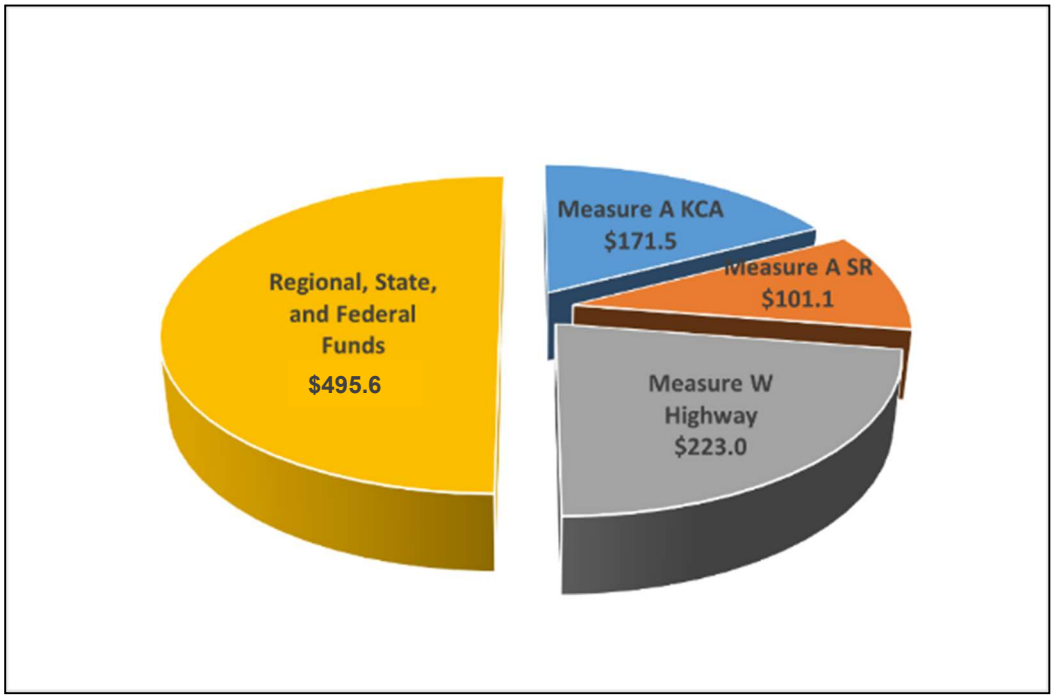

Figure 6-1. Anticipated Funding Revenue by Source

6.2 UNCONSTRAINED CIP

Eight of the nine counties in the San Francisco Bay Area have voter-approved Expenditure Plans that specify how sales-tax dollars are to be allocated. Several of these plans specify in detail the highway corridors or projects to be funded; projects that are not listed in the plans are ineligible to receive funding allocations from local sales tax revenues. Not every sales tax authority needs to develop a separate CIP, but all need to ascertain the timing of fund expenditures on specific projects.

The TA's approach in the development of the CIP is to work with eligible highway project sponsors, including individual cities and City/County Association of Governments of San Mateo County (C/CAG), to collect project information for potential highway projects that could be eligible for funding over the next ten years. Given that project scope, cost, and schedule information changes over time, the TA regularly updates its CIP every three to five years. The CIP does not financially constrain the number of projects submitted for consideration and does not prioritize projects.

6.3 FUNDING CHALLENGE

6.3.1 Project Costs and Available Funding through FY2030

Over the 10-year CIP time frame, Measure A and Measure W are estimated to bring in a revenue of $495 million for the highway program collectively. This projection is for planning purposes to understand the order of magnitude for which the sales tax measures will be able to help cover costs of all project needs submitted by local sponsors. With an overall need of approximately $1.2 billion for highway projects in the next 10 years, the total shortfall if no other funding is assumed would equal approximately $751 million. Tables 6-2 and 6-3 below show Measure A and W revenues and project costs for the 10-year period of FY2021 through FY2030.

Table 6-2. Fund Projections (FY2021 - FY2030 in millions USD)

Funding Source	Amount
Measure A KCA funding	$171.5
Measure A SR funding	101.1
Measure W	223.0
Total Funding Available	$495.6

Table 6-3. Funding Shortfall (FY2021 - FY2030 in millions USD)

Cost/Revenue	Amount
Total Project Costs through FY2030	$1,247.3
Total Measure Revenues	495.6
Total Shortfall	$751.7

The above scenario assumes no matching funds, when in fact, the Strategic Plan requires a minimum 10-percent match for both Measure A and W highway projects when applying for highway program CFP funding. Furthermore, if the TA adheres to its general policy to fund only up to 50 percent of a project's total cost, then a one-to-one leveraging for Measure A and W funds would be achieved.[6] Assuming the one-to-one match is achieved, an additional $495.6 million in other revenues would reduce the shortfall to $256.1 million and could be assumed

[6] SMCTA Strategic Plan, 2020-2024, Table 7-1, p. 52

over the life of the Highway CIP if the additional external local, regional, or federal funding sources could be secured.

6.3.2 Project Costs and Available Local Funding through FY2049

Table 6-4 and 6-5 below show total expected revenues for Measure A (through FY2033) and Measure W (through FY2049) along with all-in project costs through FY2030 and beyond.

Table 6-4. Total Fund Projections (FY2021 - FY2049 in millions USD)

Funding Source	Amount
Measure A KCA funding	$232.3
Measure A SR funding	137.0
Measure W	866.5
Total Measure Revenues	**$1,235.8**

Table 6-5. Funding Shortfall (FY2021 – FY2049 in millions USD)

Cost/Revenue	Amount
Total Project Costs through FY2049	$2,315.9
Total Measure Revenues	1,235.8
Total Shortfall	**$1,080.1**

Review of the above suggests that the TA's preliminary highway improvement project inventory list exceeds available fund revenues by $1.08 billion. As shown in Figure 6-2, without matching funds, the shortfall persists through FY2030 and beyond.

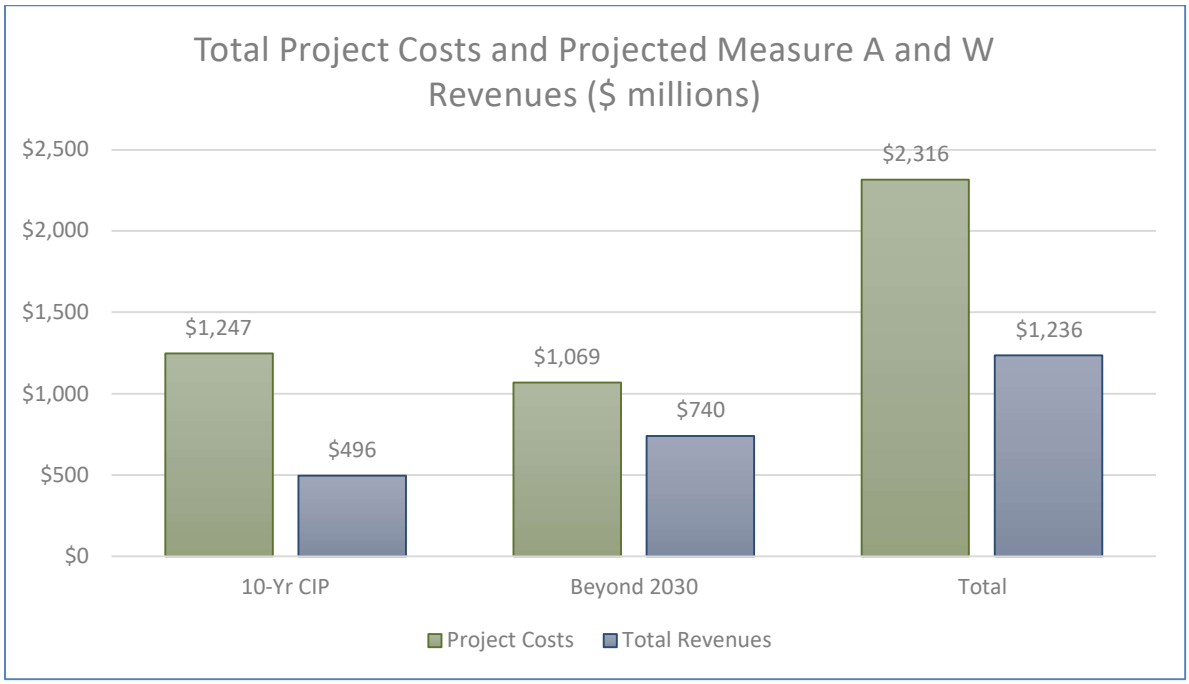

Figure 6-2. Total Project Costs and Revenues (in millions USD)

6.4 OTHER FUNDING SOURCES

Leveraging Measure A and W funding with other regional, state, and federal funds and private sector contributions and partnerships is essential to maximize the delivery of transportation programs and projects. At this writing of the SRHP, the level of regional and federal funding available for the TA highway program remains uncertain. We can, however, confidently predict that current state and federal funding to the TA will continue to grow over the life of this SRHP. It is the potential for a regional mega-measure that supports both highway and transit projects, as well as a $2 trillion-plus federal infrastructure package, which poses major, and positive, unknowns that cannot be quantified at this time. However, Measures A and W allow the TA to help sponsors be more competitive in other potential funding opportunities by being further along in their construction readiness.

The administration of other funding sources often carries certain performance requirements and categories of projects. For this reason, funds from these sources may not be available to help pay for the undertaking of projects in this SRHP. Regardless, they are listed here for general reference in case some projects successfully qualify or compete for these funds.

6.4.1 Regional Funding

The Metropolitan Transportation Commission's (MTC) forthcoming long-range plan, *Plan Bay Area 2050* (PBA 2050) extends the planning horizon for funding from 2040 out to 2050. It anticipates total transportation revenues from all sources from 2021 to 2050. PBA 2050's estimate of $580 billion for transportation, is substantially greater than *Plan Bay Area 2040*, which anticipated $303 billion for a 24-year period of 2017 to 2040, in year-of-expenditure dollars. The increase is due not only to the extended time horizon (2021 to 2050), but also the successful passage of Senate Bill (SB) 1.

Of the $580 billion anticipated in Plan Bay Area 2050, $113 billion would be new revenues, including tolls on highways, parking fees, and other regional funding measures. $150 billion of the total would go towards highway, bridge, and local street projects, substantially greater than the $93 billion for such investments in Plan Bay Area 2040.

6.4.1.1 One Bay Area Grant Program

The major source of regional funding made available to the TA is through the One Bay Area Grant (OBAG) program, which is a combination of two federal highway programs, the Surface Transportation Block Grant Program and the Congestion Mitigation and Air Quality Program. MTC is currently in the latter half of the OBAG 2 cycle, which 2 totals $916 million from FY2017-2018 through FY2021-22, with $386 million over that five-year period allocated by formula to counties.

The TA currently receives $32.5 million in OBAG 2 Funding, 8.4 percent of the OBAG formula share. If the next round of OBAG county funding grew was $500 million for the five-year period, then San Mateo would receive approximately $42 million. In short, a 30 percent

increase in OBAG funding results in an annual increase for San Mateo County of just $2 million. Because the federal sources that fund OBAG are predicted to grow steadily over the decade one can assume that the TA's amount of OBAG funds will average around $10 million per year.

OBAG funding, however, is primarily aimed at local street maintenance and improvements, bicycle and pedestrian facilities, and Transportation for Liveable Communities. It is therefore doubtful that these funds could be applied to projects listed in this SRHP, except for some of the arterial focused projects like El Camino Real, Highway 1 or Woodside Road.

6.4.1.2 Regional Measure 3

Regional Measure 3 (RM 3) is a voter-approved measure from 2018 that would raise tolls on Bay Area toll bridges operated by the Bay Area Toll Authority. The measure included an expenditure plan, which directs funding to specific projects and program areas. RM 3 provides $50 million for the Highway 101/92 Interchange and $300 million to continue development of the Bay Area Express Lanes network. It is reasonable to estimate that the TA will be able to secure $50 million of that funding to continue the Highway 101 managed lanes project from I-380 to San Francisco. RM 3 is currently the subject of litigation and pending before the California Supreme Court, with all revenues held in escrow.

6.4.2 State Funding

6.4.2.1 State Transportation Improvement Program

The 2020 State Transportation Improvement Program (STIP) provides an estimated $2.6 billion in program capacity over a five-year period, with $406 million of that available for new programming. Seventy-five percent of the STIP goes towards the interregional program, which is further subdivided by formula into County Shares which are available solely for projects nominated by regions in their Regional Transportation Improvement Program (RTIP).

The total target for San Mateo County in the 2020 RTIP period (FY2020-21 through FY2024-25) is $39.7 million, out of a MTC total of $307.7 million. However, the majority of this funding is for previously programmed projects, and it only includes $116 million in new programming capacity, for which San Mateo County is allocated $9.2 million for the 2020 RTIP period. For the purposes of this SRHP, it is assumed that double that amount will be available over the 10-year timeframe of the plan.

6.4.2.2 SB 1 Local Streets and Roads Program

Under SB 1 San Mateo County receives on average approximately $10 million per year for improvements to local streets and roads. This is in addition to the smaller amounts of funding that the 20 cities within San Mateo County will receive. These funds are prioritized for state of good repair, but if a jurisdiction's Pavement Condition Index meets or exceeds 80 then those funds may be used for a broader range of infrastructure improvements. San Mateo County has a three-year moving average of 74, so it is possible in future years that SB 1 funds could be

leveraged for larger TA infrastructure projects with funding gaps. Again, these funds are not anticipated to be used for the SRHP projects.

6.4.2.3 SB 1 Local Partnership Program

The Local Partnership Program (LPP) is divided into two categories, Formulaic and Competitive. Each year the TA will receive approximately $1 million from the Formulaic LPP. The TA has also been successful in securing more significant grant funding from the Competitive LPP, winning a $20 million grant in 2018. Over the decade the Competitive LPP will make at least $800 million available, thus it is it is reasonable to assume that in addition to the ongoing Formulaic funding that the TA will be successful in securing $25 million in future Competitive LPP funding.

6.4.2.4 SB 1 Solutions for Congested Corridors Program

The TA was successful in securing $200 million from the Solutions for Congested Corridors Program (SCCP) in 2018. This program is funded at $250 million annually, meaning there will be $2.5 billion in future SCCP funding available over the decade. Thus it is reasonable that the TA will be able to secure an additional $100 million in future SCCP funding.

6.4.2.5 SB 1 Trade Corridor Enhancement Program

The Trade Corridor Enhancement Program (TCEP) program is funded with a combination of SB 1 and federal freight formula funds and makes available approximately $300 million per year, programmed every two years. For a three-year programming period the Bay Area receives approximately $225 million in TCEP funding. Highway 101 is identified by the Federal Highway Administration as a route on the Highway Primary Freight Network, making it eligible for all TCEP funding and demonstrating the importance and significance of goods movement on the corridor. It is reasonable to assume that the TA will be able to secure $100 million in future TCEP funding.

6.4.3 Federal Funding

Federal-aid highway funding will, at a minimum, remain stable into the future, and there is the real potential for significant increases in formula and grant funding through a broad infrastructure package and a surface transportation reauthorization bill. Federal transportation revenues do not match spending levels, as Highway Trust Fund (HTF) revenues are approximately $16 billion less each year than federal highway and transit funding levels. The significance of this is that further reductions in HTF revenue due to increased CAFE (Corporate Average Fuel Economy) standards and the adoption of electric vehicles does not equate to a corresponding reduction in federal highway spending.

Growth in federal transportation spending would impact San Mateo County in a variety of ways:

- Formula funding would be apportioned to Caltrans and MTC, resulting in increased RTIP and OBAG funding. RTIP funding is more appropriate for larger highway capacity projects, whereas OBAG funding is more flexible for smaller mobility projects.
- New grant programs to address metropolitan mobility, reduce carbon emissions, and improve resiliency from climate change would create opportunities for the TA to pursue significant grant funding for major projects.

Current federal highway grant funding is primarily limited to the BUILD and INFRA programs. These programs are oversubscribed and highly competitive, but provide a combined total on average $1.75 billion per year in available grant funding. Considering that over the next decade that results in nearly $20 billion in grant funding it is reasonable to assume that the TA could be successful in securing $25 million from one or both of these programs.

A summary of the major funding categories and potential eligibility is reflected in Table 6-6. This table is provided for illustrative purposes, and it should again be noted that these funding amounts are not assured. There appears to be about $318.4 million potentially available from these sources.

Table 6-6. Potential Highway Program Funding from Regional, State, and Federal Sources (FY2021 through FY2030 in millions USD)

Fund Source	Potential Revenue (2021-2030)	Eligible for SMCTA Highway Program?	Potential Highway Program Funding
OBAG	$100.0	No	$0
RM3	$50.0	Yes	$50.0
STIP	$18.4	Yes	$18.4
SB-1: LS & R	n/a	n/a	n/a
SB-1: LPP	$25.0	Yes	$25.0
SB-1: SCCP	$100.0	Yes	$100.0
SB-1: TCEP	$100.0	Yes	$100.0
Federal	$25.0	Yes	$25.0
Total	**$418.4**		**$318.4**

6.5 CONCLUSION

Developing an estimate for expenditures and revenues requires the collection of project cost and cash-flow information for each project in the Highway CIP. Through the project inventory process, this information was submitted to the TA for review. Based on the timing of project expenditures by phase as submitted by the project sponsors, a preliminary 10-year estimate of revenues and expenditures was developed and is shown in in the CIP, which is a companion document.

A closer examination is necessary to fully understand the financial implications of the 10-year Highway CIP. Historically, actual project costs have generally exceeded initial cost estimates due to the combination of inflation and change orders during construction. In the case of the

Highway CIP, however, total project costs could, in fact, be significantly lower than projected. The cost reduction would be attributable primarily to delays in project schedule, which would push the timetable for construction expenditures out beyond FY2030. Furthermore, available funding during the next 10-years could be significantly higher than the $495 million estimate shown in Table 6-3 should recovery from the COVID-19 pandemic be better than expected. If project proponents are able to garner matching funds, and if the TA were to require a 50 percent match from all project proponents, then available revenues could double to $991.2 million, reducing the shortfall from $731.4 million to $256.1 million. Bringing in the previously unexpended funds – $84.0 million in Measure A and the $28.6 million in Measure W, for a total of $112.6 million – would further reduce the shortfall to $143.5 million; but some of the available funding may need to be saved for reserves in case of unforeseen issues on active projects. Finally, federal legislation aimed at rehabilitating and improving the country's transportation infrastructure could improve the outlook for achieving, and perhaps even exceeding the 50 percent match.

In conclusion, the TA is well positioned to deliver a significant number of much needed highway improvement projects through FY2030. Following adoption of the CIP and the SRHP, the TA will hold its next CFP. The CFP will enable the TA to carefully select and fund only the highest performing projects that demonstrate the best state of readiness to move into the next feasible phase.

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7.0 IMPLEMENTATION

Completion of the Project Inventory, the Highway CIP, and this SRHP signifies major progress toward determining highway fund allocations for the coming decade.

The next step will be to conduct a CFP to further evaluate and select the highest performing projects for Measure A and W funding.

7.1 CALL FOR PROJECTS DETAILS

The TA will define the CFP process in detail for sponsors to successfully be awarded funds for their projects when issuing each CFP. The CFP will provide a list of items needed to adequately evaluate the project's merits.

The process will follow these general steps:

1. Release a CFP with a due date.
2. Evaluate the submitted projects for total project cost as well as the cost for the next feasible phase.
3. Evaluate the various metrics of each project using the method described in Chapter 5 of this report.
4. Submit the preliminary evaluation to the project sponsor to review the draft evaluation results.
5. Finalize the evaluation and prepare a motion to award the funds.

7.2 PLAN TIMELINE

The timeline for allocation of Measure A and W funds to eligible projects will cover 2021 to 2030. During that 10-year span, there may be several CIPs that will update and fine-tune project costs, schedules, and reflect any changes in project scope. Actual funding for projects will be awarded through annual budgets and funding requests as they occur on the TA Board calendar.

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APPENDIX A

Existing and Future Conditions Report

Existing and Future Conditions Report

Final

March 8, 2021

San Mateo County Transportation Authority

EXISTING and FUTURE CONDITIONS REPORT for Short Range Highway Plan (2021-2030)

Final

March 8, 2021

Prepared for:

San Mateo County Transportation Authority

Prepared by:

Stantec Consulting Services Inc.

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EXECUTIVE SUMMARY

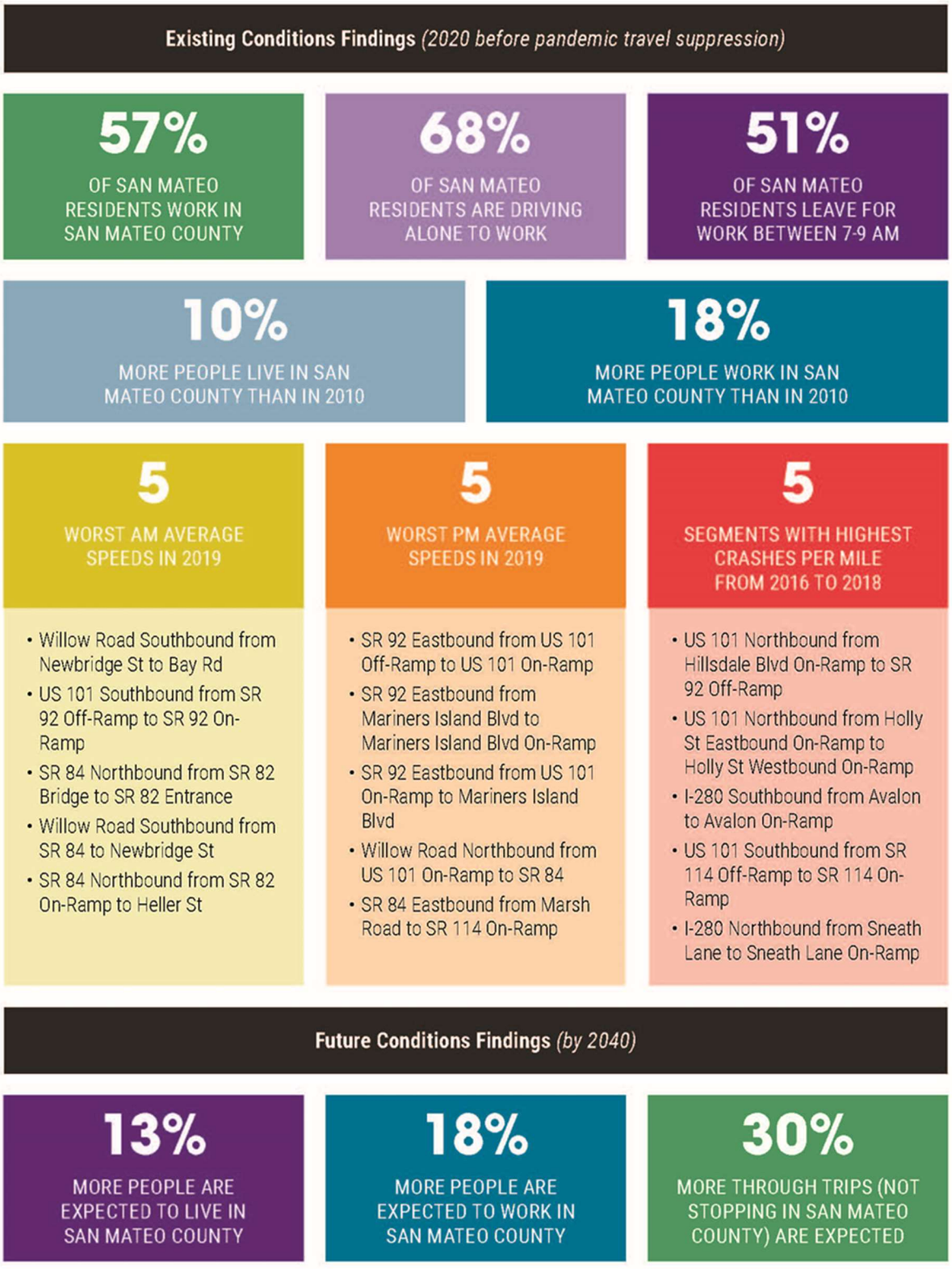
This report presents an overview of the major street and highway system in San Mateo County in four sections -- 2020 existing conditions, anticipated future conditions by 2040, funding opportunities and anticipated projects. Information sourced for this work include the many available sources listed at the end of this report. Although the existing conditions year is 2020, the data sources used here are often presented with 2019 conditions or earlier as available because the suppression of travel during the COVID-19 pandemic has modified travel behavior significantly during 2020.

The **Existing Conditions Section** contains detailed information about demographic and transportation characteristics that present the following challenges related to congestion and safety:

- A majority (57 percent) of employed residents who live in San Mateo County, also work in San Mateo County (Table 5), with a significant commute flow to and from the north and south, and from the east.
- Many working residents drive alone to work, with about half of all workers hitting the road during the 7:00 am to 9:00 am commute crunch (Table 8).
- Recurring congestion points are found at numerous locations.
- Peak period vehicle speeds on US 101 are significantly lower and more unreliable from one day to the next than during free-flow times.

The **Future Conditions Section** describes the anticipated addition of almost 120,000 new residents or 15 percent (Table 9), over 72,000 new jobs or 18 percent (Table 11) and a 30 percent increase in through trips is likely to result in additional congestion (Figure 17). It also lists the projects proposed in *Plan Bay Area 2050* for San Mateo County.

The **Policies and Programs Section** highlights key directives that affect highway planning solutions, and the final section on **Funding Opportunities** details the various major sources of Federal, state, regional and local funds available for constructing highway projects.


Existing Conditions Findings (2020 before pandemic travel suppression)
57%
OF SAN MATEO RESIDENTS WORK IN SAN MATEO COUNTY
68%
OF SAN MATEO RESIDENTS ARE DRIVING ALONE TO WORK
51%
OF SAN MATEO RESIDENTS LEAVE FOR WORK BETWEEN 7-9 AM
10%
MORE PEOPLE LIVE IN SAN MATEO COUNTY THAN IN 2010
18%
MORE PEOPLE WORK IN SAN MATEO COUNTY THAN IN 2010
5
WORST AM AVERAGE SPEEDS IN 2019
• Willow Road Southbound from Newbridge St to Bay Rd
• US 101 Southbound from SR 92 Off-Ramp to SR 92 On-Ramp
• SR 84 Northbound from SR 82 Bridge to SR 82 Entrance
• Willow Road Southbound from SR 84 to Newbridge St
• SR 84 Northbound from SR 82 On-Ramp to Heller St
5
WORST PM AVERAGE SPEEDS IN 2019
• SR 92 Eastbound from US 101 Off-Ramp to US 101 On-Ramp
• SR 92 Eastbound from Mariners Island Blvd to Mariners Island Blvd On-Ramp
• SR 92 Eastbound from US 101 On-Ramp to Mariners Island Blvd
• Willow Road Northbound from US 101 On-Ramp to SR 84
• SR 84 Eastbound from Marsh Road to SR 114 On-Ramp
5
SEGMENTS WITH HIGHEST CRASHES PER MILE FROM 2016 TO 2018
• US 101 Northbound from Hillsdale Blvd On-Ramp to SR 92 Off-Ramp
• US 101 Northbound from Holly St Eastbound On-Ramp to Holly St Westbound On-Ramp
• I-280 Southbound from Avalon to Avalon On-Ramp
• US 101 Southbound from SR 114 Off-Ramp to SR 114 On-Ramp
• I-280 Northbound from Sneath Lane to Sneath Lane On-Ramp
Future Conditions Findings (by 2040)
13%
MORE PEOPLE ARE EXPECTED TO LIVE IN SAN MATEO COUNTY
18%
MORE PEOPLE ARE EXPECTED TO WORK IN SAN MATEO COUNTY
30%
MORE THROUGH TRIPS (NOT STOPPING IN SAN MATEO COUNTY) ARE EXPECTED

INTRODUCTION

This report summarizes the existing and future conditions of the major streets and highway system in San Mateo County focused on 2020 existing conditions as well as anticipated future conditions in 2030 and 2040.

San Mateo County is located between San Francisco and San Jose on the San Francisco Peninsula. The county is 741 square miles in area, 449.1 square miles of which is considered land and the remaining 291.9 square miles is considered water. San Mateo County extends east to west from the San Francisco Bay to the Pacific Ocean with the Santa Cruz Mountains in between these two bodies of water. Most (but not all) of the urbanized portion of the county is located between the San Francisco Bay to the east and I-280 and Skyline Boulevard (SR 35) to the west. The City and County of San Francisco forms the northern border and the Counties of Santa Clara and Santa Cruz the southern border of San Mateo County.

Information sourced for this work include many available sources listed at the end of this report.[1] Stantec has relied on these existing sources and has not developed new data in preparing this report.

EXISTING CONDITIONS

In describing existing conditions, the year is estimated to be 2020. However, these 2020 estimates reflect expected conditions without the impacts of the COVID-19 pandemic that has been occurring during this year. Thus, the data sources used here are often presented with 2019 conditions or earlier as available. This is important because the suppression of travel during the pandemic has modified travel behavior significantly during 2020.

The roadway network documented here is the state highway network, which covers most highways. This network has been comprehensively analyzed in several recent documents, including the *2019 Congestion Management Program* (C/CAG), the *San Mateo Countywide Transportation Plan 2040* (C/CAG) and the *State Highway System Congestion and Safety Assessment Update 2019* (C/CAG and SMCTA). Other roadways may be receipts of recognition in the *2021-2030 Short Range Highway Plan*, including intersections with the state highway system but data on their performance is not comprehensively assessed in the various data sources.

General Demographic Characteristics

San Mateo County has an estimated population of 796,925 as of 2020 according to *Projections 2040*. This is a growth of over 74,000 residents or 10 percent since 2010. Similarly, there are an estimated 284,260 households in the county. This is an increase of above 26,000 households or above 10 percent since 2010. Estimated 2020 populations by jurisdictions are listed in Table 1, with Table 2 containing the estimated households. This growth is attributed to job creation in the

region and approvals of new development by jurisdictions in the county. It should be noted that ABAG made these estimates for 2020 in 2017 based on anticipated housing construction that did not fully materialize, especially for Brisbane.

The same source provides an estimate for total jobs and employed residents. There are just under 400,000 jobs located in San Mateo in the estimate, with just over 415,000 employed residents living in San Mateo County in 2020. This suggests that there are an estimated 0.96 job for each employed resident in 2020. It also demonstrates a general balance between working residents and jobs within the county. Table 3 shows the total number of estimated working residents and Table 4 shows the total jobs by jurisdiction.

Table 1: Recent Change in Total Population

Jurisdiction	2010	2020	Change 2010-2020	Percent Change 2010-2020
Atherton	7,240	7,390	150	2.1%
Belmont	26,080	27,405	1,325	5.1%
Brisbane	4,250	15,235	10,985	258.5%
Burlingame	28,195	29,975	1,780	6.3%
Colma	2,135	2,385	250	11.7%
Daly City	100,020	110,430	10,410	10.4%
East Palo Alto	29,250	30,675	1,425	4.9%
Foster City	31,130	33,140	2,010	6.5%
Half Moon Bay	11,810	13,040	1,230	10.4%
Hillsborough	11,290	11,475	185	1.6%
Menlo Park	32,915	44,530	11,615	35.3%
Millbrae	21,165	22,360	1,195	5.6%
Pacifica	36,480	37,980	1,500	4.1%
Portola Valley	4,570	4,590	20	0.4%
Redwood City	77,710	83,995	6,285	8.1%
San Bruno	39,935	41,895	1,960	4.9%
San Carlos	31,680	33,205	1,525	4.8%
San Mateo	97,320	109,670	12,350	12.7%
South San Francisco	63,340	68,105	4,765	7.5%
Woodside	5,510	5,680	170	3.1%
Unincorporated	60,655	63,760	3,105	5.1%
San Mateo County	**722,685**	**796,925**	**74,240**	**10.3%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Table 2: Recent Change in Total Households

Jurisdiction	2010	2020	Change 2010-2020	Percent Change 2010-2020
Atherton	2,430	2,470	40	1.6%
Belmont	10,415	10,910	495	4.8%
Brisbane	1,770	6,360	4,590	259.3%
Burlingame	12,005	12,755	750	6.2%
Colma	730	835	105	14.4%
Daly City	30,470	33,615	3,145	10.3%
East Palo Alto	7,235	7,610	375	5.2%
Foster City	12,210	13,055	845	6.9%
Half Moon Bay	4,155	4,590	435	10.5%
Hillsborough	3,840	3,895	55	1.4%
Menlo Park	12,570	15,390	2,820	22.4%
Millbrae	7,805	8,235	430	5.5%
Pacifica	13,590	14,155	565	4.2%
Portola Valley	1,795	1,800	5	0.3%
Redwood City	28,145	30,820	2,675	9.5%
San Bruno	14,235	14,890	655	4.6%
San Carlos	12,930	13,575	645	5.0%
San Mateo	38,050	43,035	4,985	13.1%
South San Francisco	20,650	22,155	1,505	7.3%
Woodside	2,065	2,130	65	3.1%
Unincorporated	20,970	21,980	1,010	4.8%
San Mateo County	**258,065**	**284,260**	**26,195**	**10.2%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Table 3: Recent Change in Total Jobs

Jurisdiction	2010	2020	Change 2010-2020	Percent Change 2010-2020
Atherton	2,125	2,140	15	0.7%
Belmont	7,960	9,240	1,280	16.1%
Brisbane	5,055	6,590	1,535	30.4%
Burlingame	26,985	32,335	5,350	19.8%
Colma	3,910	4,070	160	4.1%
Daly City	17,100	18,370	1,270	7.4%
East Palo Alto	4,865	5,810	945	19.4%
Foster City	16,300	23,700	7,400	45.4%
Half Moon Bay	4,985	5,290	305	6.1%
Hillsborough	2,145	2,210	65	3.0%
Menlo Park	33,860	36,410	2,550	7.5%
Millbrae	5,965	6,570	605	10.1%
Pacifica	5,920	6,160	240	4.1%
Portola Valley	1,515	1,520	5	0.3%
Redwood City	59,170	71,050	11,880	20.1%
San Bruno	12,610	14,645	2,035	16.1%
San Carlos	15,375	17,800	2,425	15.8%
San Mateo	50,830	62,570	11,740	23.1%
South San Francisco	37,410	46,365	8,955	23.9%
Woodside	1,990	2,000	10	0.5%
Unincorporated	21,715	24,430	2,715	12.5%
San Mateo County	**337,785**	**399,275**	**61,490**	**18.2%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Table 4: Recent Change in Employed Residents

Jurisdiction	2010	2020	Change 2010-2020	Percent Change 2010-2020
Atherton	3,140	3,885	745	23.7%
Belmont	13,465	16,025	2,560	19.0%
Brisbane	2,115	8,655	6,540	309.2%
Burlingame	12,445	14,820	2,375	19.1%
Colma	970	1,185	215	22.2%
Daly City	47,540	58,245	10,705	22.5%
East Palo Alto	10,650	12,225	1,575	14.8%
Foster City	15,810	19,245	3,435	21.7%
Half Moon Bay	5,425	6,795	1,370	25.3%
Hillsborough	4,875	6,115	1,240	25.4%
Menlo Park	15,200	22,735	7,535	49.6%
Millbrae	8,105	9,505	1,400	17.3%
Pacifica	19,115	22,090	2,975	15.6%
Portola Valley	2,190	2,655	465	21.2%
Redwood City	34,115	41,010	6,895	20.2%
San Bruno	19,215	22,310	3,095	16.1%
San Carlos	16,095	19,245	3,150	19.6%
San Mateo	45,255	57,275	12,020	26.6%
South San Francisco	28,700	34,075	5,375	18.7%
Woodside	2,620	3,320	700	26.7%
Unincorporated	28,295	33,855	5,560	19.7%
San Mateo County	**335,340**	**415,275**	**79,935**	**23.8%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Commuting Patterns

Work migration into and out of San Mateo County is significant, with over 42 percent of residents leaving the county to work. A large proportion of these workers are estimated to be either headed north or south out of the county but not to the east. Table 5 illustrates this commute pattern for residents. (The most recent data was from sampling that ended in 2015, which puts the total number of workers and jobs lower than the estimates above.)

Although the estimate number of workers and jobs are almost balanced, jobs within San Mateo County are estimated to be generally filled by 57.4 percent of local residents. However, in-commuting workers arrive in roughly even percentages from the north, south and east. Table 6 presents the same geographical summaries for those working in San Mateo County.

Table 5: Work Locations of San Mateo County Residents

County	Number	Percent
San Mateo	218,287	57.4%
San Francisco/Marin/Sonoma	83,096	22.0%
Alameda/Contra Costa/Solano/Napa/Central Valley	15,262	4.0%
Santa Clara/Central-Southern Coast	60,543	16.0%
Other	1,314	0.3%
Total Workers Leaving San Mateo County	*167,215*	*42.6%*
Total	**378,502**	

Source: US Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

Table 6: Home Locations of San Mateo County Workers

County	Number	Percent
San Mateo	218,287	57.4%
San Francisco/Marin/Sonoma	52,486	13.8%
Alameda/Contra Costa/Solano/Napa/Central Valley	55,477	14.6%
Santa Clara/Central-Southern Coast	49,422	13.0%
Other	4,720	1.2%
Total Coming into San Mateo County to Work	162,105	*42.6%*
Total	**380,392**	

Source: US Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

The US Census also provides data on the primary reported mode used to travel to work. Table 7 describes the most recent data available on mode choices by resident commuters. As shown in this table, most workers who live in San Mateo County drive alone to work. The public transit mode share is reported at 10.7 percent. With 22 percent of the workers heading to and from the north – mostly into San Francisco, the resulting reported transit mode share is not unexpected.

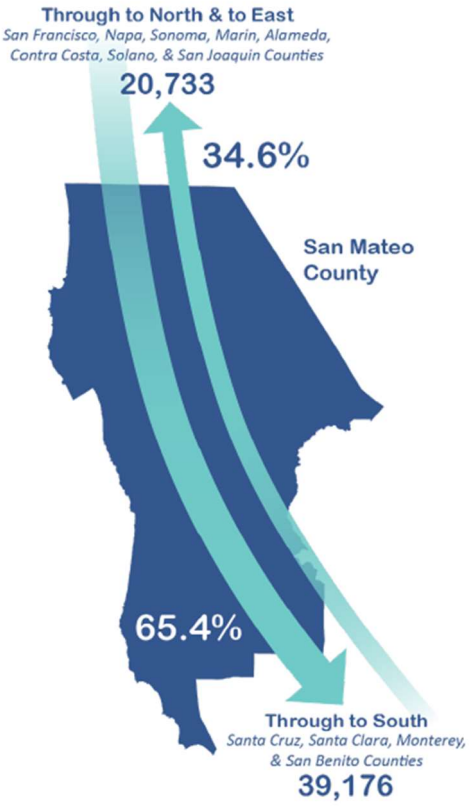
Table 7: Journey to Work by Mode

Primary Mode	Estimate	Percent
Car, truck, or van -- drove alone	274,125	68.3%
Car, truck, or van -- carpooled	41,242	10.3%
Rode public transportation (excluding taxicab)	42,791	10.7%
Walked	10,360	2.6%
Bicycled	5,996	1.5%
Other means (including taxicab and motorcycle)	6,396	1.6%
Worked at home	20,429	5.1%

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

There are also many commuters that travel through San Mateo County to travel between home and work. These are primarily commuters between San Francisco County and points north, and Santa Clara County and points south. Some commuters are also traveling across San Francisco Bay (using the SR 92 San Mateo Bridge or the SR 84 Dumbarton bridge) to reach jobs in other counties. Using the CCAG – VTA travel model, an estimate of 2015 through movements has been developed and illustrated in the *Strategic Plan 2020-2024* prepared by SMCTA. These estimated through movements are shown as Figure 1.

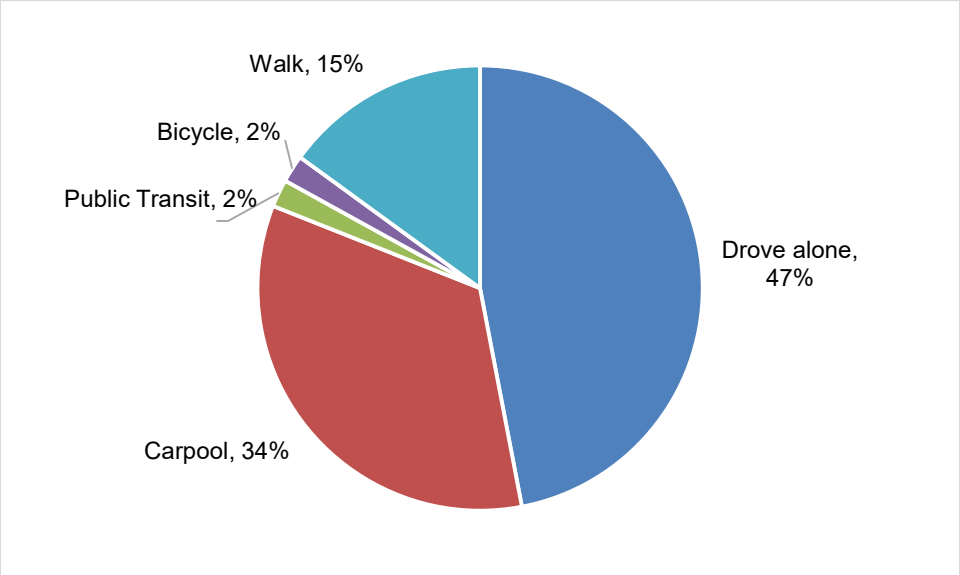
Figure 1: San Mateo County Through Movements (2015)



Source: C/CAG-VTA Countywide Travel Demand Model, 2015; C/CAG 2040 Countywide Transportation Plan

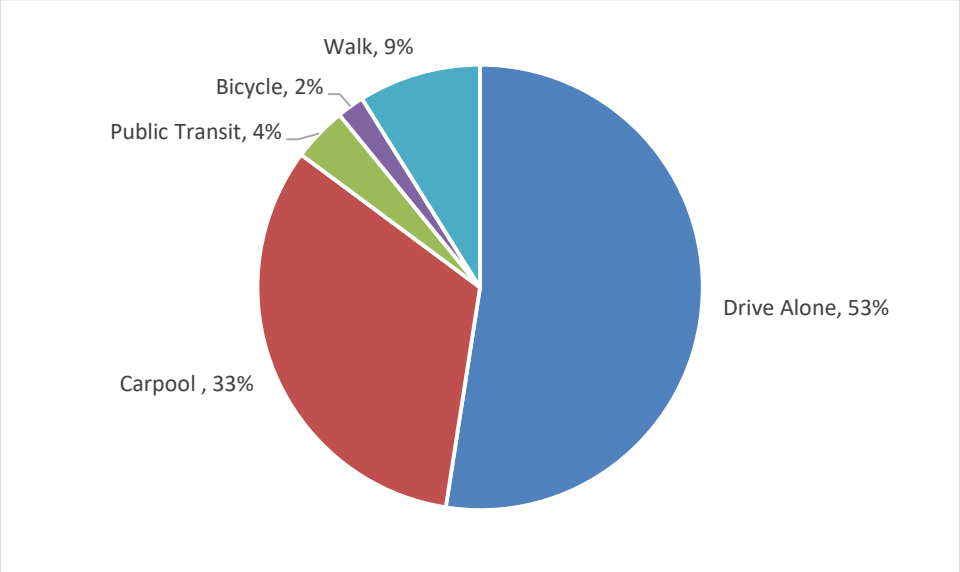
The overall travel patterns by mode have been estimated by primary mode from the travel demand model sponsored by C/CAG and maintained by the Santa Clara Valley Transportation Authority (VTA). Estimates for all trips by mode are shown in Figure 2 within San Mateo County, and Figure 3 for all trips with one end in San Mateo County. These patterns are relatively similar, although those that travel outside of the county are estimated to more predominantly drive alone.

Figure 2: Estimated Travel by Mode within San Mateo County



Source: C/CAG-VTA Countywide Travel Demand Model, 2015; C/CAG 2040 Countywide Transportation Plan

Figure 3: Estimated Travel by Mode within, to and from San Mateo



Source: C/CAG-VTA Countywide Travel Demand Model, 2015; C/CAG 2040 Countywide Transportation Plan

The Census Bureau also provides information about times that people leave for work. Over 50 percent of workers leave home for work between 7 and 9 AM. A significant percentage of workers also leave between 6 and 7 AM (at 13 percent) or leave between 9 and 10 AM (10 percent) reflecting how employees have adjusted morning commute times to extend between 6 and 10 AM. This “commute spread” is indicative of how demand is not concentrated in one or two hours in San Mateo County. Table 8 summarizes the time leaving for work findings from the Census Bureau.

Table 8: San Mateo Residents Time Leaving for Work

Time Leaving for Work	Number	Percent
All workers	387,570	
Did not work at home:	368,340	
5:00 to 5:59 AM	20,535	5.6%
6:00 to 6:59 AM	47,940	13.0%
7:00 to 7:59 AM	101,470	27.5%
8:00 to 8:59 AM	85,170	23.1%
9:00 to 9:59 AM	36,950	10.0%
10:00 to 10:59 AM	15,865	4.3%
11:00 to 11:59 AM	6,290	1.7%
12:00 to 3:59 PM	23,065	6.3%
4:00 to 11:59 PM	19,045	5.2%
12:00 to 4:59 AM	12,015	3.3%
Worked at Home	19,230	

Source: U.S. Census Bureau, American Community Survey 2012-2016 Five-year estimates. Special Tabulation: Census Transportation Planning

Existing Highway System

Most high-volume streets and all freeways are part of the State Highway System. The State Highway System is also the backbone of the Congestion Management Program (CMP) Roadway System, that was adopted in 1991 (as required by the CMP establishment legislation). The specific roadways included in the CMP Roadway System and the reasons why these roadways were included are as follows:

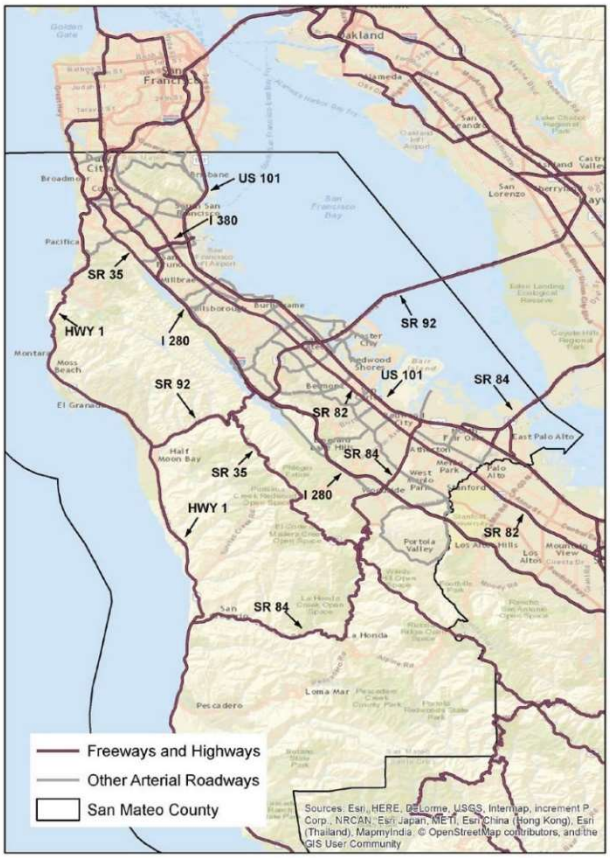
- State Route (SR) 1, SR 35, SR 82, SR 84, SR 92, U.S. 101, SR 109, SR 114, I-280, and I-380 are part of the California State Highway System in San Mateo County.
- SR 1, SR 35, SR 82, U.S. 101, and I-280 extend from the San Francisco County line in the north to the Santa Clara and Santa Cruz county line in the south. These are the only roadways in San Mateo County to meet this requirement.
- SR 84 and SR 92 extend east/west from San Francisco Bay to (SR 1 near) the Pacific Ocean. These roadways in addition to I-380 also connect two (or more) major north/south routes.
- Geneva Avenue, Mission Street and Bayshore Boulevard are the only roadways that are not State Highways that connect to roadways included in the CMP of an adjacent county. These roadways had to be included in San Mateo County's CMP Roadway System to be consistent with San Francisco County's CMP Roadway System. (No roadways, in addition to the State Highways already mentioned, needed to be added to be consistent with the CMP Roadway Systems of Alameda, Santa Clara, and Santa Cruz Counties).
- Portions of El Camino Real (SR 82) are the only roadway segments in San Mateo County that qualify for inclusion in the CMP's Roadway System based on this CMP's definition of a Principal Arterial. (El Camino Real was included in the 11 CMP's roadway system because this street is part of the California State Highway System-SR 82).

The backbone of vehicle travel in San Mateo County is the freeway network among the facilities described above. San Mateo County contains several freeways, including two major north-south multi-lane freeways running completely through the county – US 101 and Interstate 280. In addition, there are several freeway portions of Interstate 380, SR 1 in Daly City and Pacifica, and SR 92 in San Mateo and Foster City. HOV lanes exist on segments of US 101 in 2019 (to be converted to Express Lanes which allow for HOVs and tolls). According to the Caltrans *2018 Public Road Data* (derived from the Highway Performance Monitoring System), 72 percent of the 19.3 million daily vehicle miles of travel are on the state highway system.

The freeway system is augmented by a network of other state facilities and local major arterials. These include SR 1, Skyline Boulevard (SR 35), El Camino Real (SR 82), the remainder of SR 92 and SR 84 (including Woodside Road and Bayfront Expressway) and University Avenue in East Palo Alto (SR 109). In addition to state roads, there are many local arterial roads which carry high volumes of traffic but are not on the state highway or CMP system. Because these are not on these systems, congestion data is generally not be available although these roadways are eligible to be included in the SHP as well as receive funding from programs incorporated with it.

A map of the major streets and highways within the county is shown in Figure 4.

Figure 4: Major Streets and Highways in San Mateo County



Congested Corridors and Operational Strategies

The most recent comprehensive monitoring on traffic congestion in San Mateo County was conducted in 2019. It was published as the *State Highway System Congestion and Safety Assessment Update 2019.*

This report provides detailed maps and tables describing congestion during commute hours. The definition of congestion is based upon total delay, percent of free-flow speed, travel time reliability.

The performance measure results are summarized for the AM and PM peak periods. For the purpose of the analysis, the supporting figures and tables were based on the worst hour of the respective periods. For the AM peak, that was found to be 8-9 am and for the PM peak, it was 5-6 pm.

The represented thresholds in each legend were determined based on the distribution of the results. Each category includes approximately the same percentage of the resulting segments.

Total delay is estimated by comparing the March through May 2019 performance of weekday peak speeds to free-flow speeds. To normalize the impact, the results are estimated per mile (VHD / mile) and multiplied by estimated volumes from the C/CAG – VTA Travel Demand Model for the 2019 year. The results for Total Delay over the region are illustrated in Figures 5 and 6 for the AM and PM Peak Period, respectively.

The greatest morning congestion is shown to be on I-280 southbound from Daly City to San Bruno, US Highway 101 between Burlingame and Belmont in both directions, westbound Highway 92 (San Mateo Bridge), eastbound Highway 92 between El Camino Real and US Highway 101, westbound Highway 84 (Dumbarton Bridge and Bayfront Expressway), westbound Highway 114 (Willow Road) and westbound Highway 109 (University Avenue).

The greatest evening congestion is shown to be I-280 northbound from Millbrae to Daly City and a segment between the Santa Clara County Line and Highway 84, northbound US Highway 101 between Redwood City and South San Francisco and a segment between the Santa Clara County Line and Highway 109 (University Avenue), southbound US Highway 101 between San Francisco International Airport and San Mateo, eastbound Highway 92 between El Camino Real and Alameda County Line (including the San Mateo Bridge), eastbound Highway 84 (Bayfront Expressway and Dumbarton Bridge), eastbound Highway 114 (Willow Road), eastbound Highway 109 (University Avenue) and a short segment of Highway 82 (El Camino Real) in Menlo Park.

A second performance measure reported is percent of free-flow speed. The assessment included both freeways (controlled access facilities) and local state routes that have driveways, traffic signals and sometimes other traffic control devices. The results for percent of free flow over the county are illustrated in Figures 7 and 8 for the AM and PM Peak Period, respectively. As each figure shows, most of the urbanized portions of the county experience delays during these hours, including long stretches of US Highway 101 and Highway 92 (El Camino Real).

The five segments with the greatest decrease in speeds in the morning are:

- Willow Road Southbound from Newbridge St to Bay Rd
- US 101 Southbound from SR 92 Off-Ramp to SR 92 On-Ramp
- SR 84 Northbound from SR 82 Bridge to SR 82 Entrance
- Willow Road Southbound from SR 84 to Newbridge St
- SR 84 Northbound from SR 82 On-Ramp to Heller St

The five segments with the greatest decrease in speeds in the morning are:

- SR 92 Eastbound from US 101 Off-Ramp to US 101 On-Ramp
- SR 92 Eastbound from Mariners Island Blvd to Mariners Island Blvd On-Ramp
- SR 92 Eastbound from US 101 On-Ramp to Mariners Island Blvd
- Willow Road Northbound from US 101 On-Ramp to SR 84
- SR 84 Eastbound from Marsh Road to SR 114 On-Ramp

Figure 5: Delay in Morning Peak Hour

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 6: Delay in Evening Peak Hour

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 7: Travel Speed (Percent of Free Flow Speed) in the Morning Peak Hour

City/County Association of Governments of San Mateo County

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 8: Travel Speed (Percent of Free Flow Speed) in the Evening Peak Hour

City/County Association of Governments of San Mateo County

Source: State Highway System Congestion and Safety Assessment Update 2019

An additional performance measure has been developed to portray travel time reliability called the Buffer Index. The buffer Index in literal terms represents the percent of time a driver would add to the average travel time for their trip to arrive on time to the destination 95 percent of the time over a month. A buffer index value of 25 percent indicates a driver would need to add 25 percent additional travel time over the average trip time (for an average 40 min trip, the driver would need to add 10 extra minutes) given the variability of the drive time over a typical month. The results for the region are illustrated in Figures 9 and 10 for the peak hours of the AM and PM weekday commutes, respectively. The results demonstrate several segments are that have unreliable travel times in both peak hours, indicating congestion bottlenecks in the highway system.

Figure 9: Travel Time Reliability (Buffer Index) in the Morning Peak Hour

Source: State Highway System Congestion and Safety Assessment Update 2019

Figure 10: Travel Time Reliability (Buffer Index) in the Evening Peak Hour

Source: State Highway System Congestion and Safety Assessment Update 2019

Safety on the highway system is an important design concern. The *State Highway System Congestion and Safety Assessment Update 2019* provides information about high crash areas on the system as shown in Figure 11, when a segment location's number of crashes is mapped by segment length, high-crash segments are found in several cities across the urban corridor. The five top crash segments by mile from 2016 to 2018 are:

- US 101 Northbound from Hillsdale Blvd On-Ramp to SR 92 Off-Ramp
- US 101 Northbound from Holly St Eastbound On-Ramp to Holly St Westbound On-Ramp
- I-280 Southbound from Avalon to Avalon On-Ramp
- US 101 Southbound from SR 114 Off-Ramp to SR 114 On-Ramp
- I-280 Northbound from Sneath Lane to Sneath Lane On-Ramp

Figure 11: Top Crash Segments by Mile

Source: State Highway System Congestion and Safety Assessment Update 2019

When these data are mapped by the total number of vehicles multiplied by the length (million annual vehicle miles travelled by segment) as shown in Figure 12, many of the high-crash areas are in the southeast portion of the county (Redwood City, Atherton and Menlo Park).

Figure 12: Top Crash Segments by Segment Million VMT

Source: State Highway System Congestion and Safety Assessment Update 2019

A subset of the highway system is the high-occupancy vehicle (HOV) system. San Mateo County's HOV system is designed to promote increased auto occupancy as well as improved speeds for transit service. These segments are currently regulated for two or more persons per vehicle (HOV 2+). HOV lanes are shown in Figure 13. (Note these lanes will be converted to Express Lanes upon completion of the Express Lanes project.)

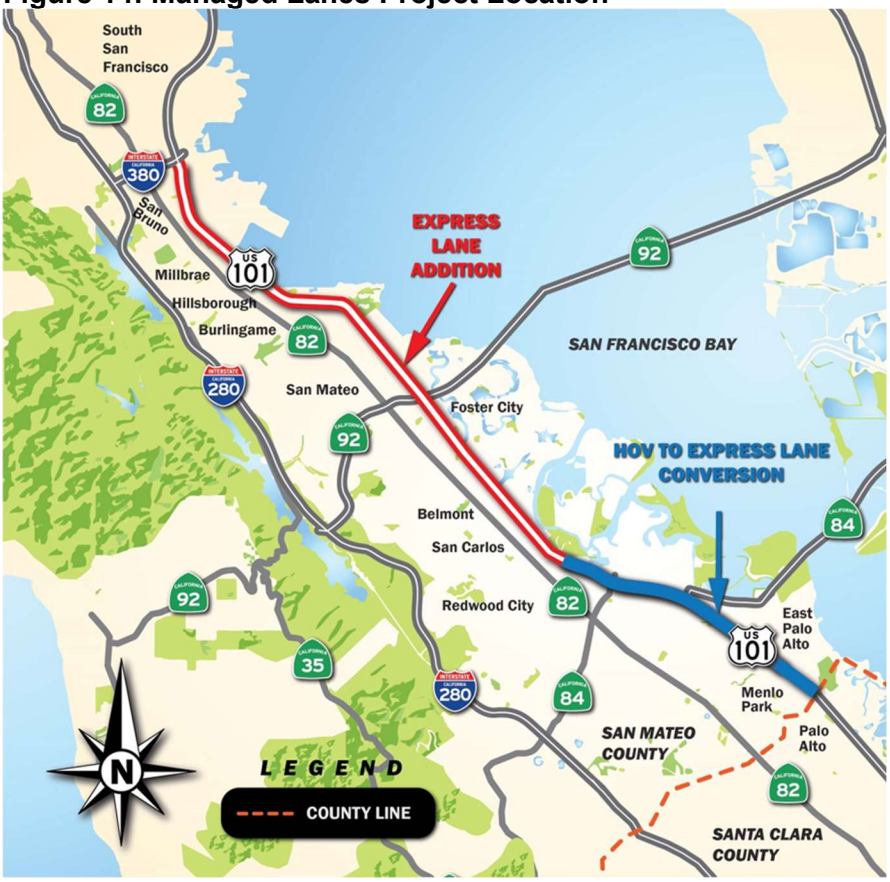
Figure 13: County HOV Lanes

A number of Intelligent Transportation System (ITS) deployments continue to be implemented in San Mateo County. These include traffic adaptive signalization along El Camino Real in Menlo Park, ramp metering at US 101 on-ramps, changeable message signs at several locations on US 101, and smart parking meters in downtown Redwood City (among other examples), and

Caltrain Travel Time and Parking information. These advances in electronics and communications technology in the transportation system have been accompanied by the growing proliferation of smart phones and in-vehicle navigation systems that provide systems users ready access to information about travel conditions in San Mateo County.

One recent project is the installation of Express Lanes on US Highway 101. The Express Lanes are intended to be free for 3+ HOVs, with variable electronic tolling for other vehicles. These new lanes are being installed on the segments shown in Figure 14.

Figure 14: Managed Lanes Project Location



One other major investment on the highway system is the investment over the past 30 years has been a gradual effort to eliminate at grade crossings (Grade Separation Project) along the Caltrain corridor. These projects have resulted in a reduction in accidents and delays that more frequently occurred when Caltrain trainsets occasionally stopped and blocked traffic, bicycle, and pedestrian movement across the tracks. The County began to fund a major street improvement program to create grade separations for Caltrain in 1988. Many of the busiest street grade separations have now been constructed, but several at-grade crossings still exist in South San Francisco, San Bruno, Millbrae, Burlingame, San Mateo, Redwood City, Atherton, and Menlo Park. Where the at-grade crossings exist, traffic experiences periodic delays when waiting for passing trains. Grade separation projects continue to be studied and planned in conjunction with California High Speed Rail project development.

FUTURE CONDITIONS

With a historical record demonstrating consistent population growth during most decades for the past century, San Mateo County anticipates a continued increase in population. According to ABAG *Projections 2017*, the population is expected to grow by about 56,000 more residents by 2030 and another 63,000 more residents by 2040, for a total of about over 916,000 residents (over 119,000 or 15 percent more than in 2020). A change in the populations of each of the jurisdictions are shown in Table 9. Cities that are forecast to have over 10,000 additional residents are Daly City, Menlo Park, Redwood City, San Bruno, San Mateo and South San Francisco.

Table 9: Forecast Change in Total Population

Jurisdiction	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Atherton	7,390	7,525	7,685	295	4.0%
Belmont	27,405	27,970	30,085	2,680	9.8%
Brisbane	15,235	15,145	16,050	815	5.3%
Burlingame	29,975	31,805	33,145	3,170	10.6%
Colma	2,385	2,545	2,485	100	4.2%
Daly City	110,430	113,680	121,330	10,900	9.9%
East Palo Alto	30,675	31,285	36,090	5,415	17.7%
Foster City	33,140	34,095	39,070	5,930	17.9%
Half Moon Bay	13,040	13,345	13,440	400	3.1%
Hillsborough	11,475	11,610	11,850	375	3.3%
Menlo Park	44,530	52,865	54,920	10,390	23.3%
Millbrae	22,360	26,745	27,055	4,695	21.0%
Pacifica	37,980	39,025	40,145	2,165	5.7%
Portola Valley	4,590	4,640	4,730	140	3.1%
Redwood City	83,995	90,995	103,940	19,945	23.7%
San Bruno	41,895	44,330	51,920	10,025	23.9%
San Carlos	33,205	33,915	35,250	2,045	6.2%
San Mateo	109,670	123,200	133,005	23,335	21.3%
South San Francisco	68,105	76,950	80,015	11,910	17.5%
Woodside	5,680	5,745	5,855	175	3.1%
Unincorporated	63,760	65,835	68,525	4,765	7.5%
San Mateo County	**796,925**	**853,260**	**916,590**	**119,665**	**15.0%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Table 10 shows the forecast change in total households. These forecasts are generally reflective of the forecasted population growth in the prior table, as expected.

Table 10: Forecast Change in Total Households

Jurisdiction	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Atherton	2,470	2,485	2,460	-10	-0.4%
Belmont	10,910	11,040	11,620	710	6.5%
Brisbane	6,360	6,285	6,410	50	0.8%
Burlingame	12,755	13,480	13,735	980	7.7%
Colma	835	895	940	105	12.6%
Daly City	33,615	34,390	35,775	2,160	6.4%
East Palo Alto	7,610	7,750	8,675	1,065	14.0%
Foster City	13,055	13,355	15,110	2,055	15.7%
Half Moon Bay	4,590	4,675	4,585	-5	-0.1%
Hillsborough	3,895	3,925	3,910	15	0.4%
Menlo Park	15,390	17,265	17,680	2,290	14.9%
Millbrae	8,235	9,865	9,725	1,490	18.1%
Pacifica	14,155	14,450	14,520	365	2.6%
Portola Valley	1,800	1,810	1,800	0	0.0%
Redwood City	30,820	33,740	38,085	7,265	23.6%
San Bruno	14,890	15,570	17,935	3,045	20.4%
San Carlos	13,575	13,800	13,985	410	3.0%
San Mateo	43,035	48,180	50,830	7,795	18.1%
South San Francisco	22,155	24,950	25,305	3,150	14.2%
Woodside	2,130	2,145	2,125	-5	-0.2%
Unincorporated	21,980	22,465	22,755	775	3.5%
San Mateo County	**284,260**	**302,520**	**317,965**	**33,705**	**11.9%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Over 72,000 new jobs are expected to be added to San Mateo County by 2040 as compared to 2020 estimates. These new jobs are expected to be added in many communities, with the highest numerical job growth expected in Brisbane, Burlingame, Millbrae and Redwood City. These forecasts are shown in Table 11.

Table 11: Forecast Change in Total Jobs

Jurisdiction	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Atherton	2,140	2,150	2,165	25	1.2%
Belmont	9,240	9,425	9,430	190	2.1%
Brisbane	6,590	13,855	16,870	10,280	156.0%
Burlingame	32,335	32,990	42,625	10,290	31.8%
Colma	4,070	4,195	4,315	245	6.0%
Daly City	18,370	18,580	22,480	4,110	22.4%
East Palo Alto	5,810	6,295	6,660	850	14.6%
Foster City	23,700	25,665	27,250	3,550	15.0%
Half Moon Bay	5,290	5,330	5,375	85	1.6%
Hillsborough	2,210	2,225	2,265	55	2.5%
Menlo Park	36,410	37,195	42,475	6,065	16.7%
Millbrae	6,570	6,730	11,595	5,025	76.5%
Pacifica	6,160	6,245	7,115	955	15.5%
Portola Valley	1,520	1,520	1,520	0	0.0%
Redwood City	71,050	73,015	86,720	15,670	22.1%
San Bruno	14,645	14,905	14,780	135	0.9%
San Carlos	17,800	18,300	19,135	1,335	7.5%
San Mateo	62,570	66,510	68,010	5,440	8.7%
South San Francisco	46,365	51,000	54,230	7,865	17.0%
Woodside	2,000	2,000	1,995	-5	-0.3%
Unincorporated	24,430	24,865	25,045	615	2.5%
San Mateo County	**399,275**	**423,005**	**472,045**	**72,770**	**18.2%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

The number of employed residents is expected to grow by only 7.4 percent, which is considerably lower than the 18.2 percent increase in jobs. A major factor contributing to the lag in future growth of new employed residents is that existing workers will decide to age in place and retire within the County. As Table 12 shows, San Mateo County is expected to add 72,770 new jobs, but only 30,765 new workers – resulting in more workers having to commute into San Mateo County from surrounding areas.

A summary of each of these characteristics for the entire county is shown in Table 13.

Table 12: Forecast Change in Employed Residents

Jurisdiction	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Atherton	3,885	4,045	4,065	180	4.6%
Belmont	16,025	16,185	16,670	645	4.0%
Brisbane	8,655	8,340	8,255	-400	-4.6%
Burlingame	14,820	15,380	15,360	540	3.6%
Colma	1,185	1,225	1,130	-55	-4.6%
Daly City	58,245	58,300	59,260	1,015	1.7%
East Palo Alto	12,225	12,190	13,395	1,170	9.6%
Foster City	19,245	19,630	21,910	2,665	13.8%
Half Moon Bay	6,795	6,820	6,625	-170	-2.5%
Hillsborough	6,115	6,405	6,420	305	5.0%
Menlo Park	22,735	26,080	26,205	3,470	15.3%
Millbrae	9,505	11,370	11,045	1,540	16.2%
Pacifica	22,090	22,170	21,865	-225	-1.0%
Portola Valley	2,655	2,765	2,775	120	4.5%
Redwood City	41,010	42,850	46,210	5,200	12.7%
San Bruno	22,310	22,640	25,335	3,025	13.6%
San Carlos	19,245	19,495	19,540	295	1.5%
San Mateo	57,275	62,645	65,370	8,095	14.1%
South San Francisco	34,075	37,390	37,055	2,980	8.7%
Woodside	3,320	3,390	3,400	80	2.4%
Unincorporated	33,855	34,345	34,155	300	0.9%
San Mateo County	**415,275**	**433,655**	**446,040**	**30,765**	**7.4%**

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

Table 13: Countywide Growth Summary

Characteristics	2020	2030	2040	Growth 2020-2040	Percent Growth 2020-2040
Population	796,925	853,260	916,590	119,665	15%
Households	284,260	302,520	317,965	33,705	12%
Total Jobs	399,275	423,005	472,045	72,770	18%
Employed Residents	415,275	433,655	446,040	30,765	7%

Source: Projections 2040. Association of Bay Area Governments; Metropolitan Transportation Commission

The travel forecast is driven by the growth in households and jobs. The expected increases of 12 percent in households and 18 percent in jobs is forecast to result in increased trip making across all modes of travel. As shown in Table 14, total travel in 2040 in San Mateo is expected to increase by 22 percent. Travel by all modes is expected to increase, with transit claiming the largest increase in terms of percentage. The largest increase in absolute numbers, however, will continue to be in automobile trips (driving alone and ridesharing) – approximately 116,000 daily trips, compared to 37,000 for transit and 6,000 for bicycle and walking. Travel within the county is expected to increase less in percentage terms than travel into and out of the county, a 19 percent increase in internal trips compared to a 24 percent increase in trips into and out of the county. One of the areas of highest percentage growth is in transit trips into and out of San Mateo County, a 67 percent increase.

Table 14: Forecasted Travel Growth by Mode for Home-based Work Trips, 2015-2040

Trip Type	Drive Growth	%	Transit Growth	%	Bicycle Growth	%	Walk Growth	%	All Growth	%
Outbound and Inbound Trips	73,098	19%	30,683	67%	3,365	64%	402	43%	107,547	24%
Intra-County Trips	43,354	15%	6,551	87%	2,721	59%	6,045	38%	58,670	19%
Total Trips	116,452	17%	37,233	70%	6,086	62%	6,447	39%	166,218	22%

Source: Countywide Transportation Plan 2040; City/County Association of Governments

Planned Highway Projects

The San Mateo Express Lanes project on US Highway 101 is currently under construction. Opening is anticipated in 2021 for the first segment south of Whipple Avenue to the Santa Clara County Line and 2022 for the second segment north of Whipple Avenue to I-380. This project is budgeted at $581 million.

Although not finalized, a draft set of major projects has been prepared to be included in *Plan Bay Area 2050*. A list developed in October 2019 has been provided by C/CAG and is shown as Table 15. A final adoption of *Plan Bay Area 2050* is expected in the new few months.

Table 15: Regionally Significant Highway Projects in Draft Plan Bay Area 2050

Title	Sponsor	Opening Date	Measure A CIP (2016-2025) Project	Project Cost (2019 M$)
SR 1/Manor Drive Overcrossing Improvement	Pacifica	2030	*	$20
Add NB/SB/ Auxiliary Lanes on US 101 from I-380 to San Francisco County Line	C/CAG	2024	*	$210
Improve Operations at US 101 near SR 92	C/CAG	2026	*	$160
US 101/Woodside Road Interchange Improvements	Redwood City	2025	*	$144
US 101/Produce Avenue Interchange	South San Francisco	2024	*	$146
US 101/Peninsula Avenue Interchange Improvements	San Mateo (city)	2024	*	$85
US 101/Willow Road Interchange Improvements	Menlo Park	2040		$39
US 101/Holly St Interchange Access	San Carlos	2021		$34
SR 92/82 Interchange Improvement	San Mateo (city)	2020	*	$2
SR 1 Operational and Safety Improvements	San Mateo County	2020	*	$90
US 101/Candlestick Interchange Environmental Studies	Brisbane	2021	*	$25
SR 1 Improvements	Half Moon Bay	2020	*	$19
US 101/Sierra Point Parkway Interchange Improvements	Brisbane	2030		$17
US 101/University Avenue Interchange Improvements	East Palo Alto	2021		$15
I-280/D Street Interchange Improvements	Daly City	2025		$1
Millbrae Avenue widening between Rollins Road and US 101 SB	Millbrae	2022		$15
New 6-Lane Road: Geneva/Bayshore to US 101 Candlestick Point Interchange (environmental)	Brisbane	2023	*	$17
Blomquist Street Extension over Redwood Creek to East Bayshore and Bair Island Road	Redwood City	2023		$29
US 92/I-380 Ramp Intersection Upgrades	San Bruno	2035	*	$25
Eastbound I-380 Freeway Expansion	San Bruno	2035		$150
US 101 Grand Avenue Off-Ramp Realignment	South San Francisco	2030		TBD
Railroad Avenue Extension	South San Francisco	2038	*	TBD
US 101/3rd Avenue Interchange	San Mateo (city)	2040		TBD
New Connection from I-380 Terminus/N Access Road to "The East Side"	South San Francisco	2045		TBD
Sierra Point Connection	South San Francisco	2045		TBD
SR 92 (El Camino Real) Road Diet	Millbrae	2025		$50

Source: SMCTA; City/County Association of Governments

Other Major Planned Transportation Projects

In addition to projects on the highway system, these major transportation projects are planned that will affect the system in a variety of ways. These projects may require design modifications on the highway system, or result in improvements to traffic operations on the system. These include:

The Caltrain Modernization Program (CalMod) includes electrification and other projects that will upgrade the performance, efficiency, capacity, safety and reliability of Caltrain's service. Electrification provides the foundation that future CalMod improvements are based on, including full conversion to an electric fleet, platform and station improvements, the extension of service to Downtown San Francisco, and other projects that allow Caltrain to grow and evolve with the Bay Area.

The California High Speed Rail project will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands. The system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. In addition, the Authority is working with regional partners to implement a state-wide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs. A station is planned at the joint Millbrae BART/ Caltrain station, and the corridor is anticipated to be interoperable with the Caltrain corridor through San Mateo County. To accommodate faster trains, several at-grade crossings will need to be addressed in San Mateo County by creating grade separations or designing secure gates.

The Grand Boulevard Initiative: Creating Safe and Healthy Corridor Communities Project is an integrated transportation, streetscape and land use strategy for SR 92 or El Camino Real. To project is intended to revitalize the El Camino Real corridor, as it runs through San Mateo and Santa Clara counties on the San Francisco Peninsula. Beginning in 2006, 19 cities, counties, local and regional agencies united to improve the performance, safety and aesthetics of El Camino Real. Starting at the northern Daly City city limit (where it is named Mission Street) and ending near the Diridon Caltrain station in central San Jose (where it is named The Alameda), the initiative brings together all of the agencies having responsibility for the condition, use and performance of the street. This project will implement a range of multimodal improvements and address safety issues in the El Camino Real Corridor. The project is being implemented on a segment-by-segment basis with cities as project sponsors.

The projects and issues listed here have associated impacts with safety, street operations and optimum emergency response. Examples include:

- Railroad grade crossings increase the likelihood of rail collisions with vehicles, bicyclists or pedestrians.
- Freeway congestion can result in congestion spillback onto local streets.
- Lanes over-saturated with traffic can experience traffic blockages for emergency vehicles.

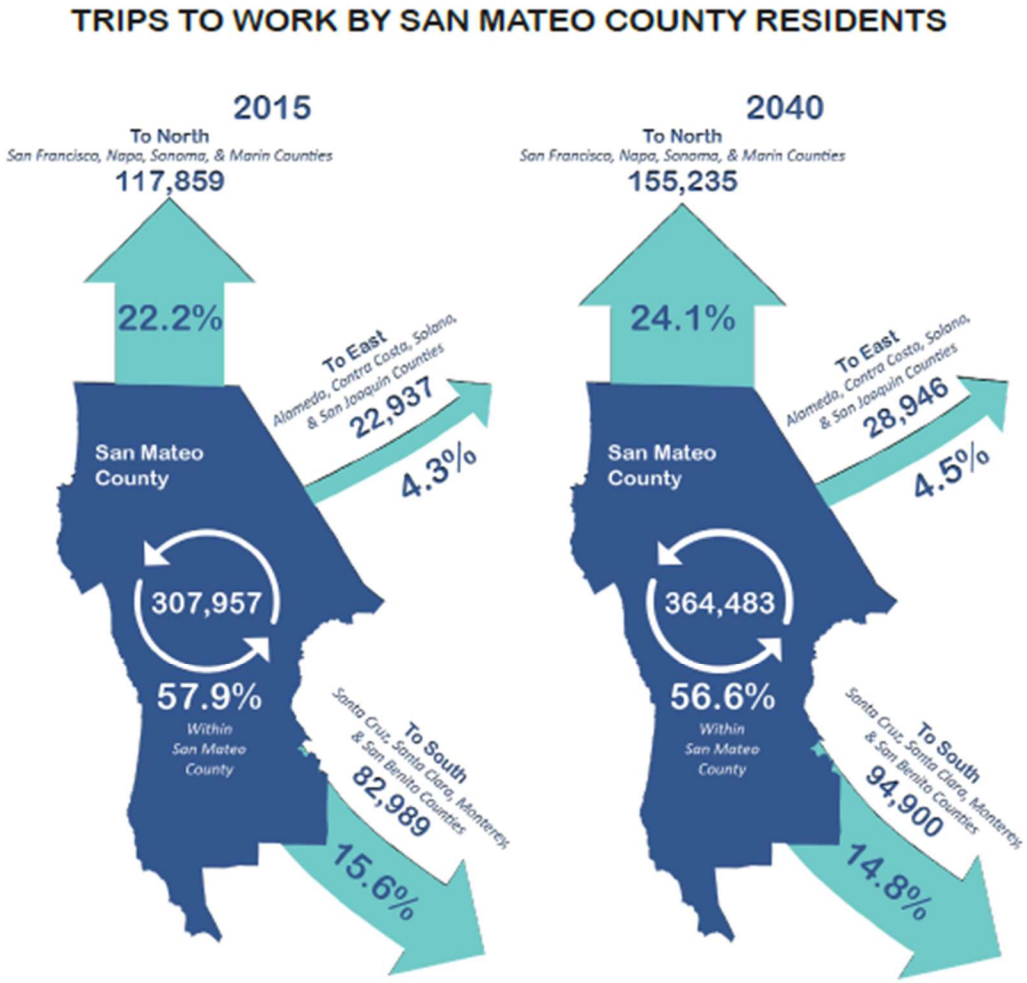
A number of cities in San Mateo County have pursued safety studies and implemented projects to improve safety. This includes city-wide, corridor, neighborhood and school area studies.

Future Congestion

SMCTA and C/CAG have supported a version of the Santa Clara VTA travel demand model for use in San Mateo County for several years. As this model reflects regional flows, it is sensitive to demand through the various gateways into and out of the County. The travel model is calibrated to base year conditions, and the behavioral assumptions establishing that are then applied to a future year network and land use to test the outcomes of a future year.

One product of the travel demand model is trip estimates for a 2015 base and forecasts for the 2040 future year. These patterns have been graphically summarized in the *2020-2024 Strategic Plan* and are shown here as Figure 15 for trips by local residents, Figure 16 for trips entering or leaving San Mateo County, and Figure 17 for trips travelling through but not stopping in San Mateo County. Generally, travel demand patterns among residents will remain in similar proportions to today. However, a larger increase in workers coming from south of the county is forecasted. Finally, through trips heading to jobs north of the county is forecast to grow at a much higher percentage than those trips that begin or end within the county.

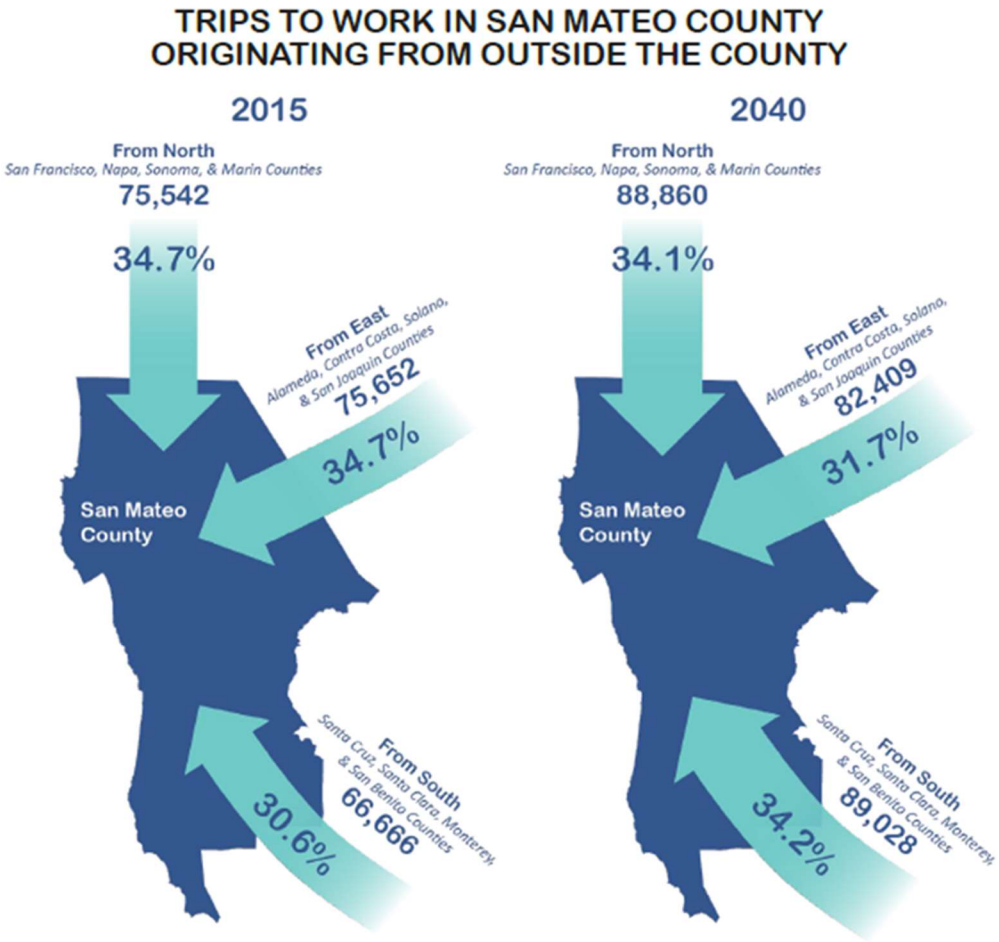
Figure 15: Trips to Work by San Mateo Residents



Trips to Work by San Mateo County Residents	2015	2040	Increase in Trips	Percent Change
Within San Mateo County	307,957	364,483	+ 56,526	+ 18.4 %
To North	117,859	155,235	+ 37,376	+ 31.7 %
To East	22,937	28,946	+ 6,009	+ 26.2 %
To South	82,989	94,900	+ 11,911	+ 14.4%
Total Trips	**531,742**	**643,564**	**+ 111,822**	**+ 21.03 %**

Source: SMCTA, 2020-2024 Strategic Plan summary from C/CAG Travel Demand Model (2017)

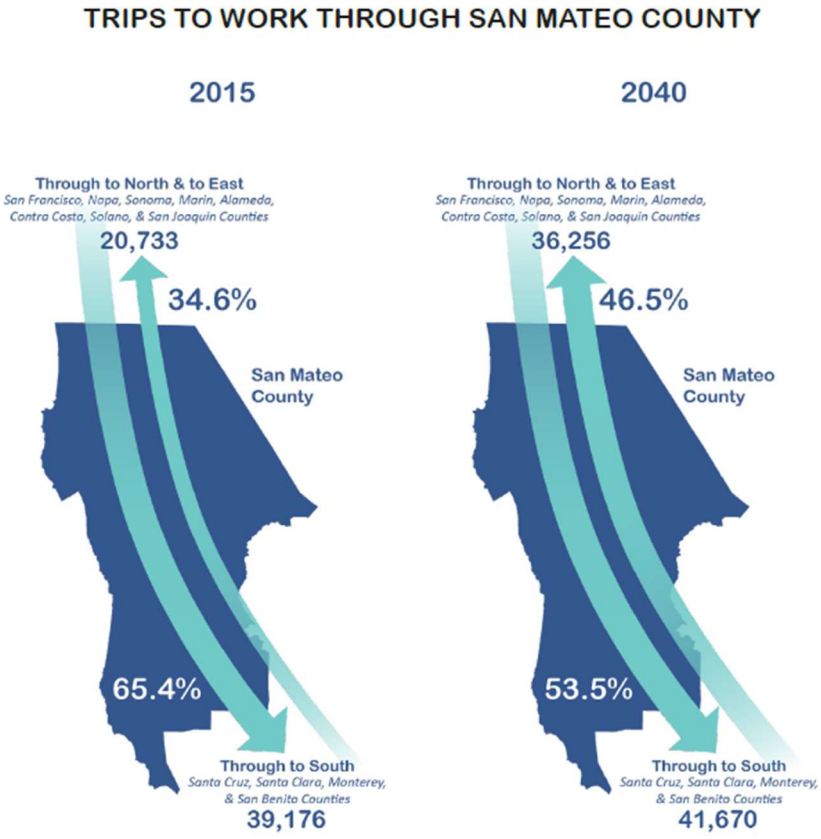
Figure 16: Trips to Work on San Mateo County Originating from Outside the County



Trips to Work in San Mateo County Originating from Outside the County	2015	2040	Increase in Trips	Percent Change
From North	75,542	88,860	+ 13,318	+17.6 %
From East	75,652	82,409	+ 6,757	+ 8.9 %
From South	66,666	89,028	+ 22,362	+ 33.5 %
Total Trips	**217,860**	**260,297**	**+ 42,437**	**+ 19.5 %**

Source: SMCTA, 2020-2024 Strategic Plan summary from C/CAG Travel Demand Model (2017)

Figure 17: Trips to Work Through San Mateo County



Trips to Work through San Mateo County	2015	2040	Increase in Trips	Percent Change
Through to North & to East	20,733	36,256	+ 15,523	+ 74.9 %
Through to South	39,176	41,670	+ 2,494	+ 6.4 %
Total Trips	**59,909**	**77,926**	**+ 18,017**	**+ 30.1 %**

Source: SMCTA, 2020-2024 Strategic Plan summary from C/CAG Travel Demand Model (2017)

Some system operations programs are not fully reflected in the travel demand model. These are designed to improve the traveler experience as well as to maximize the utilization of the constrained right of way along freeways and at interchanges. These include operational strategies associated with “smart” corridor operations, changeable messaging systems on highway, expanded ramp metering and managed lanes. Moreover, the recent stay-at-home orders promulgated by COVID-19, are not reflected in the travel model.

POLICIES AND PROGRAMS

There are many policies and programs which guide transportation project development. Significant ones include the following:

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) has a long history of implementation with detailed technical studies and noticing requirements. Once any impacts are identified, unavoidable ones must have a proposed mitigation strategy.

Senate Bill 375 (SB 375)

SB 375 request metropolitan transportation organizations to develop a Sustainable Communities Strategy (SCS) – a new element of the regional transportation plan (RTP) – to strive to reach the GHG reduction target established for each region by the California Air Resource Board. The target for the Bay Area is a 7 percent per capita reduction by 2020 and a 15 percent per capita reduction by 2035.

Senate Bill 743 (SB 743)

SB 743 was signed in 2013, with the intent to “more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.” When implemented, “traffic congestion shall not be considered a significant impact on the environment” within California Environmental Quality Act (CEQA) transportation analysis.

SB 743 requires the Governor’s Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis. For transportation projects, lead agencies for roadway capacity projects have discretion, consistent with CEQA and planning requirements, to choose which metric to use to evaluate transportation impacts.

Regulatory changes to the CEQA Guidelines that implement SB 743 were approved on December 28, 2018. OPR released a December 2018 Technical Advisory that contains recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. Statewide implementation occurred on July 1, 2020.

Sustainable Communities Strategy (SCS)

The region is engaged in developing a detailed 25-year transportation investment and land-use strategy for 2015-2040 that will be the region's first plan to incorporate a Sustainable Communities Strategy (SCS). The SCS promotes compact, mixed-used commercial and residential development that is walkable and bikeable and close to mass transit, jobs, schools, shopping, parks, recreation and other amenities. The SCS is known as Plan Bay Area, the region's Regional Transportation Plan (RTP) and has been developed in an integrative process with the Bay Area's regional and local partners.

The SCS, adopted in 2013, will be an integrated long-range land use and transportation plan for the nine-county region. The San Mateo County CMP acknowledges the SCS process, along with the regional FOCUS approach, and specifically recognizing the planned and potential Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs) within San Mateo County.

The Bay Area 2010 Clean Air Plan (CAP)

The Bay Area 2010 Clean Air Plan (CAP) provides a comprehensive plan to improve Bay Area air quality and protect public health. The CAP defines a control strategy that the Air District and its partners will implement to: 1) reduce emissions and decrease ambient concentrations of harmful pollutants; 2) safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily impacted by air pollution; and 3) reduce greenhouse gas (GHG) emissions to protect the climate.

Executive Order N-19-19

Governor Newsom issued Executive Order N-19-19 in September 2019. While not a designated program, this order directs state agencies to create and implement a Climate Investment Framework and to leverage transportation spending to promote reduced greenhouse gas emissions among other policy directives.

FUNDING OPPORTUNITIES

Funding opportunities occur at all levels of government – Federal, state, regional and local. Each funding opportunity has an array of requirements and competitiveness. A detailed description of these programs is provided here -- extracted from the C/CAG San Mateo *Countywide Transportation Plan 2040* as well as other funding descriptions.

FEDERAL FUNDS

Congress has historically passed multiyear acts that funds transportation at the federal level. These acts are typically six-year acts, which are often, extend until new acts are passed. Federal-aid funds are typically distributed through the state (Caltrans) and the region (Metropolitan Transportation Commission (MTC) before allocations are made to the counties. MTC sets priorities and controls flow of dollars to the region from federal funding programs and often dictates the direction of those Federal funds.

Fixing America's Surface Transportation Act (Fast)

The current act Fixing America's Surface Transportation Act (FAST) supersedes and builds upon the Moving Ahead for Progress in the 21st Century Act (MAP-21) and is the first long-term (five-year) surface transportation authorization enacted in a decade that provides funding certainty for surface transportation. It has been granted a one-year extension until a new transportation funding bill is passed on the Federal level. It supplies funding at the federal level to improve the surface transportation infrastructure, including roads, bridges, transit systems, and passenger rail network, as well as to improve federal safety programs for highways and public transportation. Its goals are to improve mobility on highways, including easing congestion and facilitating the movement of freight, create jobs and support economic growth, and accelerate project delivery and promote innovation.

Surface Transportation Block Grant Program (STBG) and Congestion Mitigation Air Quality (CMAQ)

STBG, which supersedes Surface Transportation Program (STP), and CMAQ are flexible funds because they are not restricted to particular modes of transportation. STBG funds can be used for almost all types of transportation capital improvement projects. CMAQ funds are limited to new or expanded transportation projects that support efforts to meet requirements under the Clean Air Act in nonattainment or maintenance areas. Examples of CMAQ eligible projects include non-recreational bicycle and pedestrian facilities, transit projects, rideshare and telecommuting activities, and signal coordination. The FAST Act added eligibility for verified technologies for non-road vehicles and non-road engines that are used in port-related freight operations, the installation of vehicle-to-infrastructure communications equipment, and electric vehicle and natural gas vehicle infrastructure. Both STBG and CMAQ projects follow the federal-aid process.

Federal STBG/CMAQ funds are considered flexible. Historically, the County directed its share of the former STP funds toward local streets and roads maintenance and CMAQ funds toward bicycle and Transportation for Livable Communities (TLC) projects, which are directed toward facility improvements in transit and multimodal corridors.

The FAST Act has also replaced the Transportation Alternative (TA) Program with a set-aside of funds under the STBG, called the TA Set-Aside. The TA Set-Aside authorizes funding for programs and projects defined as transportation alternatives, such as provision of facilities for pedestrians and bicycles, historic preservation, safe routes to school, and environmental mitigation to address mitigation of water pollution due to highway runoff. These funds are combined with other state funds as part of the Active Transportation Program.

BUILD (Better Utilizing Investments to Leverage Development) Discretionary Grant Program

The Better Utilizing Investments to Leverage Development (or BUILD) Transportation Discretionary Grant program provides a unique opportunity for the DOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Previously known as Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grants, Congress has dedicated funds in eleven competitive rounds of National Infrastructure Investments to fund projects that have a significant local or regional impact. In each competition, DOT receives hundreds of applications to build and repair critical pieces of our freight and passenger transportation networks. The BUILD program enables DOT to examine these projects on their merits to help ensure that taxpayers are getting the highest value for every dollar invested.

STATE FUNDS

Senate Bill 1: The Road Repair and Accountability Act

The passage of The Road Repair and Accountability Act of 2017 increased transportation funding and instituting much-needed reforms. SB 1 provides the first significant, stable, and on-going increase in state transportation funding in more than two decades. The major highlights that affect highway funding are described below:

Solutions for Congested Corridors Program (SCCP). The purpose of the Solutions for Congested Corridors Program is to provide funding to achieve a balanced set of transportation, environmental, and community access improvements to reduce congestion throughout the state. This statewide, competitive program makes $250 million available annually for projects that implement specific transportation performance improvements and are part of a comprehensive corridor plan by providing more transportation choices while preserving the character of local communities and creating opportunities for neighborhood enhancement.

Trade Corridor Enhancement Program (TCEP). The Trade Corridor Enhancement Program provides an ongoing source of state funding dedicated to freight-related projects by establishing the new Trade Corridor Enhancement Account (TCEA). The TCEA will provide approximately $300 million per year in state funding for projects which more efficiently enhance the movement of goods along corridors that have a high freight volume. Subsequent legislation (SB 103) combined the Trade Corridor Enhancement Program funds with existing federal freight funding.

Local Streets and Roads Program (LSRP). The Local Streets and Roads Program dedicates approximately $1.5 billion per year in new formula revenues apportioned by the State Controller to cities and counties for basic road maintenance, rehabilitation, and critical safety projects on the local streets and roads system.

Local Partnership Program (LPP). The Local Partnership Program provides local and regional transportation agencies that have passed sales tax measures, developer fees, or other imposed transportation fees with a continuous appropriation of $200 million annually to fund road maintenance and rehabilitation, sound walls, and other transportation improvement projects.

In addition to these programs, modifications were made to the State Transportation Improvement Program (STIP listed in this section. Other programs were also affected -- Active Transportation Program (ATP), the State Highway Operation and Protection Program (SHOPP) – but these are not generally applied towards major highway projects.

Gasoline Excise Tax

In 2010, Proposition 42, which imposed a five percent sales tax on gasoline, was eliminated and replaced by an excise tax, also known as the fuel tax swap. The fuel tax swap legislation adjusts the rates of the sales and excise tax on gasoline and is designed to be revenue neutral. The legislation mandates the Board of Equalization (BOE) to adjust the excise tax rate every year by March 1. The revenue effects of this "swap" on the State Highway Account fluctuate with gas prices. The State Highway Account funds STIP, SHOPP, and Local Streets and Roads.

State Transportation Improvement Program (STIP)

The STIP is a multi-year capital improvement program of transportation projects on and off the State Highway System, funded with revenues from the Transportation Investment Fund, State Highway Account (SHA), and other funding sources. Formula funding is provided to counties for transportation projects that relieve congestion and expand and improve the state's transportation system (mainly state highways). Caltrans administers 25% of the entire STIP and directs funds towards state/ interstate highway projects, while the remaining 75% of the STIP is administered locally and is distributed to counties on a formula basis. San Mateo's portion of the STIP is controlled and administered by C/CAG. Projects are nominated and programmed by C/CAG. Historically, C/CAG directed most of the STIP towards highway improvement projects administered by Caltrans or the San Mateo County Transportation Authority (SMCTA). In previous years, the STIP allocations were entirely State funded. Starting in 2010, all STIP allocations over $1 million are federalized, requiring all large STIP funded projects to meet both Federal and State requirements.

REGIONAL PROGRAMS

A number of regional programs have been created that can also become an available funding source. One major program is sometimes applied to highway projects, as listed below.

Bridge Toll Revenues

The Bay Area Toll Authority (BATA) has three regional measures that collected revenue for bridge corridor projects (Regional Measures 1, 2 and 3) that have categories of funds which can be used for some highway projects associated with bridge movement. This is in addition to tolls raised for bridge seismic retrofit. It should be noted that Regional Measure 3 has legal challenges which remain unresolved at the time of this document's preparation. Further, Regional Measures 1 and 2 appear to be fully programmed so that further funding is doubtful.

COUNTYWIDE AND LOCAL FUNDING PROGRAMS

A number of funding programs exist at the countywide or local funding level. The most significant are Measures A and W, with other sources potentially available but not as large. A description of each program is detailed below.

Measure A

San Mateo County voters first approved Measure A in 1988 in San Mateo County. Measure A is a half-cent sales tax dedicated towards transportation facilities, services, and programs. In 2004, voters reauthorized Measure A to run between January 1, 2009 and December 31, 2033. The Measure A Transportation Expenditure Plan (TEP) identifies six primary categories for investment: Transit, Highways, Local Streets/Transportation, Grade Separations, Pedestrian and Bicycle, and Alternative Congestion Relief Programs, to be guided by the following Vision and Goals and Objectives. The San Mateo County Transportation Authority (SMCTA) administers Measure A funds. A Strategic Plan has been developed to guide the evaluation of projects that apply for funding. A capital improvement plan based on forecasts of revenues and projects to be undertaken is updated each year.

Measure A allocated proportions of the revenue to different types of programs. This includes 27.5 percent for highways and 22.5 percent for local streets and transportation.

A recent summary of Measure A projects was prepared by SMCTA. This summary, shown as Table 16, explains the most recently available status of the funds expended for highway projects.

Measure W

Measure W was approved by San Mateo County voters in 2018. It generates additional funds from an additional half-cent sales tax authorized for a period of 30 years beginning July 2019 and ending June 30, 2038. Measure W contains the Congestion Relief Plan which establishes five Investment Categories for these funds: Highway/Interchange, Local Safety/Pothole, Bicycle/Pedestrian, Regional Connections, and Public Transit.

The fund allocations include 22.5 percent identified for countywide highway congestion relief and another 10 percent for local investment shares. Other SMCTA-administered categories include funds established for grade separations, expanded bicycle and pedestrian facilities and improved transit connections. 50 percent of those funds are administered by the SMCTA and the remaining 50 percent are administered by the SamTrans Board of Directors.

Table 16: Measure A Highway Program Fund History

Corridor	Sponsor	Project(s)	Programmed Funds		Phase/Status as of Dec 2020
			Total Original Measure A	Total New Measure A	
Highway 1 (State Route 1 Improvments)	Pacifica	Fassler Avenue to Westport Drive in Pacifica (Calera)	$5,419,162	$4,000,000	Signal construction completed; widening to be determined
	Half Moon Bay	State Route 1 with City Limits of Half Moon Bay	$1,342	$0	Not Initiated
	County of San Mateo	Midcoast Project	$0	$1,500,000	Grey Whale Cove segment in design phase
	Half Moon Bay	Poplar to Wavecrest Improvements	$0	$3,940,000	Construction in progress
	Half Moon Bay	Main to Kehoe Improvements	$0	$3,500,000	Final design completed, Construction pending more funds
	Pacifica	San Pedro Creek Bridge	$0	$10,054,000	Construction completed, biological monitoring in progress
	Pacifica	State Route 1 Manor Drive Overcrossing	$0	$645,000	Preliminary planning in progress
Bayshore Corridor Highway (US-101) Improvements	TA	Widen US-101 to 8 lanes from Whipple Ave to Santa Clara County	$172	$0	Completed
	San Mateo	Reconstruct Peninsula Interchange	$1,621,862	$2,500,000	Project Approval and Environmental Design in progress
	Burlingame	Reconstruct Broadway Interchange	$59,187,000	$0	Construction completed, landscape remaining
	Menlo Park	Reconstruct Willow Interchange	$45,814,032	$15,585,968	Construction completed, landscape remaining
	East Palo Alto	Reconstruct University Interchange	$6,099,744	$0	Completed
	San Carlos	Reconstruct Brittan Interchange	$8,391,119	$0	Completed
	Brisbane	Reconstruct Candlestick Park Interchange	$437,992	$0	Project Study Report (PSR) completed
	Menlo Park	Reconstruct Marsh Road Interchange	$7,233,825	$0	Completed
	South San Francisco	Reconstruct Oyster Point Interchange	$26,250,623	$0	Completed
	C/CAG and TA	Express Lanes South - Auxiliary Lanes and Safety Improvements (multiple segments)	$135,050,259	$32,293,000	Construction in progress
	C/CAG and TA	Express Lanes North - Auxiliary Lanes and Safety Improvements		$9,000,000	Project Approval and Environmental Design in progress
	C/CAG and Caltrans	Ramp Metering - Hillsdale	$156,539	$0	Inactive / Closed Out
	C/CAG and TA	University to Embarcadero Study	$639	$0	Inactive / Closed Out
	C/CAG and TA	US 101 / SR 92 Interchange Improvements	$366,634	$630,000	Project Approval and Environmental Design in progress
	San Mateo and Foster City	US 101 / SR 92 Interchange Direct Connectors	$0	$2,207,000	Project Initiation Document (PID) in progress
	Redwood City	US 101 / SR 84 (Woodside Rd) Interchange	$12,690,000	$26,215,000	Engineering and Right-of-Way in progress

Table 16: Measure A Highway Program Fund History (continued)

Corridor	Sponsor	Project(s)	Programmed Funds		Status as of December 2020
			Total Original Measure A	Total New Measure A	
Bayshore Corridor Highway (US-101) Improvements	San Carlos	US 101 / Holly Interchange	$0	$17,590,000	Final Design in progress
	South San Francisco	US 101 / Produce Ave	$0	$3,550,000	Project Approval and Environmental Design in progress
	South San Francisco	Railroad Ave Extension	$0	$79,980	Feasibility study completed
Highway 92 (State Route 92 Improvements)	N/A	San Mateo Bridge to US-101	$0	$0	Not Initiated
	San Mateo	US-101 to I-280 including El Camino Off-Ramps	$3,101,183	$16,200,000	Construction completed, landscape remaining
	County of San Mateo	I-280 to State Route 1 (multiple projects)	$24,368,424	$0	Climbing lanes completed, other sections inactive
	Foster City	Triton Dr Widening	$0	$650,000	Completed
Improvements to Approach of the Dumbarton Bridge	Menlo Park	Bayfront Expressway Extension (SR-84)	$468,600	$0	Inactive / Closed Out
	Menlo Park	Bayfront Expressway (SR-84) from Willow to Marsh Road (widen to 4 lanes)	$2,851,213	$0	Completed
		Study Alternatives to allow more direct traffic flow from Dumbarton Bridge to destinations further south	$9,753	$0	Completed
	Menlo Park	Bayfront Expressway (SR-84) from Willow to Marsh Road Signal Improvements	$0	$91,062	Completed
State Route 84	Redwood City	Woodside Road Widening	$735,764	$0	Completed
Highway 280 (I-280) Improvements	Daly City	I-280 Eastmoor Off-ramp	$1,061,937	$0	Completed
	Daly City	Improve Southbound connection from SR 1 to Serramonte Blvd	$385,955	$0	Completed
	San Bruno	Improve Access and Transitions at I-280/I-380 Interchange	$634,465	$0	Completed
	San Carlos	I-280 Crestview Drive On-ramp	$2,206	$0	Removed
	Daly City	D Street on-ramp to I-280 and State Route 1 in Daly City	$10,140,008	$0	Completed
Highway 380	San Bruno	I-380 Congestion Improvements	$0	$500,000	Prel planning study completed
State Route 35	San Bruno and South San Francisco	Skyline Blvd (SR-35) Widening	$0	$850,000	Project Initiation Document (PID) in progress
Small Studies or Safety Improvements	Brisbane	Geneva Ave Corridor Study	$35,000	$0	Completed
	San Mateo	Poplar Corridor Safety Improvement	$1,500,000	$0	Completed
	Menlo Park	Sand Hill Road Signal Coordination	$0	$1,300,000	Completed
Program Evaluation & Management	TA	Highway Evaluation Program	$2,639,864	$0	On-going
Total			**$356,655,317**	**$152,881,010**	

Managed Lanes Toll Revenue

A new entity, called the San Mateo County Express Lanes Joint Powers Authority (JPA) will be responsible for distributing and auditing express lanes toll revenue once these lanes are open and collecting tolls from vehicles that use the lane but occupancy requirements to utilize the lane for free. Because a part of the Express Lanes revenue is set aside by law for debt service on the capital construction cost, operations, maintenance, enhanced violation enforcement, equity programs and other categories to keep the system in good working order, only the remaining revenue is eligible for reallocation into related transportation projects. These are specified in the approval application submitted to the California Transportation Commission (CTC) in 2019.

Transportation/Development Impact Fees

Funds are collected from land developers directly by the Cities or County of San Mateo. Developer funds are controlled entirely by the local jurisdiction and are sometimes used to fund transportation improvements to offset impacts caused by the development. While not systemically applied to highway projects, such fees are an optional funding source for those projects justified to serve new development areas.

Measure M San Mateo County Vehicle License Fee

Through the approval of Measure M in 2010, San Mateo currently levies ten dollars for every vehicle registered in San Mateo County. C/CAG administers these funds, and 50 percent of the funds are returned to the member jurisdictions via reimbursement for specific congestion management activities and implementation of water pollution control measures. The remaining 50 percent of funds are used by C/CAG for countywide congestion management projects and programs, and water pollution control activities. These funds are generally not applied to specific highway projects of countywide significance unless a member jurisdiction seeks to use them.

Congestion Relief Plan (C/CAG Member Agency Dues)

Per Proposition 111 requirements, local agencies whose developments negatively impact the Congestion Management Plan (CMP) system by causing the level of service on a “non-exempt” segment of the highway to fall to a level of service (LOS) “F” must prepare deficiency plans. C/CAG receives funds from its member agencies for the purpose of comprehensively addressing CMP deficiencies on behalf of its member agencies. Funds must be used for congestion relief planning and implementation activities. The usefulness of this source has diminished as subsequent technical exemptions has reduced the legal requirements for action and funding based on Proposition 111 requirements.

REFERENCES

101 Managed Lanes Recirculated Partial Draft Environmental Impact Report/Environmental Assessment. Caltrans, San Mateo County Transportation Authority and City/County Association of Governments (July 2018)

2019 Congestion Management Program. City/County Association of Governments (2040)

2020-2024 Strategic Plan. San Mateo County Transportation Authority

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*Projections 2040. A*ssociation of Bay Area Governments; Metropolitan Transportation Commission (2017)

Regional Transportation Plan (Plan Bay Area 2040). Metropolitan Transportation Commission (2017)

San Mateo Countywide Transportation Plan 2040. City/County Association of Governments (2017)

State Highway System Congestion and Safety Assessment Update 2019. City/County Association of Governments and San Mateo County Transportation Authority (2019)

APPENDIX B

Goals and Evaluation Metrics Memorandum

Technical Memorandum: Policy Guidelines, Evaluation Metrics, and Project Evaluation Process for Short Range Highway Plan

Final

March 5, 2021

Prepared for:

San Mateo County Transportation Authority

Prepared by:

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1.0 INTRODUCTION

The purpose of this memorandum is to outline the proposed project evaluation process recommended for development of the Short Range Highway Plan (SRHP). The memo addresses the policy foundations, selection of technical metrics, and development of a scoring rubric for candidate projects.

2.0 PURPOSE OF THE STRATEGIC PLAN

The San Mateo County Transportation Authority (TA) Strategic Plan for the years 2020-2024 forms the backbone of the policy guidance for development of the SRHP. This five-year planning document, developed with extensive public outreach and stakeholder input, addresses the policies and procedures for administering the expenditure of funds collected under Measure A and Measure W.

The policy framework developed as part of the Strategic Plan process identifies program participants, including identification of eligible project sponsors, and recommends approaches to project selection. For the competitive Highways programs, the Strategic Plan calls for the updating of the Short Range Highway Plan with a new Capital Improvement Program and adds a TDM subcategory. As part of the SRHP update, new projects of countywide significance should be identified.

To aid in project evaluation and development of the SRHP update, the Core Principles associated with Measures A and W were examined for applicability to each funding program category and assigned a weighting or level of significance. The specific evaluation criteria and accompanying scoring rubric, as documented in the Strategic Plan Appendices, form the basis for the project evaluation process and technical metrics described in this memo.

3.0 ESTABLISHED POLICY GUIDANCE

3.1 Measure A Goals

Measure A policy guidance is contained in the 2009-2033 Transportation Expenditure Plan (TEP). In addition to designating funding percentages for the six program categories, the TEP lays out goals and objectives for the Measure A programs as listed below.

Goal 1. Reduce Commute Corridor Congestion

A. Improve mass transit serving the County through investments in Caltrain, BART, ferries and local shuttle services.

B. Construct key highway projects which remove bottlenecks in the most congested commute corridors as indicated by engineers and confirmed by public opinion.

C. Provide funding for supplemental countywide highway projects determined to be critical for congestion reduction.

D. Implement information technologies to optimize the efficiency of the transportation

system.

E. Provide incentives for employers to continue and expand their financial support for commute alternatives.

Goal 2. Make Regional Connections

A. Improve Caltrain's Baby Bullet service as an alternative to driving on Highway 101 along the Peninsula.

B. Provide San Mateo County's station and route improvements for the Dumbarton rail line connection with Alameda County.

C. Provide financial assistance as SamTrans' local match for capital investments and operating expenditures associated with the existing San Mateo County/SFO BART Extension.

D. Provide financial assistance as local match funds for cost-effective ferry service to South San Francisco and Redwood City

Goal 3. Enhance Safety

A. Construct roadway under and overcrossings (grade separations) along the Caltrain and Dumbarton rail lines in San Mateo County.

B. Provide safe paths for bicyclists and pedestrians.

C. Improve or maintain local streets, roads and other transportation facilities.

Goal 4. Meet Local Mobility Needs

A. Provide adequate paratransit service for eligible seniors and people with disabilities through the Redi-Wheels and other accessible services administered by SamTrans.

B. Improve local shuttle services to provide a viable option to the private automobile for local trips, and to meet the needs of transit dependents.

C. Provide an assured source of funding to Cities and the County for local street and road improvement and maintenance and to meet the unique transportation needs of each community.

3.2 Measure W Core Principles

Measure W policy guidance is contained in the San Mateo County Congestion Relief Plan. This Plan identifies the program categories and percentage split of tax revenues that are to be implemented with guidance from the eleven Measure W Core Principles. These are listed below.

1. Relieve traffic congestion countywide
2. Invest in a financially sustainable public transportation system that increases ridership, embraces innovation, creates more transportation choices, improves travel experience, and provides quality, affordable transit options for youth, seniors, people with disabilities, and people with lower incomes
3. Implement environmentally-friendly transportation solutions and projects that incorporate green stormwater infrastructure and plan for climate change
4. Promote economic vitality, economic development, and the creation of quality jobs
5. Maximize opportunities to leverage investment and services from public and private

partners

6. Enhance safety and public health
7. Invest in repair and maintenance of existing and future infrastructure
8. Facilitate the reduction of vehicle miles traveled, travel times, and greenhouse gas emissions
9. Incorporate the inclusion and implementation of complete street policies and other strategies that encourage safe accommodation of all people using the roads, regardless of mode of travel
10. Incentivize transit, bicycle, pedestrian, carpooling, and other shared-ride options over driving alone
11. Maximize potential traffic reduction potential associated with the creation of housing in high-quality transit corridors

3.3 2020-2024 Strategic Plan Evaluation Criteria

As mentioned above, project evaluation criteria for the highway program along with core principle weightings were developed as part of the Strategic Plan. The evaluation criteria and core principle weightings derived from the goals and core principles in the Measure A and Measure W programs.

The process of developing the evaluation criteria and weightings received considerable input from both the Stakeholder Advisory Group (SAG) and the Technical Advisory Group (TAG). Adding to an initially suggested set of criteria generated by the TA staff, the advisory group members generated hundreds of potentially relevant criteria. These were refined through a series of facilitated breakout sessions. Board Ad Hoc members, TA staff, and consultants also contributed significant input to the process which resulted in the criteria listed in Table 1.

Although the Strategic Plan process resulted in a policy framework for administering the Highway programs, some details have been left for development as part of the SRHP update. These details include the following:

- While the Strategic Plan provides the criteria and scoring rubric, it does not specify the exact technical metrics or data sources that will be used in applying the scoring rubric.
- The Strategic Plan does not detail the process for identifying new projects to address known congestion or safety needs.
- The Strategic Plan calls for identification of highway projects of countywide significance as part of the SRHP update but does not specify exactly how these projects will be identified.

All these matters must be addressed by the SRHP update and are included in the SRHP goals below.

4.0 Plan Goals

4.1 Short Range Highway Plan Goals:

- Assist in long-term policy guidance and financial planning for highway projects
- Develop when feasible, a quantitative assessment of how projects advance the goals and core principles
- Define how to determine projects of countywide significance
- Establish a list projects and an investment policy for projects of countywide significance
- Develop a list of potential projects where current congestion and safety needs are not being addressed
- Create an unconstrained 10-year CIP that addresses known safety and congestion issues

5.0 Eligibility and Significance

The **Measure A Highway Program** consists of two subprograms:

- Key Congested Areas (KCA) – this category consists of specific projects that are defined in the Measure A TEP.
- Supplemental Roadway (SR) Projects – This category includes a partial list of candidate projects that are defined in the Measure A TEP. Sponsors may propose additional projects through the project selection process. Projects may be located on local, collector, arterial, or state route roadways in San Mateo County.

The Call for Projects process will continue for Measure A projects with a focus on the Measure A Highway Pipeline projects.

The **Measure W Countywide Highway Congestion Improvements** program are for highway projects throughout the County that provide congestion relief; reduce travel times; increase person throughput; improve highway and interchange operations, safety, and access; and deploy advanced technologies and communications. The focus is on the state highways and interchanges but projects that alleviate congestion on connecting arterial streets are also eligible.

5.1 Projects of Countywide Significance and Sponsors

The Strategic Plan emphasized the role of the TA in identifying projects of countywide significance since local jurisdictions may have limited resources to implement large regional highway projects. Examples of countywide significance include the San Mateo US-101 express lanes and the US-101/SR-92 interchange.

The Strategic Plan also recommends that the TA consider setting aside funding for projects of countywide significance, striking a balance with local needs as part of the SRHP/CIP update. This implies a screening phase of project evaluation, where projects are designated as having countywide significance or not and a separate evaluation process (i.e., projects of countywide significance are compared to one another but not to local projects). Therefore, the definition of projects of countywide significance is of critical importance.

Projects of countywide significance may be identified by answering the following questions. Firstly, does the project:

- Connect two freeways or serve as a state highway facility that provides a connection between a freeway and a state highway facility?

If the answer to this first question is yes, then, does the project:

- Serve a significant amount of through traffic?
- Significantly improve access to a major activity center?
- Serve a significant amount of inter-county traffic?
- Significantly improve connections between two or more geographic areas of county?

Projects garnering at least two affirmatives to the four questions above are deemed of countywide significance. This methodology can be initially applied in a more qualitative fashion when projects are in an early phase of development and can be applied more quantitatively as projects progress. The seven projects of countywide significance have been identified applying this screening methodology are listed below while the full methodology is documented in Appendix A.

Projects of Countywide Significance

- SR 92 from US 101 to I-280: This project involves widening SR 92 from US 101 to I-280. It is currently in the preliminary planning stages.
- US 101/Woodside Road (SR 84) Interchange Project: Located in Redwood City, this project involves significant operational improvements to the interchange, and improved pedestrian and bicycle access for east-to-west movements across US 101. Final engineering design is nearing completion.
- US 101 Express Lanes from the Santa Clara County line to I-380: It includes conversion of existing HOV lanes to express lanes, and construction of new express lanes. The project is currently under construction.
- US 101 Managed Lanes North Project from I-380 to the San Francisco County Line: Converts the inside travel lane in each direction to a managed lane and includes outside widenings for auxiliary lanes. The project is in the planning stage.
- US 101 / SR 92 Interchange Area Improvements Project: Provides short-term operational improvements to improve freeway-to-freeway ramp connectors and improve traffic safety and mobility in the vicinity of the interchange. The project is in the planning stage.
- US 101 / SR 92 Direct Connector Project: Develop direct connectors from westbound SR 92 to northbound and southbound to the US 101 express lanes. The project has completed the initial planning phase.
- Roadway Facility Improvements between US 101 and the Dumbarton Bridge (SR 84): Improve bus and carpool connections from the Dumbarton Bridge to US 101, including grade separations, direct connectors to express lanes, and connectors to Marsh Road, Willow Avenue, and/or University Avenue. The project is in the planning stage.

5.2 Local Projects and Sponsors

Measure A Supplemental Roadway projects may reduce congestion and improve safety on local, collector, arterial or state routes. While the focus of the Measure W Countywide Highway

Congestion program is state highways, locally significant projects may be proposed to improve safety or access to the state highway system. Examples of projects of local significance could include the SR-1 Mid Coast congestion, throughput and safety improvements, the SR-1/Manor Drive overcrossing project, or the I-280/John Daly Boulevard Overcrossing bicycle and pedestrian accommodations.

5.3 Potential Needs without Identified Projects or Sponsors

In addition to project needs that have already been generated, the TA conducted a gap analysis to identify areas on the state highway system with performance issues that are not currently being addressed or studied through the project inventory. The analysis utilized data from C\CAG's *State Highway System Congestion and Safety Performance Assessment* and is documented in Appendix B.

The gap analysis has identified 23 roadway segments with at least one notable performance issue and no current project, including nine segments with three or more observed gaps. Some of the identified gaps are associated with feasibility issues that cannot be easily addressed or might be incompatible with local policies or other locally planned projects. It was determined that only the nine segments with three or more performance issues should be eligible for the use of highway program funds to conduct an initial planning or feasibility study. This will help to focus limited available future funding to address areas where there may be more significant highway performance deficiencies. The nine segments eligible to apply for highway program funding are listed below.

Identified Gap Analysis Segments Eligible for Funding:

- Interstate 280 from Washington Street (Daly City) to Interstate 380 (San Bruno)
- SR 35 from SR 84 to Santa Clara County line
- SR 84 from SR 35 to SR 1
- SR 92 from US 101 (San Mateo) to Alameda County line (Foster City)
- SR 82 (El Camino Real) from San Francisco County line (Daly City) to San Pedro Road (Daly City)
- SR 82 from Poplar Avenue (San Mateo) to SR 92 (San Mateo)
- SR 82 from Hillsdale Avenue (San Mateo) to san Carlos Avenue (San Carlos)
- SR 82 from SR 84 (Redwood City) to Atherton Avenue (Atherton)
- Sr 82 from Atherton Avenue (Atherton) to Santa Clara County line

The next steps in this process are for SMCTA to review which roadway segments warrant further consideration for possible corridor studies, which of those studies are of countywide significance, and which should be added to the project inventory.

In some cases, a sponsor may be identified for the new projects but in others, the TA can use technical assistance funds to conduct project evaluations or assist local sponsors in evaluating potential projects.

5.4 Funding Guidelines

The previous SRHP provided guidance on funding projects. These principles and policy guidelines, adapted for the SHRP under development, are listed below:

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.
5. *Priority should be given to the projects with the greatest impact.* Rather than allocating funding across different project categories or phases of development, the entire inventory of projects should be assessed as a whole.
6. *Project evaluation and determination of merit should be tied to the criteria listed in the Strategic Plan.*
7. *Projects must remain active to keep allocated funds*. If there is no substantial activity on the project for five years or more, reallocation of funds to other active projects will be considered.
8. *The development of a CIP will be informed by a biannual Call for Projects.* The framework for decision making for Measure A and Measure W projects will utilize the funding policies and guidelines outlined above.

6.0 Selection of Technical Metrics and Development of Scoring Rubric

At least one technical metric was identified for each criterion listed in the Strategic Plan. Metrics were selected to:

- Closely correlate or reflect the 2020-2024 Strategic Plan criteria
- Be readily available based on project description, from typical project studies or data from existing studies such as the State Highway System Congestion and Safety Performance Assessment.

The proposed technical metrics are also listed in **Table 1**. The criteria are organized under thematic categories of Need, Effectiveness, Sustainability, Readiness, and Funding Leverage.

Because the relative weight for each criterion and associated technical metric was defined by the Strategic Plan, it was only necessary to map the allotted points for each metric over the expected range of values for each technical measure. A variety of research and examples were consulted to aid in this process. The resulting scoring rubrics are attached in Appendix C of this report**.**

PROJECT EVALUATION

Table 1. Proposed Technical Metrics

	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
	Need	**22**		
N-1	Severity of current and projected congestion	5	Peak hour delay index Pct Free flow Speed Peak hour V/C	State Highway System Congestion and Safety Performance Assessment; CCAG Model Run for "No Build" Condition; INRIX Analytics from MTC data purchase
N-2	Need to improve access and connections to jobs, housing, transit hubs and other high activity centers, supporting existing economic activity and spurring new economic development in the vicinity	5	Number of activity centers served	1/2 mile buffer around facility, GIS mapping of activity centers and project limits
N-3	Project recognized in adopted statewide, regional, county or local planning and fund programming documents	5	Project's inclusion in plan(s)	Plan documents
N-4	Identified safety issue (e.g., documented collision history due to site conditions that is higher than average for the facility type)	4	Crash rate per million VMT	Crash data (SWITRS or Congestion and Safety Performance Assessment), AADT (PeMS/Census/INRIX), Length of segment, No. of Lanes
N-5	Regional/**Countywide significance,** including where applicable, location and relevance on the State Highway Congestion & Safety Performance Assessment for San Mateo County	3	Project extent and location information Select link analysis of project traffic	Refer to Appendix A
	Effectiveness	**37**		
E-1	Potential increase in person through-put	6	Average Vehicle Occupancy Support for transit mode shift	TBD
E-2	Ability to relieve congestion/performance improvement (e.g., reduces/ eliminates bottleneck)	5	Project addresses interchange bottleneck Improvement in peak hour delay index Improvement in pct. free flow speed	Project description and location; analysis from environmental phase
E-3	Value: Benefit relative to the amount of funding requested (high impact, low cost - "bang for the buck")	5	Total Project Cost to benefit ratio Cost per GHG/VMT/time reduction	Project inventory and evaluation tool
E-4	Degree to which project reduces GHG emissions and improves air quality	5	Percent reduction in GHG and other emissions	SB1 Emissions Calculator; No Build and Build VMT
E-5	Potential VMT reduction~~-per capita~~[1]	5	Percent reduction in VMT	Project description and plan documents

Notes: Evaluation criteria and scoring from SMCTA Final Strategic Plan 2020-2024, Appendix E; technical measures from DKS Associates.

1) Caltrans guidance specifies that transportation projects should be analyzed using net VMT impact (see *Transportation Analysis under CEQA* and *Transportation Analysis Framework*, first editions, September 2020).

PROJECT EVALUATION

Table 1. Proposed Technical Metrics

	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
E-6	Ability to address safety issue (e.g., project improves site conditions to reduce potential for collisions)	4	Safety countermeasure effectiveness	Project description; USDOT Crash Modification Factors Clearinghouse
E-7	Potential travel time savings	4	Total corridor travel time savings Travel time index	Comparison of future scenarios generated with an operational or travel demand model (C/CAG model) for project corridor from planning or environmental study
E-8	Demonstrates coordination with adjacent projects/ integration of inter-related projects	3	Degree of project coordination	Project description or inventory
	Sustainability	**16**		
S-1	Project accommodates multiple transportation modes (e.g., pedestrian & bicycle access as well as transit infrastructure) where contextually appropriate and to the extent feasible (Complete Streets), including infrastructure for transit (e.g., express lanes, bus only lanes)	5	Number of different modes accommodated	Project scope and description
S-2	Project is primarily an operational improvement (e.g., safety or ITS) rather than infrastructure expansion (e.g. adding general purpose lanes)	4	Split between operational improvement elements and infrastructure expansion	Project Inventory and Project Scope
S-3	Impact project has on low income, transit dependent and or other vulnerable populations	3	Whether beneficial impact occurs to COC or location with CES > 75% or communities with low income and high transit dependency	GIS data layer of C\CAG Equity Focus Areas
S-4	Innovative low environmental impact/green infrastructure, including resiliency elements to address climate change	3	Incorporation of resilience and impact reduction/green infrastructure elements	Project document
S-5	Project accounts for long term repair/maintenance needs (e.g., uses materials with long life cycles, low maintenance costs & has a funding plan for maintenance)	1	Whether the project accounts for long term repair/maintenance needs	Project document

Notes: Evaluation criteria and scoring from SMCTA Final Strategic Plan 2020-2024, Appendix E; technical measures from DKS Associates.

PROJECT EVALUATION

Table 1. Proposed Technical Metrics

	Highway Program Evaluation Criteria	Points	Technical Measure(s)	Data Source
	Readiness	**15**		
R-1	Clear and complete proposal	3	Whether proposal is complete and not missing any information	Project inventory
R-2	Project status and schedule	3	Stage in process from PID to PSE	Project inventory
R-3	Ease and speed of implementation	3	Right of Way status Permitting process status	Project inventory or document
R-4	Demonstrates stakeholder support/community engagement	3	Documented support from stakeholders Public engagement activities Involvement of non-sponsor stakeholder	Documents from project sponsors
R-5	Has a credible cost estimate and funding plan	3	Phase-wise funding information Full funding availability Documentation to show matching funds	Project inventory
	Funding Leverage	**10**		
FL-1	Percent of matching fund contribution	8	Match percentage	Project inventory
FL-2	Private sector contribution, including public/ private partnerships	2	Private sector contribution as percent of total project cost	
	Total	**100**		

Notes: Evaluation criteria and scoring from SMCTA Final Strategic Plan 2020-2024, Appendix E; technical measures from DKS Associates.

7.0 Evaluation Process

7.1 Key Issues

The project evaluation process must accommodate projects that are in broadly varying stages of development, from project concepts identified by the gap analysis, to planning studies, environmental clearance, and the ROW acquisition/engineering/construction stage. There are also projects that can be characterized as “finishing up” such as landscaping for a previously completed highway project. The Strategic Plan identifies a need to balance delivery of projects already in the funding pipeline with new projects.

As mentioned in the Strategic Plan, the quantitative data necessary to evaluate project effectiveness may not be readily available until a project has at least reached a preliminary planning phase. The Strategic Plan also mentions the process established under the Measure A Highway Program that provided greater weight to the evaluation criteria under the Need category and less weight to criteria under the Effectiveness category for projects that have yet to be environmentally cleared. Projects in the initial phases of development, such as preliminary planning studies and project initiation documents, could be evaluated only on the Need criteria for the purposes of the SHRP. Funding Leverage and Readiness would also be evaluated for these early phase projects during the Call for Projects process.

In addition, projects of countywide significance must be balanced with projects that are locally important (the Measure A goals address both regional connectivity and local mobility). A key question here is the definition and measurement of “countywide significance”. The attached scoring rubric proposes several metrics that can be used to identify projects of countywide significance. These metrics could potentially be used as a screening step to flag projects of countywide significance so that these projects can be evaluated in a separate pool from locally significant projects.

In summary, the following questions need to be answered prior to finalizing the project evaluation process:

1. Should the evaluation process use different scoring or weighting algorithms depending on the phase of a project (see discussion in the section below)?

2. Should projects of countywide significance be flagged and evaluated separately from locally significant projects or should the designation of countywide significance simply be another scoring criterion? The evaluation process described in the next section proposes that a more qualitative criteria be used for the initial screening and that projects in more advanced phases use a more quantitative method to measure the degree of countywide significance.

In addition, there are various metrics in the scoring rubric that will need further refinement and specification of methodologies. These items include, for example, the need for Caltrain and SamTrans input on scoring projects for potential transit mode shift (E-1), confirmation of VMT

scoring, and definition of data elements that are required for a proposal to be considered complete.

7.2 Project Evaluation Process

Project evaluation for the SRHP/CIP update consists of using the evaluation criteria and metrics to compare the relative need and merit of the projects in the inventory. At this stage, projects will not receive published scores or rankings and the evaluation process is not intended to guide programing decisions. Rather, the project evaluation process is intended to inform project sponsors about how to improve their projects, if necessary, in preparation for the Call for Projects.

The basic project evaluation process consists of calculating a score for each project, consistent with the scoring rubric presented in the appendix. Each project starts with a score of zero and accumulates points in the categories of need, effectiveness, sustainability, project readiness, and funding leverage, up to a maximum of 100. This process will be automated in the spreadsheet tool.

As previously mentioned, projects vary widely in their status and phases. Projects in the initial phases are more readily assessed according to need where projects that have progressed to environmental clearance or design can be evaluated by effectiveness. Table 2 lists the project phase categories from the project inventory tool and identifies which evaluation criteria categories are most applicable.

There are two options for allowing for the varying stages of project development in the project evaluation tool:

- Option 1 – Score all projects on a scale of 0-100, recognizing that projects in the early phases will likely have low scores for several categories. Only compare projects within the same tier of project phase (see Table 2).
- Option 2 – Have the tool rescale the total possible points according to project phase. For example, projects in the first tier would only be scored on Need. Projects in the fifth tier would be scored on readiness and funding leverage. The rescaling would take the core principles weightings from the Strategic Plan for all applicable criteria and rescale to 100.

The evaluation process and tool are intended to provide the analyst with multiple views of the project inventory. The project evaluation tool will automate the scoring, sorting, and ranking of projects and generate various reports to facilitate preparation of the SRHP/CIP and provide feedback to project sponsors.

Table 2. Applicability of Evaluation Criteria by Project Phase

Tier	Project Phase	Example from Inventory	Criteria Groupings				
			Need	Effec-tiveness	Sustain-ability	Readi-ness	Funding Leverage
1	Not initiated	Kelly Avenue & Highway 1 Safety Improvement Project	●				
	Approval needed		●				
	Preliminary Planning Study	Geneva Avenue Extension	●				
	Project Initiation Document	US 101 Candlestick Point Interchange E nvironmental Studies	●				
	Preliminary Environmental	US 101/Sierra Point Pkwy Interchange replacement	●				
2	Environmental		●	○	○	○	○
3	Preliminary Engineering	SR 1 (Mid Coast) Congestion, Throughput & Safety Improvements	●	●	●	●	●
	Final Design (PS&E)	U.S. 101/ WOODSIDE ROAD (SR 84) INTERCHANGE PROJECT	●	●	●	●	●
4	PEER	SR 1 -Gray Whale Cove	●	●	●	●	●
	ROW Engineering		●	●	●	●	●
	Design Services. During Construction		●	●	●	●	●
	Construction	U.S. 101 EXPRESS LANES PROJECT (SCL/SM Co Line to I-380)	●	●	●	●	●
5	Project Closeout		Not Applicable (Projects not evaluated)				
	Complete	U.S. 101/ HOLLY STREET INTERCHANGE PROJECT					
6	Conceptual Landscape Design	U.S. 101 / WILLOW ROAD INTERCHANGE PROJECT - LANDSCAPING	Not Applicable (Projects not evaluated)				
	Landscape Design	U.S. 101 / BROADWAY INTERCHANGE PROJECT					
	Plant Establishment Period						

Legend: ●: All criteria applied; ○: Criteria subject to data availability

Appendix A – Identifying Projects of Countywide Significance

Stantec

e-Memo

To:	Peter Skinner SMCTA	From:	Martin R. Engelmann Stantec, Walnut Creek
File:	SharePoint - Correspondence	Date:	January 7, 2021

Reference: Identifying Projects of Countywide Significance

BACKGROUND

Measure W assigns 22.5 percent of sales tax revenues to "Countywide Highway Congestion Improvements." The SMCTA Strategic Plan identifies a requirement for "Identification of highway projects of countywide significance and possibly determining an appropriate level of funding to be set-aside for these projects, if appropriate and desired." [SMCTA Strategic Plan, 2020-2024, p.55]. A key task included in the update to the Short Range Highway Plan (SRHP) is to define the criteria that can be applied to identify which projects are of Countywide Significance.

For the SRHP 2021 update, SMCTA staff worked with the consultant team during Fall of 2020 to conduct an inventory of highway projects that could be eligible for Measure A and/or W funding. In consultation with the C/CAG TAC, SMCTA staff worked with local project proponents to develop the inventory. This effort resulted in the identification of 27 projects for consideration.

Working with SMCTA staff, the SRHP consultant team was tasked with developing criteria and a rating system for identifying projects of Countywide Significance. This memo summarizes the criteria that was developed, how it was applied, and the resulting list of projects that meet the criteria.

CRITERIA FOR IDENTIFYING PROJECTS OF COUNTYWIDE SIGNIFICANCE

Through discussions with SMCTA staff, the following criteria were developed:

Initial Screening Criteria:

All projects must meet the following test:

> ***Connects two freeways or serves connections between a freeway and a state highway facility***.

Projects that do not meet this criterion are not eligible for further consideration.

Evaluation Criteria:

Projects that meet the screening criteria, are then evaluated based on the following:

1. **Serves a significant amount of through traffic** – with through traffic having neither an origin nor a destination in the home jurisdictions where the project is located.
2. **Significantly improves access to major activity center(s)** – activity centers include the San Francisco International Airport, and major ports, such as the Port of Redwood City.

3. **Serves a significant amount of inter-county traffic** – inter-county traffic consists of traffic that enters and/or leaves the County.

4. **Significantly improves connections between two or more geographic areas of the County** – geographic areas are roughly defined as north, south, east, and west.

Projects must meet two of these four criteria to be eligible for designation as a project of Countywide Significance.

ANALYSIS & RESULTS

Based upon the above criteria, staff evaluated each of the projects to determine which projects are eligible. This analysis was conducted qualitatively, based upon staff's knowledge of the surrounding area, and a review of available published studies. The attached table shows the list of projects that were evaluated, and whether the project meets the criteria.

The following projects meet the eligibility requirements:

- SR 92 from US 101 to I-280: This project involves widening SR 92 from US 101 to I-280. It is currently in the preliminary planning stages.

- US 101/Woodside Road (SR 84) Interchange Project: Located in Redwood City, this project involves significant operational improvements to the interchange, and improved pedestrian and bicycle access for east-to-west movements across US 101. Final engineering design is nearing completion.

- US 101 Express Lanes from the Santa Clara County line to I-380: It includes conversion of existing HOV lanes to express lanes, and construction of new express lanes. The project is currently under construction.

- US 101 Managed Lanes North Project from I-380 to the San Francisco County Line: Converts the inside travel lane in each direction to a managed lane, and includes outside widenings for auxiliary lanes. The project is in the planning stages.

- US 101 / SR 92 Interchange Area Improvements Project: Provides short-term operational improvements to improve freeway-to-freeway ramp connectors and improve traffic safety and mobility in the vicinity of the interchange (planning phase).

- US 101 / SR 92 Direct Connector Project: Develop direct connectors from westbound SR 92 to northbound and southbound to the US 101 express lanes. The project has completed the initial planning phase.

- Roadway Facility Improvements between US 101 and the Dumbarton Bridge (SR 84): Improve bus and carpool connections from the Dumbarton Bridge to US 101, including grade separations, direct connectors to express lanes, and connectors to Marsh Road, Willow Avenue, and/or University Avenue (planning phase)

SMCTA Project No.	Project Name	Description	Sponsor	Pipeline Project	Measures of Countywide Significance					Meets Screening 1 and Screening 2 Threshold for Countywide Significance?	Notes
					Screening 1: Yes/No - Must Meet Criteria (Yes). If not (No), project not eligible as countywide signficant.	Screening 2: Must meet at least 2 signficance criteria.					
					Connects two freeways or serves connections between a freeway and a state highway facility	Serves significant amount of through traffic	Significantly improves access to a major activity center	Serves a significant amount of inter-county traffic	Significantly improves connections between two or more geographic areas of county		
TA-000625	US 101 Candlestick Point Interchange Environmental Studies	The project will involve a 4 to 6 lane overcrossing of US 101 with full all directional interchange. Roadway would contain light rail median reservation, bike and pedestrian facilities. It would connect with the Geneva Ave. extension and merge with the existing Harney Wy. east of US 101.	Brisbane	No	No			x		No	This is a new interchange connecting to an arterial extension (Geneva Ave.) that is not yet determined to be feasible. I don't think it changes 101 throughput. Might add to weaving issues if it is indeed a new interchange.
TA-000710	Geneva Avenue Extension	This project will include a 4 to 6 lane arterial roadway with bike lanes, on-street parking and sidewalks on both sides, and a median-running light rail reservation. There will be a grade separation with Caltrain tracks and with Tunnel Ave. with 23' vertical clearance.	Brisbane	No	No		x			No	Project would improve east-to-west arterial access to the Baylands development project.
TA-000733	SR 92 from US 101 to I-280	Widen SR-92 from I-280 to US-101. PSR-PDS was completed by the TA and Caltrans in 2001.	San Mateo	No	Yes	x			x	Yes	
TA-000768	U.S. 101/ WOODSIDE ROAD (SR 84) INTERCHANGE PROJECT	Redwood City: Route 101 from 0.5 mile south of Route 101/84 Separation to Maple Street Overcrossing and on Seaport Boulevard and Route 84 from Route 101/84 Separation to Spring Street: Widen Woodside Road to six lanes (three in each direction) plus turn pockets, reconstruct all ramp connections between Woodside Road and US 101, construct directconnect flyover ramps connecting to Veterans Boulevard, and construct additional pedestrian and bicycle facilities throughout the Project area and improve local intersections on Woodside Road and Seaport Boulevard. The Project would not change the alignment or operations of US 101.	Redwood City	Yes	Yes		x		x	Yes	> Connects US 101 and SR 84. > Serves as the primary east/west route between south county and mid county while also connecting the Coastside to Highway 101 via SR-84 > Provides improved access to Redwood City Port. > Provides safety and operational improvements at interchange proper. > Improves ped/bike access from east to west for crossing US 101.
TA-000791	U.S. 101 EXPRESS LANES PROJECT (SCL/SM Co Line to I-380)	Add express lanes on 101 in San Mateo County between the Santa Clara/San Mateo County Line and I-380	SMCTA	Yes	Yes	x	x	x	x	Yes	Improves access to SFO.
TA-000792	SR 92/South Delaware Interchange Improvement	Construct improvements along SR-92 between SR-82 and US-101 to improve safety and operations at the SR-92/Delaware interchange, and construct new roadway(s) in the City of San Mateo to provide additional access between Delaware and SR-82 *for local traffic* .	San Mateo	Yes	No					No	Project would provide operational improvments on SR 92 at the Delaware Street interchange.
TA-000793	SR 1 -Gray Whale Cove	Safety and mobility improvement to relieve traffic congestion, improve throughput, and enhance safety for motorists, bicyclists and pedestrians along a 7-mile stretch of Highway 1 from Gray Whale Cove to Miramar. Scope of project includes Permit Engineering Evaluation Report (PEER) and Encroachment Permit phases.	SM County	No	No	x		x	x	No	
TA-000794	SR 1 (Mid Coast) Congestion, Throughput & Safety Improvements	Two single-lane roundabouts in Moss Beach along SR 1 at Cypress Avenue and California Avenue have been chosen as the focus points for improved traffic control along the Midcoast section of SR 1.	SM County	No	No	x		x	x	No	
TA-000795	U.S. 101/ HOLLY STREET INTERCHANGE PROJECT	At Holly St/ US-101 Interchange: Widen east bound to north bound ramp to two lanes and eliminate north bound to west bound loop	San Carlos	Yes	No	x		x	x	No	Project was bid, construction started in late 2019, and project is nearing completion. If project is fully funded, it could be pulled from the evaluation.
TA-000796	I-380 Congestion Improvements	Project purpose is to improve safety and operation on I-380 and improve weaving around the El Camino Real interchange. Proposed improvements would include construction of collector-distributor roads, auxiliary lanes, local exit ramps and restriping to reduce congestion and improve traffic flow.	San Bruno	No	**Yes**			x		No	Mainline operational improvements at El Camino Real interchange could reduce congestion (check if this is a congested location). It's a hot spot, but does it meet the test? *I gave it a point for connecting I-280 to US-101. Also I imagine many use this route to get to SF County from San Mateo*
TA-000800	US 101/ University Avenue Interchange Improvements	Construction of pedestrian overcrossing	East Palo Alto	Yes	No					No	
TA-000801	U.S. 101/ PENINSULA AVE INTERCHANGE PROJECT	San Mateo: US-101 at Peninsula Ave and East Poplar Ave: Convert a partial interchange to a full interchange by adding new southbound on- and off-ramps on the west side of US-101 at Peninsula Ave., and closing the southbound on- and off-ramps on the west side of US -101 at East Poplar Avenue.	San Mateo	Yes	No					No	This project would move the southbound on/off ramps from Poplar Ave. north to Penninsula Ave. Primarily serves local traffic to/from Burlingame. Operational improvements to mainline US 101 are minimal.

TA-000803	U.S. 101 / PRODUCE AVENUE INTERCHANGE PROJECT	• New overcrossing over US 101. • Intersection improvements at 3 locations: Utah Ave. / South Airport Blvd; Utah Ave. / San Mateo Ave.; Airport Blvd./Produce Ave/San Mateo Ave. • Bicycle and pedestrian ADA compliant facilities • Accommodates future US 101 Managed Lanes project. • Accommodates future ramp improvements.	SSF	Yes	No		x			No	Project would improve access to SFO.
TA-000822	ROUTE 1 SAFETY AND OPERATIONAL IMPROVEMENTS PROJECT WAVECREST ROAD TO POPLAR STREET	New Signalized Intersection at Highway 1 and S. Main Street, 3 new pedestrian controlled crossings, bike box on Main street, modifications to NB right turn, landscaping and entry to City signs	Half Moon Bay	0	No					No	
TA-000823	ROUTE 1 SAFETY AND OPERATIONAL IMPROVEMENTS PROJECT MAIN STREET TO KEHOE AVENUE	Extend two lane in each direction, new signalized intersection and pedestrian controlled crossings at Terrace Ave, extension of Frontage Road to the new intersection at terrace Ave, bus stop improvements, new east side Class I ped/bike path and median/shoulder landscaping	Half Moon Bay		No	x				No	
TA-100302	U.S. 101 MANAGED LANES NORTH PROJECT (I-380 to SF/SM Co Line)	Implement Managed Lanes (ML) in each direction. Alternatives include (minimum) converting inside travel lanein each direction to managed laneand maintaining shoulder widthto the extent feasible or (maximum)adding a lane in each directionplus outside widening to accommodate auxiliary lanes where necessary. Modify under/over crossingsof existing structures as necessary.	TA/ C/CAG	Yes	**Yes**	x	x	x	x	Yes	US 101/i-380 connection to County line
TA-100318	U.S. 101 / SR 92 INTERCHANGE AREA IMPROVEMENTS PROJECT	The project will identify the short-term improvements to improve traffic safety and increase mobility at the vicinity of the US 101/ SR 92 interchange. The improvements include constructing an additional lane to westbound SR 92 to southbound US 101 connector ramp, modifying lane merge from US 101 connector ramps to eastbound SR 92, modifying southbound US 101 Fashion Island Boulevard exit ramp, and modifying the widening of US 101 Hillsdale Boulevard exit ramp.	TA/ C/CAG	Yes	**Yes**	x		x	x	Yes	
TA-100319	U.S. 101 / SR 92 DIRECT CONNECTOR PROJECT	Build Alternatives: • Alternative 1: US 101 / SR 92 managed lane direct connector from westbound SR 92 to northbound and southbound US 101 • Alternative 2: Reversible US 101 / SR 92 managed lane direct connector ramps	TA/ C/CAG	Yes	**Yes**	x		x		Yes	Addresses congestion at the interchange.
TA-100321	Route 1/Manor Drive Overcrossing Project	In Pacifica: Hwy 1 and Manor Drive I/C: Widen the existing overcrossing; Hwy 1 and Milagra: Construct a new on-ramp; Both Intersections: Install signals.	Pacifica	No	No	x			x	No	
Unassigned	I-280/John Daly Boulevard Overcrossing North Side Widening for Bicycle/Pedestrian Accomodation	Widen the north side of the John Daly Blvd/I-280 overcrossing to provide either a pedestrian/bike grade-separated connection or ongrade two-way separated bikeway connection to the Daly City BART station, a dedicated right-turn lane for the southbound I-280 off-ramp to westbound John Daly Blvd. and improvements to the intersection of John Daly Blvd/Junipero Serra Blvd to improve the operations, increase safety and promote alternate modes of travel along John Daly Blvd.	Daly City	No	No					No	Widening of overcrossing would primarily serve bicycle access to/from BART station.
Unassigned	I-380 Connection (via new Haskins Way Bridge)	The Project includes a new 3,600 ft. long roadway bridge over the bay inlet with four traffic lanes (two lanes in each direction) and a Bay Trail extension linking I-380/North Access Road and Haskins Way/East Grand Avenue. It provides a direct connection to the fast-growing East of 101 employement district from I-380, US-101, and I-280 via a presently underutilized freeway stub.	South San Francisco	No	No		x			No	Project does not directly access US-101 but does improve freeway access via a new artierial connection to a major biotech employment center.

Unassigned	ITS Improvements in Daly City, Brisbane, and Colma	Deploy ITS equipment, such as an interconnected traffic signal systems, closed circuit television (CCTV) cameras, trailblazer/arterial dynamic message signs, and vehicle detection systems, on local streets and state routes to proactively manage traffic diversion during freeway incidents, and to reduce congestion during normal operations.	C/CAG		No	x				No	Placement of improvements unknown
Unassigned	Kelly Avenue & Highway 1 Safety Improvement Project	Install high visibility crosswalks, lead pedestrian intervals, way finding directional signage, ADA ramps, sidewalk upgrades, corner safety island, intersection crossing markings, set-back bicycle crossing, and signal work if needed	Half Moon Bay	No	No					No	Local intersection improvement.
Unassigned	SR 82 (El Camino Real), Safety and Operational Improvements	Design and implement safety and operational improvements identified in the El Camino Real Corridor Plan. Modifications could include improvements that support high-quality transit service(bus bulbouts and bus queue jump lanes where right of way allows), signal operational improvements (adaptive signal control and restriction of left-turn movements during commute hours), safety improvements, removal of slip lanes, and intersection improvements.	Redwood City	No	No					No	Could be countywide signficant if improvements between SR 82 and SR 84 are made, otherwise it is a singular corridor improvement project.
Unassigned	SR 84 (Woodside Road), Safety and Operational Improvements	Conduct a Corridor Study of Woodside Road to evaluate potential enhancements that increase safety and reduce travel time through the corridor from Broadway to Alameda de las Pulgas. Potential modifications include signal operational improvements, additional traffic control, and intersection improvements.	Redwood City	No	No					No	Could be countywide signficant if improvements between SR 82 and SR 84 are made, otherwise it is a singular corridor improvement project.
Unassigned	US 101/Sierra Point Pkwy Interchange replacement and Lagoon Way extension	This project will replace a partial interchange and improve regional access. It will provide full connection with Lagoon Wy. extension.	Brisbane	No	No			x		No	
Unassigned	Roadway facility improvements between Highway 101 and Dumbarton Bridge	Provide reliable roadway facilities for express buses and high occupancy vehicles to reduce congestion, increase throughput, and reduce transportation impacts on the local community. Provide express lanes and grade separations/direct connectors, including analyzing options for express lanes from the Dumbarton Highway Bridge to US 101 Express Lanes, grade separation/direct connector(s) at Marsh Road, Willow Ave., and/or University Ave.	San Mateo C/CAG		**Yes**	x		x		Yes	Project would provide significant operational improvements to SR 84 between the bridge and US 101.
Total Number of Projects that meet the test:										**7**	

Appendix B –Gap Analysis

Stantec

Memo

To:	Peter Skinner SMCTA	From:	Martin Engelmann Stantec, Walnut Creek
cc:	Patrick Gilster, SMCTA	Date:	January 15, 2021

Reference: Short Range Highway Plan (SRHP) Gap Analysis

Stantec (consultant) is currently preparing the SRHP for SMCTA. The first phase of the SRHP involved conducting an inventory of highway projects that could be eligible for future funding through Measures A or W. Upon completion of the project inventory, SMCTA staff requested that Stantec conduct a "Gap Analysis" to determine whether the projects developed through the inventory would adequately address existing congestion and safety issues on major roadways. This memo documents the results of that analysis.

The purpose of the Gap Analysis is as follows:

- Identify areas on the state highway system with performance issues that are not currently being addressed or studied through the project inventory.
- Consider whether these unaddressed high-needs areas warrant the introduction of additional planning studies to the project inventory.
- Determine whether any of the new planning studies are eligible for funding through Measures A or W.

The Gap Analysis applies data from C/CAG's *State Highway System Congestion and Safety Performance Assessment* (January 2019) to identify road segments that experience congestion and/or safety issues. These locations were juxtaposed with the locations of the 30 highway projects recently identified in the SRHP project inventory. Through a qualitative and cursory review, consultant identified "observed gaps" as roadway segments with significant performance issues not in close proximity to a project.

A more detailed approach description is shown in Attachment A.

Criteria

The following criteria were used to identify gaps in project coverage:

- Total Vehicle Hours of Delay per Mile (VHD/Mile): Morning Peak Hour (8-9 a.m)
- Total Vehicle Hours of Delay per Mile (VHD/Mile): Evening Peak Hour (5-6 p.m)
- Travel Speed (Percent of Free Flow): Morning Peak Hour (8-9 a.m.)
- Travel Speed (Percent of Free Flow): Evening Peak Hour (5-6 p.m.)
- Worst 25 Segments based on Crashes per Mile

- Worst 25 Segments based on Crashes per Million Vehicle Miles Travelled
- Travel Time Reliability (Buffer Index): Morning Peak Hour (8-9 a.m.)
- Travel Time Reliability (Buffer Index): Evening Peak Hour (5-6 p.m.)

Figures 1 through 8 show the maps from the C/CAG Congestion and Safety Assessment Report that were used to evaluate each criteria. The location of projects identified in the Project Inventory are shown in blue. The locations where congestion or safety issues were identified, and no projects were found in proximity to those issue areas, are circled in brown.

Evaluation

Table 1 provides a breakdown of the evaluation process.

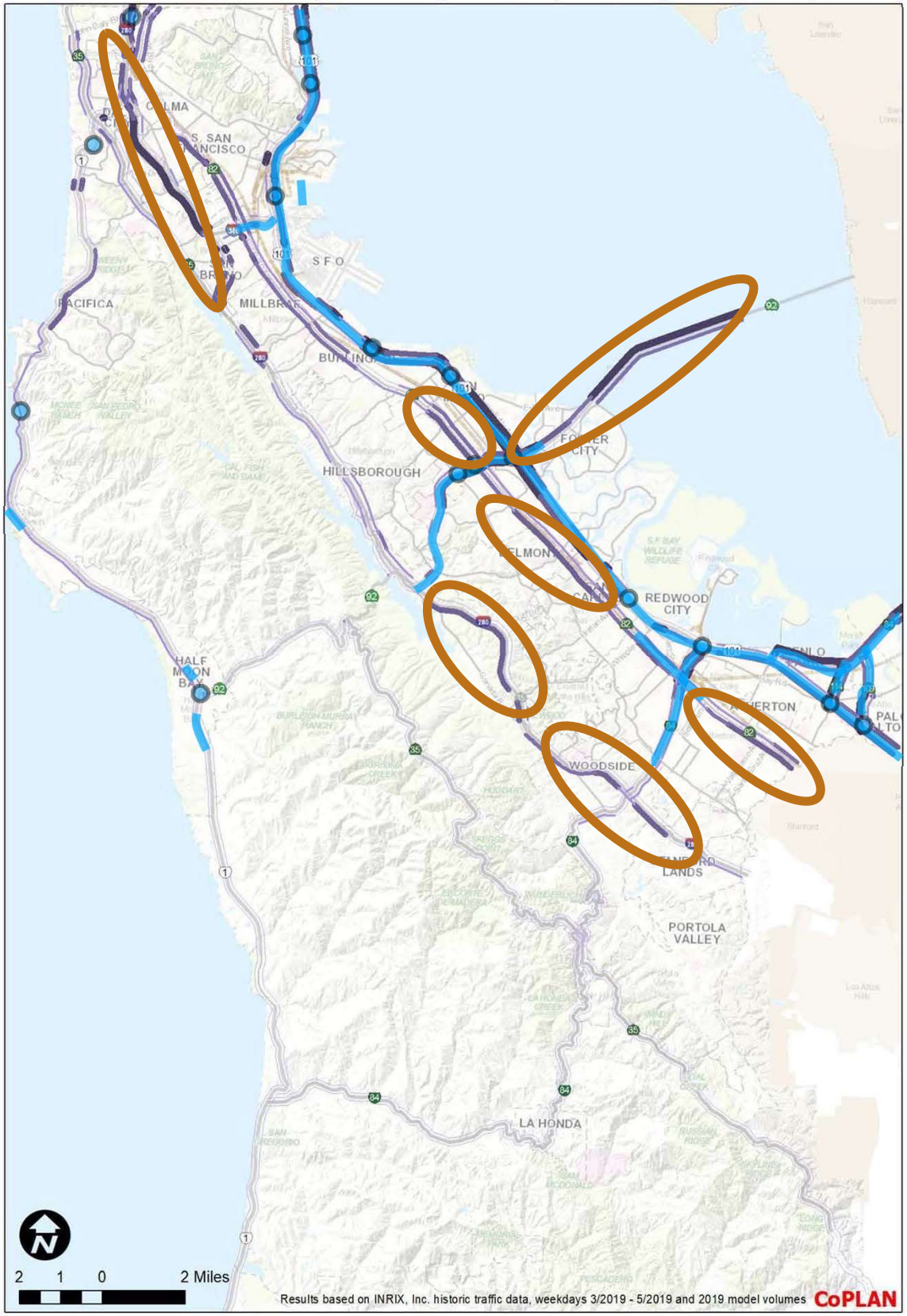
- 23 general roadway segments with at least one notable performance issue and without a current project were identified:
    - I-280 (5 segments)
    - SR 35 (4 segments)
    - SR 84 (2 segments)
    - SR 92 (2 segments)
    - SR 82 - El Camino Real (10).
- Nine roadway segments met the criteria for three or more observed gaps.
- Some of the road segments that meet the gap criteria, for example on SR 35 and SR 85, are adjacent to protected lands and are situated in difficult, mountainous terrain. Improvements to these road segments to address performance issue(s) may not be feasible.
- Other segments, especially those on SR-82 (El Camino Real), are adjacent to US 101, which has the managed lanes project under construction. Addressing performance issues on SR 82 would require consideration of the diversion of traffic to US 101, as well as consultation with local jurisdictions to study improvements in the context of locally planned projects, some of which involve Complete Streets.

Next Steps

- SMCTA to review the Gap Analysis and determine which roadway segments warrant further consideration for possible corridor studies.
- Once those corridor studies have been identified, a determination will be made whether the study is of “Countywide Significance,” and whether it should be added to the project inventory.

Figure 1

Total Vehicle Hours of Delay Per Mile (VHD/Mile): Morning Peak Hour (8-9 AM)

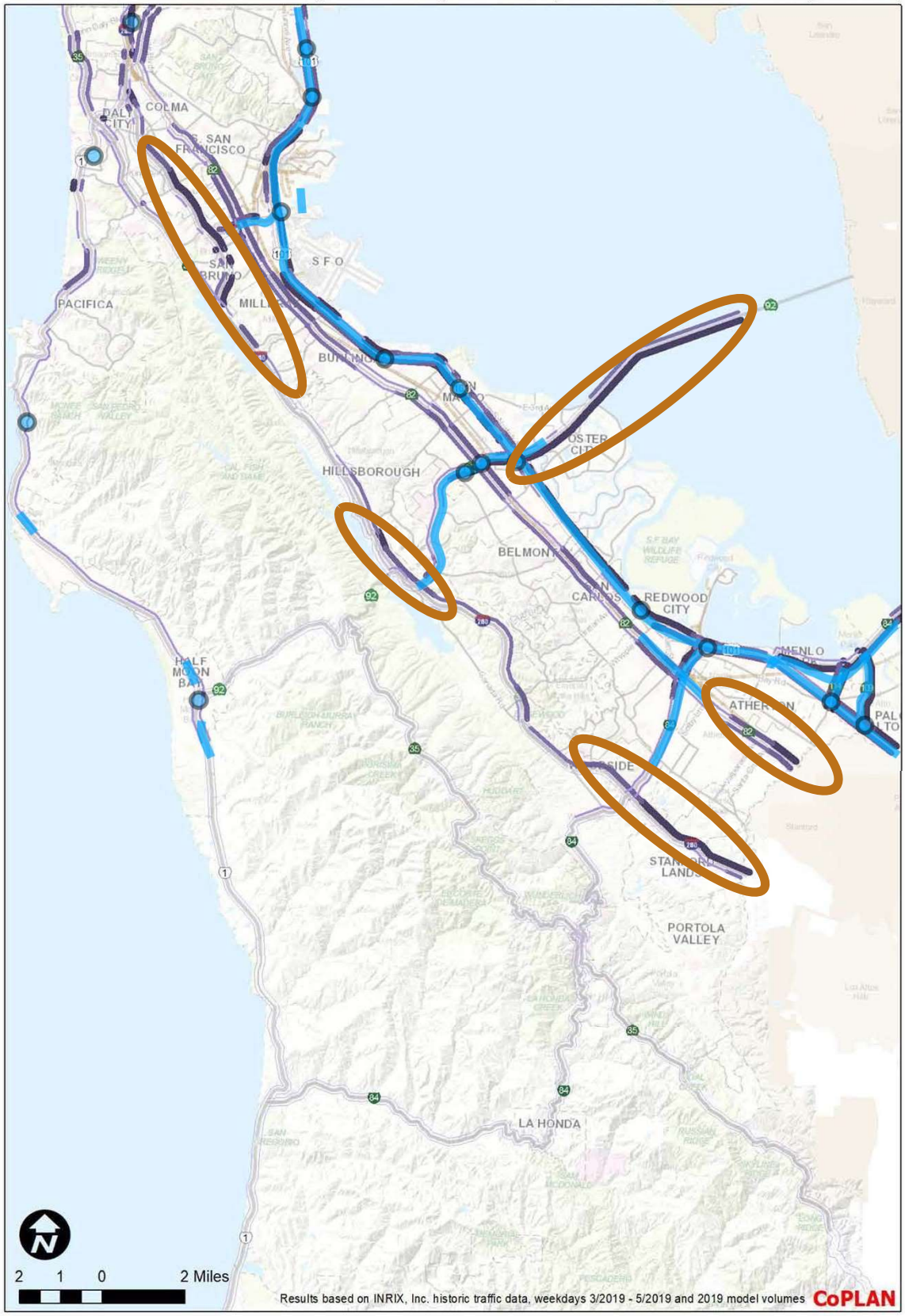


Legend

VHD/Mile 0 - 25 | 26 - 50 | 51 - 75 | 76 - 150 | 151+

Figure 2

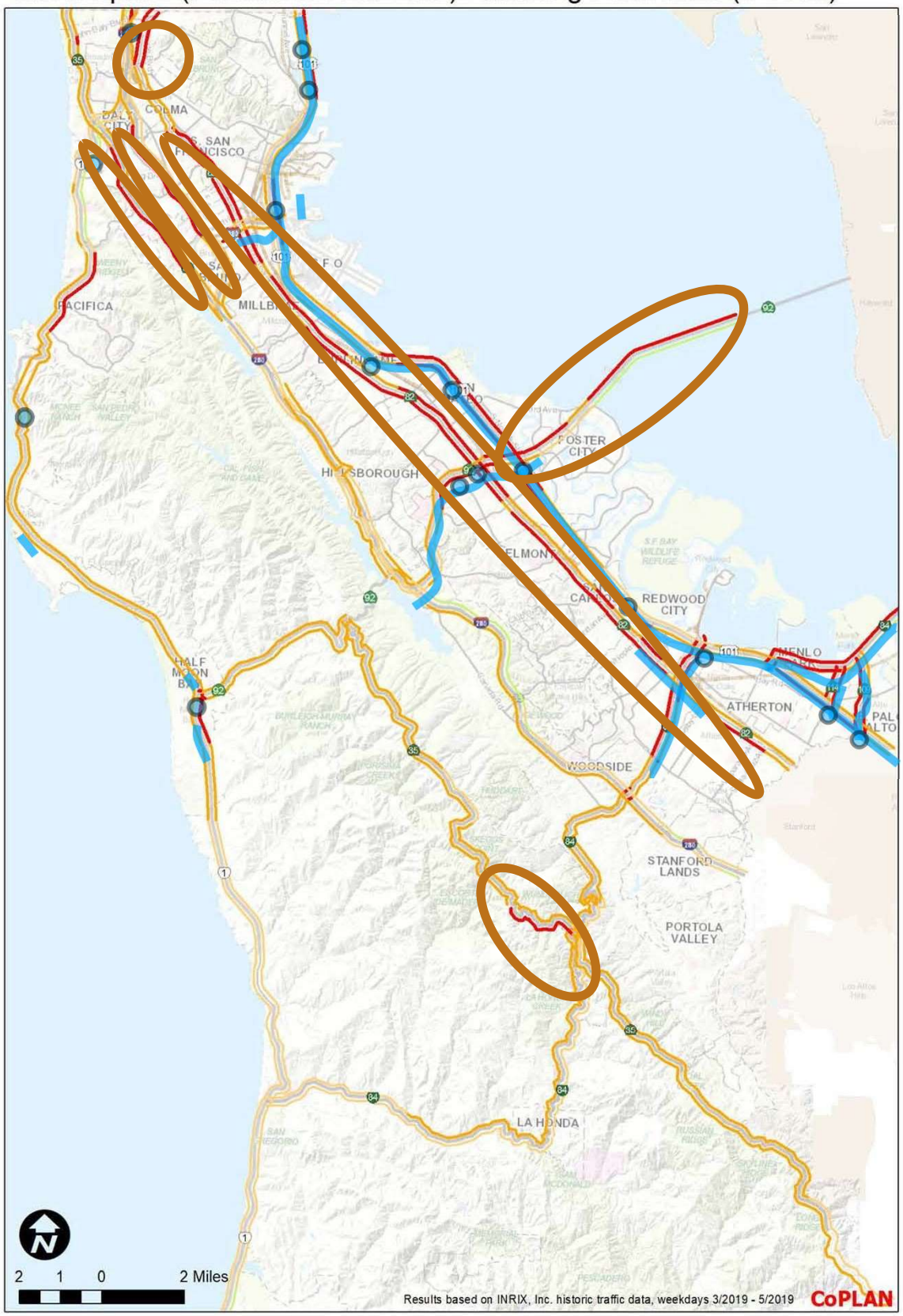
Total Vehicle Hours of Delay Per Mile (VHD/Mile): Evening Peak Hour (5-6 PM)



Legend

VHD/Mile 0 - 25 | 26 - 50 | 51 - 75 | 76 - 150 | 151+

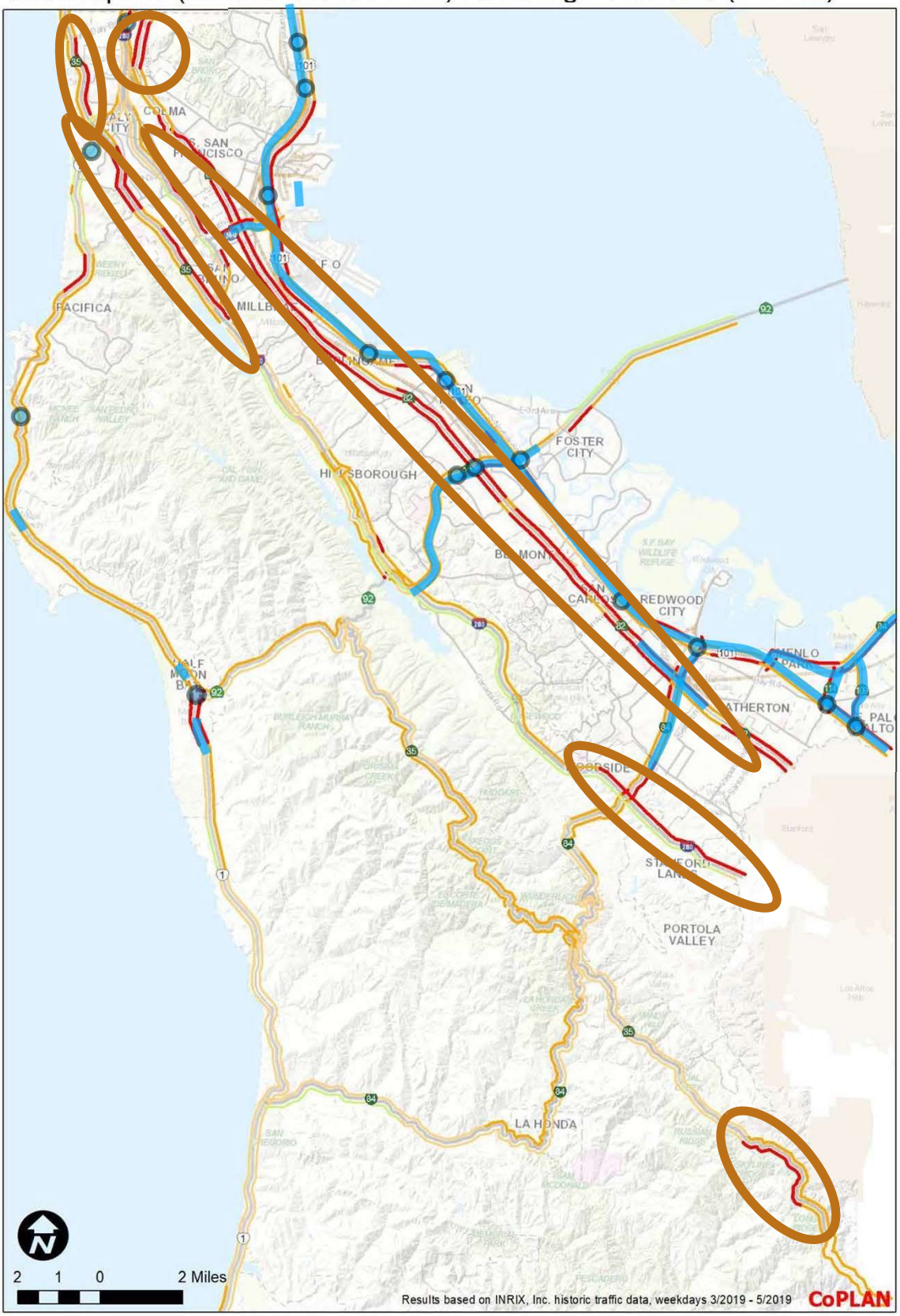
Figure 3
Travel Speed (Percent of Free Flow) : Morning Peak Hour (8-9 AM)



Legend

Percent Free Flow Speed — 0 - 50 % — 51 - 75 % — 76 - 85 % — 86 - 95 % — 96+ %

Figure 4
Travel Speed (Percent of Free Flow) : Evening Peak Hour (5-6 PM)

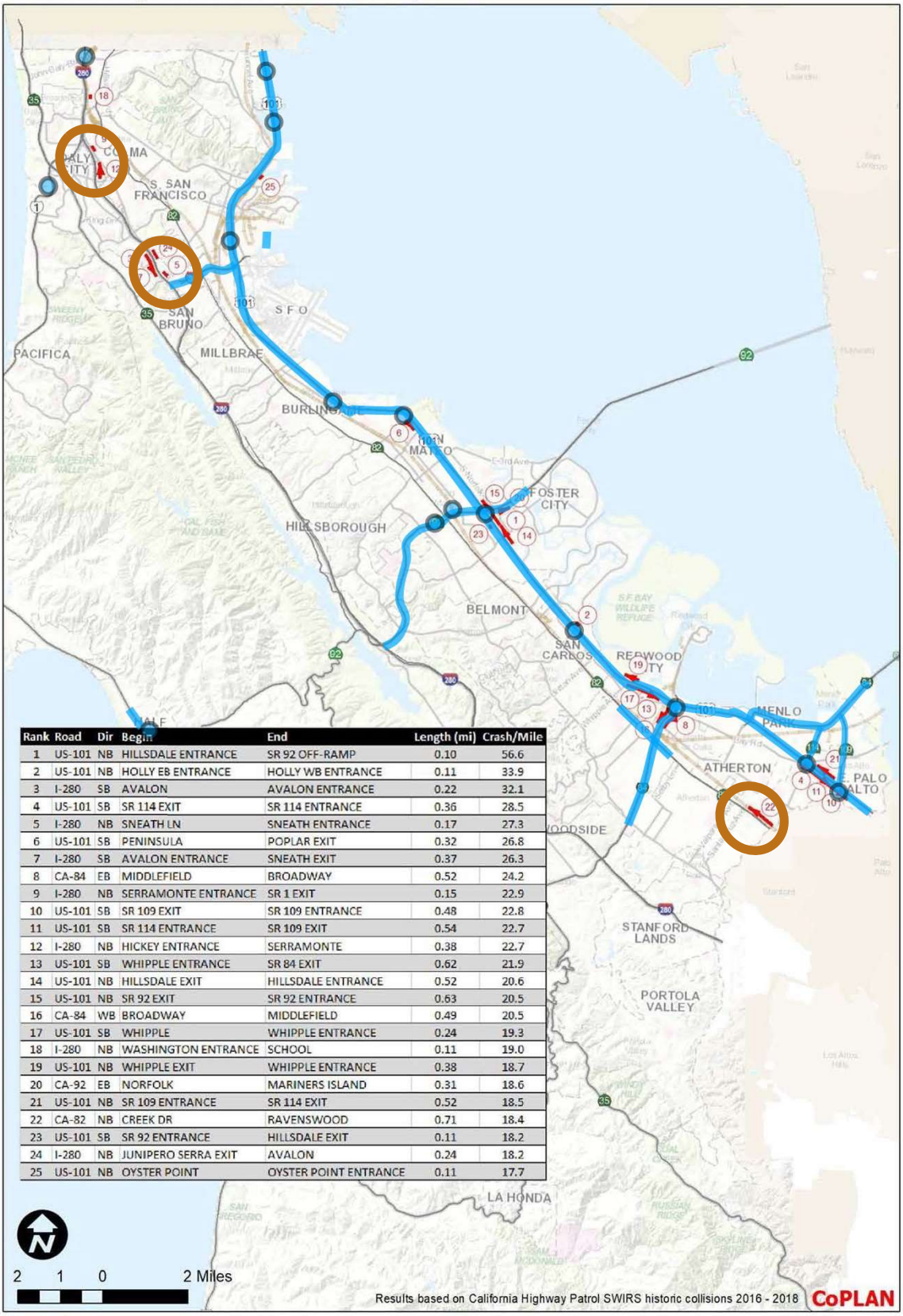


Legend

Percent Free Flow Speed — 0 - 50 % — 51 - 75 % — 76 - 85 % — 86 - 95 % — 96+ %

Figure 5

Worst 25 Segments based on Crashes per Mile



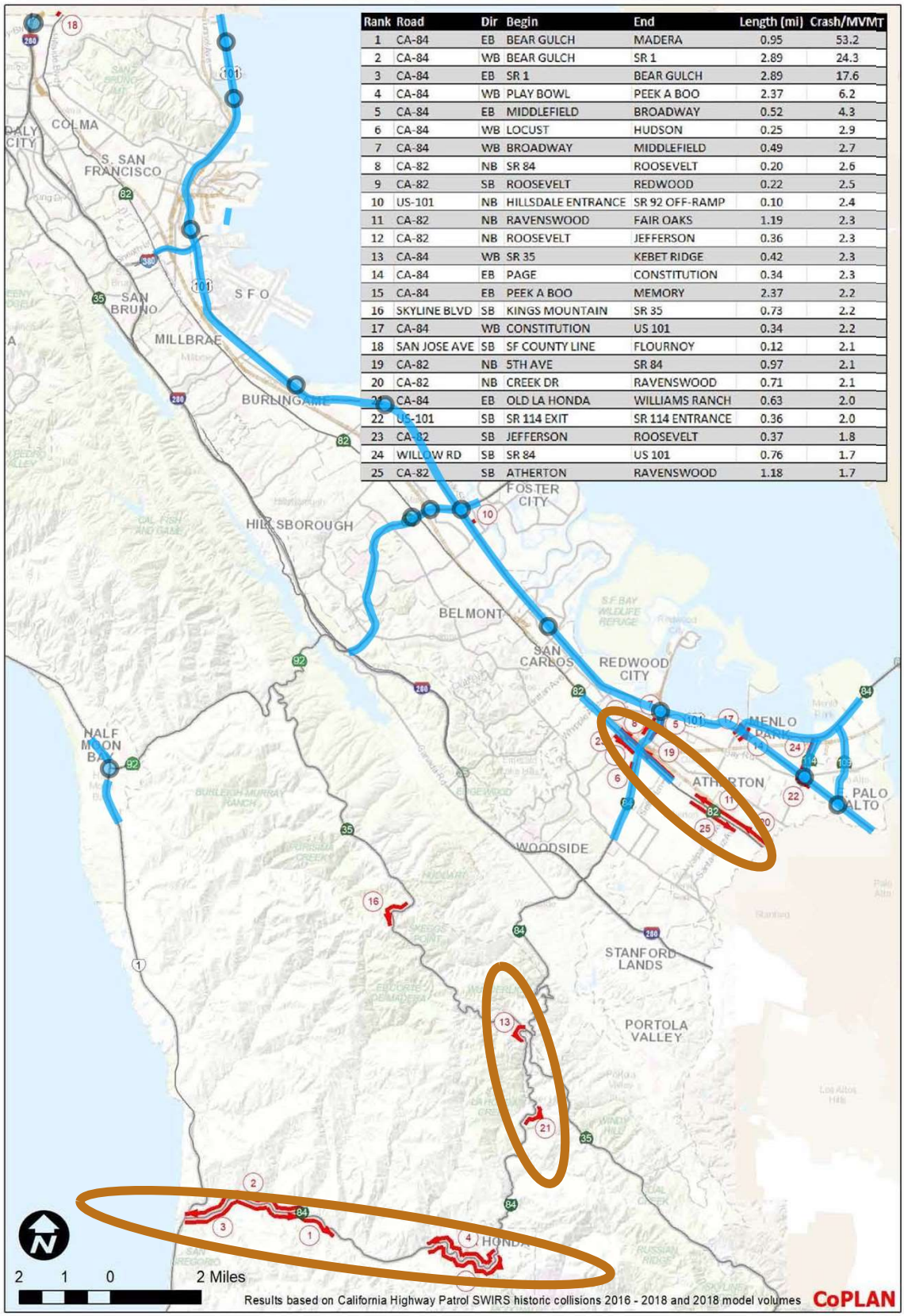
Rank	Road	Dir	Begin	End	Length (mi)	Crash/Mile
1	US-101	NB	HILLSDALE ENTRANCE	SR 92 OFF-RAMP	0.10	56.6
2	US-101	NB	HOLLY EB ENTRANCE	HOLLY WB ENTRANCE	0.11	33.9
3	I-280	SB	AVALON	AVALON ENTRANCE	0.22	32.1
4	US-101	SB	SR 114 EXIT	SR 114 ENTRANCE	0.36	28.5
5	I-280	NB	SNEATH LN	SNEATH ENTRANCE	0.17	27.3
6	US-101	SB	PENINSULA	POPLAR EXIT	0.32	26.8
7	I-280	SB	AVALON ENTRANCE	SNEATH EXIT	0.37	26.3
8	CA-84	EB	MIDDLEFIELD	BROADWAY	0.52	24.2
9	I-280	NB	SERRAMONTE ENTRANCE	SR 1 EXIT	0.15	22.9
10	US-101	SB	SR 109 EXIT	SR 109 ENTRANCE	0.48	22.8
11	US-101	SB	SR 114 ENTRANCE	SR 109 EXIT	0.54	22.7
12	I-280	NB	HICKEY ENTRANCE	SERRAMONTE	0.38	22.7
13	US-101	SB	WHIPPLE ENTRANCE	SR 84 EXIT	0.62	21.9
14	US-101	NB	HILLSDALE EXIT	HILLSDALE ENTRANCE	0.52	20.6
15	US-101	NB	SR 92 EXIT	SR 92 ENTRANCE	0.63	20.5
16	CA-84	WB	BROADWAY	MIDDLEFIELD	0.49	20.5
17	US-101	SB	WHIPPLE	WHIPPLE ENTRANCE	0.24	19.3
18	I-280	NB	WASHINGTON ENTRANCE	SCHOOL	0.11	19.0
19	US-101	NB	WHIPPLE EXIT	WHIPPLE ENTRANCE	0.38	18.7
20	CA-92	EB	NORFOLK	MARINERS ISLAND	0.31	18.6
21	US-101	NB	SR 109 ENTRANCE	SR 114 EXIT	0.52	18.5
22	CA-82	NB	CREEK DR	RAVENSWOOD	0.71	18.4
23	US-101	SB	SR 92 ENTRANCE	HILLSDALE EXIT	0.11	18.2
24	I-280	NB	JUNIPERO SERRA EXIT	AVALON	0.24	18.2
25	US-101	NB	OYSTER POINT	OYSTER POINT ENTRANCE	0.11	17.7

Legend

Worst 25 Segments based on Crashes Per Mile

Figure 6

Worst 25 Segments based on Crashes per Million Vehicle Miles Traveled



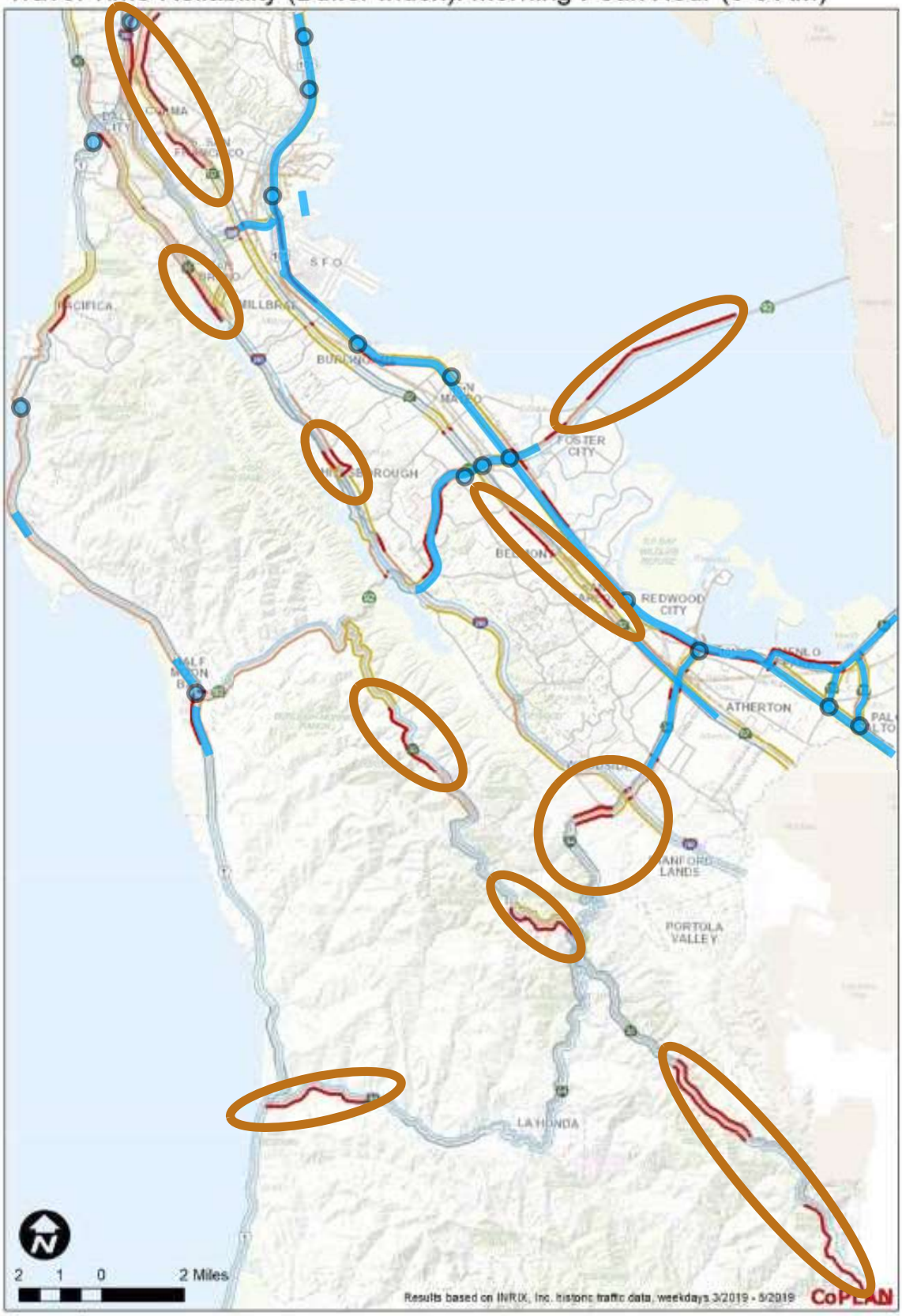
Rank	Road	Dir	Begin	End	Length (mi)	Crash/MVMT
1	CA-84	EB	BEAR GULCH	MADERA	0.95	53.2
2	CA-84	WB	BEAR GULCH	SR 1	2.89	24.3
3	CA-84	EB	SR 1	BEAR GULCH	2.89	17.6
4	CA-84	WB	PLAY BOWL	PEEK A BOO	2.37	6.2
5	CA-84	EB	MIDDLEFIELD	BROADWAY	0.52	4.3
6	CA-84	WB	LOCUST	HUDSON	0.25	2.9
7	CA-84	WB	BROADWAY	MIDDLEFIELD	0.49	2.7
8	CA-82	NB	SR 84	ROOSEVELT	0.20	2.6
9	CA-82	SB	ROOSEVELT	REDWOOD	0.22	2.5
10	US-101	NB	HILLSDALE ENTRANCE	SR 92 OFF-RAMP	0.10	2.4
11	CA-82	NB	RAVENSWOOD	FAIR OAKS	1.19	2.3
12	CA-82	NB	ROOSEVELT	JEFFERSON	0.36	2.3
13	CA-84	WB	SR 35	KEBET RIDGE	0.42	2.3
14	CA-84	EB	PAGE	CONSTITUTION	0.34	2.3
15	CA-84	EB	PEEK A BOO	MEMORY	2.37	2.2
16	SKYLINE BLVD	SB	KINGS MOUNTAIN	SR 35	0.73	2.2
17	CA-84	WB	CONSTITUTION	US 101	0.34	2.2
18	SAN JOSE AVE	SB	SF COUNTY LINE	FLOURNOY	0.12	2.1
19	CA-82	NB	5TH AVE	SR 84	0.97	2.1
20	CA-82	NB	CREEK DR	RAVENSWOOD	0.71	2.1
21	CA-84	EB	OLD LA HONDA	WILLIAMS RANCH	0.63	2.0
22	US-101	SB	SR 114 EXIT	SR 114 ENTRANCE	0.36	2.0
23	CA-82	SB	JEFFERSON	ROOSEVELT	0.37	1.8
24	WILLOW RD	SB	SR 84	US 101	0.76	1.7
25	CA-82	SB	ATHERTON	RAVENSWOOD	1.18	1.7

Legend

Worst 25 Segments based on Crashes Per Million VMT

Figure 7

Travel Time Reliability (Buffer Index): Morning Peak Hour (8-9 AM)

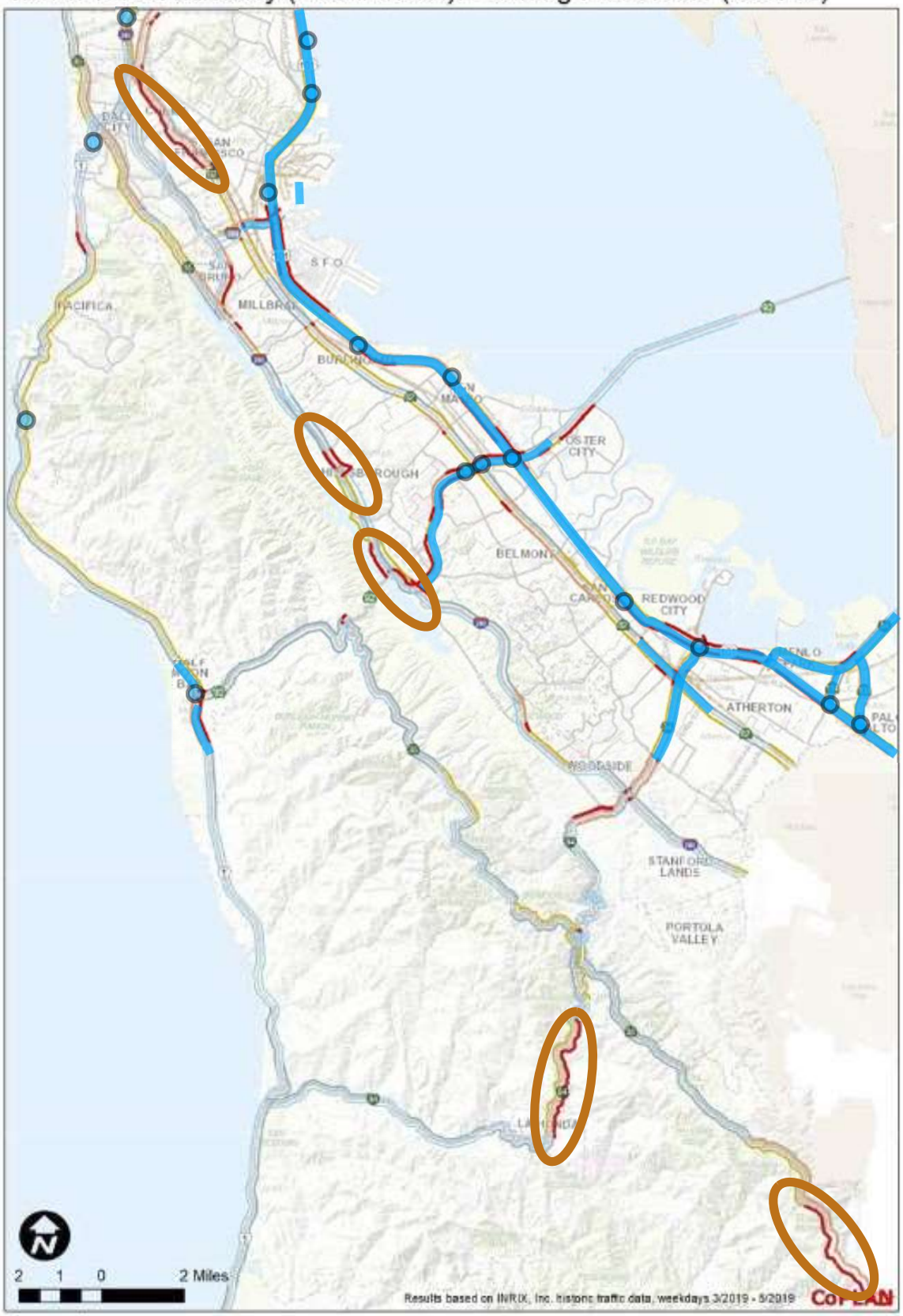


Legend

Buffer Index 0 - 0.25 (reliable) 0.26 - 0.50 0.51 - 0.75 0.76 - 1.00 1.01+ (unreliable)

Figure 8

Travel Time Reliability (Buffer Index): Evening Peak Hour (5-6 PM)



Legend

Buffer Index 0 - 0.25 (reliable) 0.26 - 0.50 0.51 - 0.75 0.76 - 1.00 1.01+ (unreliable)

Table 1

Identification of Roadway Segments with Observed Gaps

Roadway Segment			Observed Gap									Relevancy to Other Projects/ Issues	
Roadway Name	General N/W Limit	General S/E Limit	AM VHD	PM VHD	AM % of FFS	PM % of FFS	AM Buffer Index (Reliability)	PM Buffer Index (Reliability)	Crashes per Mile	Crashes per VMT	Total Criteria Met	Nearby Projects	Other Comments
Interstate 280	Washington St (Daly City)	Interstate 380 (San Bruno)	SB	NB	SB		NB		●		5		
Interstate 280	Interstate 380 (San Bruno)	SR 35 (San Bruno)		NB							1		Adjacent to Protected Land; Low Speed Design
Interstate 280	Trousdale Dr	SR 92		NB				NB/SB			2		Adjacent to Protected Land; Low Speed Design
Interstate 280	SR 92	Edgewood Rd	SB								1		Adjacent to Protected Land; Low Speed Design
Interstate 280	SR 84	SC County Line	SB	NB							2		
SR 35	Interstate 280 (San Bruno)	SR 1 (Daly City)				NB/SB	SB				2		Adjacent to Protected Land; Low Speed Design
SR 35	SR 1 (Daly City)	SF County Line (Daly City)				NB					1		
SR 35	SR 92	SR 84			SB		SB				2		Adjacent to Protected Land; Low Speed Design
SR 35	SR 84	SC County Line				NB	NB/SB	SB			3		Adjacent to Protected Land; Low Speed Design
SR 84	SR 35	SR 1					EB	EB		●	3		Adjacent to Protected Land; Low Speed Design
SR 84	Interstate 280 (Woodside)	SR 35					EB/WB				1		
SR 92	US 101 (San Mateo)	AL County Line (Foster City)	WB	EB	WB		WB				4		
SR 92	Hillsdale Ave (San Mateo)	SR 35					WB				1		
SR 82 (El Camino Real)	SF County Line (Daly City)	San Pedro Rd (Daly City)			NB/SB	NB/SB	NB				3		
SR 82 (El Camino Real)	San Pedro Rd (Daly City)	Hickey Blvd (South SF)					NB/SB	SB			2		
SR 82 (El Camino Real)	Hickey Blvd (South SF)	Millbrae Ave (Millbrae)			NB/SB	NB/SB					2	US 101 Managed Lanes	
SR 82 (El Camino Real)	Millbrae Ave (Millbrae)	Poplar Ave (San Mateo)			NB/SB	NB/SB					2	US 101 Managed Lanes	
SR 82 (El Camino Real)	Poplar Ave (San Mateo)	SR 92 (San Mateo)	SB		NB/SB	NB/SB					3	US 101 Managed Lanes	
SR 82 (El Camino Real)	SR 92 (San Mateo)	Hillsdale Ave (San Mateo)			NB/SB	NB/SB					2	US 101 Managed Lanes	
SR 82 (El Camino Real)	Hillsdale Ave (San Mateo)	San Carlos Ave (San Carlos)	SB		NB/SB	NB/SB	NB/SB				4	US 101 Managed Lanes	
SR 82 (El Camino Real)	San Carlos Ave (San Carlos)	SR 84 (Redwood City)			NB/SB	NB/SB					2	US 101 Managed Lanes	
SR 82 (El Camino Real)	SR 84 (Redwood City)	Atherton Ave (Atherton)			SB	NB/SB				●	3	US 101 Managed Lanes	
SR 82 (El Camino Real)	Atherton Ave (Atherton)	SC County Line (Menlo Park)	SB	NB/SB	SB	NB/SB			●	●	6	US 101 Managed Lanes	
Number of Segments that Meet Criteria:											57		
Number of Segments that Qualify for Further Study Using a Threshold of 3 or more Observed Gaps											9		

Attachment A: Gap Analysis Approach

Step 1: Collect existing information on key performance metrics through the following sources:

- Draft Existing and Future Conditions Report (TA, December 2020).
- State Highway System Congestion and Safety Assessment Update 2019 (C/CAG).

Step 2: Describe the performance measure to be analyzed, including, but not limited to:

- AM and PM peak hour assessments.
- Safety.
- Travel time reliability.

Step 3: Prepare graphics using the figures from the C/CAG report, and overlay the project inventory on each figure. Road segments with severe congestion or safety issues that do not have projects identified to mitigate that congestion, suggest that some high need areas on the State Highway system are not currently being addressed or studied.

Step 4: Based upon the graphical representations of projects and needs developed in Step 3:

- Highlight all of the gaps from the top two most severe performance metrics results.
- Develop a table of all potential gap areas identified and indicate which performance metrics apply to each area (multiple metrics can apply to each area).

Step 5: Identify a threshold for determining when the severity of need justifies including a gap area as a potential planning study in the SRHP CIP. The threshold could be triggered by one metric with a high severity of need, or two or more metrics with a combined significance of severity.

Appendix C –Scoring Rubric and Technical Metrics

N-1 Severity of current and projected congestion

Peak Hour Delay Index	Points to Assign
<1	0
1-1.25	1
1.25-1.5	2
1.5-1.75	3
1.75-2	4
>2	5

Percent Free Flow Speed	Points to Assign
>90%	0
70-90%	1
50-70%	2
30-50%	3
20-30%	4
<20%	5

Peak Hour V/C Ratio*	Points to Assign
<1	0
1-1.25	1
1.25-1.5	2
1.5-1.75	3
1.75-2	4
>2	5

More applicable for analysis of projected congestion.

Calculation tool will take the maximum score from available technical metrics.

Potential data sources for current/observed congestion:	
State Highway System Congestion and Safety Performance Assessment	-Buffer index and percent free flow speed for 2015; -State highways only -Need to request data set in GIS format
State Highway System Congestion and Safety Performance Assessment	2015; -State highways only
INRIX Analytics from MTC data purchase	-Available via C\CAG and MTC -Covers most arterials and highways

Data Source for Projected Congestion	
CCAG Model Run for "No Build" Condition	Likely available only for projects in pre environmental phase or later

N-2 **Need to improve access and connections to jobs, housing, transit hubs and other high activity centers, supporting existing economic activity and spurring new economic development in the vicinity**

Number of Activity Centers Served	Points to Assign
0	0
1 to 5	1
5 to 10	2

Definition of activity centers:
Transit hubs - More than one transit mode served or fixed rail transit station
Shopping centers
Schools or Colleges
Hospitals or Medical Campuses
Large Office Campuses
Civic Campuses - City Halls, County Buildings, Community Centers, etc.

Proposed project limits should extend to within a half mile of the activity center.

N-3 Project recognized in adopted statewide, regional, county or local planning and fund programming documents

Criteria	Points to Assign
Not included in RTP, Countywide Transportation Plan, or local plan	0
Included in local jurisdiction transportation planning document only	1
Included in RTP and/or countywide transportation planning document	2

Alternative

Criteria	Points to Assign
Not currently included in any planning documents	0
Included in at least one planning document	1
Included in more than one planning document	2

N-4 Identified safety issue (e.g. documented collision history due to site conditions that is higher than average for the facility type)

Criteria	Points to Assign
Crash rate per million VMT for project intersection or roadway segment <2	0
Crash rate per million VMT for project intersection or roadway segment between 2 and 5	1
Crash rate per million VMT for project intersection or roadway segment between 5 and 10	2
Crash rate per million VMT for project intersection or roadway segment between 10 and 15	3
Crash rate per million VMT for project intersection or roadway segment > 15	4

Distribution of points based on crash rates per *mile* categories in the *State Highway System Congestion and Safety Performance Assessment*
Source for worksheet for crash rate calculation:
1_CRPC_STGB200K_Project_Scoring_Guide.pdf

Data sources for Crash Rate Calculation

Crash records	Statewide Integrated Traffic Records System (SWITRS)
Alternative data source	Crash rate data from Congestion and Safety Performance Assessment in GIS format (based on 2013-2015 crash records)

N-5 **Regional/Countywide significance, including where applicable, location and relevance on the State Highway Congestion & Safety Performance Assessment for San Mateo County**

For screening

Percent of Traffic	Points to Assign	Data Source
Project does not improve or provide access to a major activity center; and Project is not on a State highway facility; and Project facility is not located on border of county and serving significant inter-County traffic.	0	GIS mapping
Project improves or provides access to a major activity center; OR Project is on a State highway facility; OR Project facility is located on border of county and serves significant inter-county traffic	1	GIS mapping and engineering judgement regarding traffic composition

For Comparison of Projects of Countywide Significance within the same Project Phase

Percent of Traffic	Points to Assign	
Existing or projected traffic < 50% inter-jurisdictional	0	C\CAG travel demand model select link assignment for PM peak
Existing or projected traffic is at least 50% inter-jurisdictional or inter-county	1	C\CAG travel demand model select link assignment for PM peak

Definitions:

Project traffic	Includes all vehicle trips using a project facility or corridor during the peak hours
Inter-county	Trips with origin or destination outside San Mateo County
Inter-jurisdictional	Trips with origin or destination outside the jurisdiction in which it is located.
Major activity center	Includes BART or Caltrain stations, airport, and major shopping/entertainment centers

E-1 Potential increase in person through-put

Metric - Average Vehicle Occupancy (AVO)

Criteria	Points to Assign
Project does not increase AVO	0
Project increases AVO by up to 15%	1
Project increases AVO by up to 30%	2
Project increases AVO by up to 45%	3
Project increases AVO by up to 60%	4
Project increases AVO by up to 75%	5
Project increases AVO by more than 75%	6

OR

Criteria	Points to Assign
Project does not support transit mode shift	0
Project supports transit mode shift - moderate effect (e.g. transit signal priority)	2
Project supports transit mode shift - medium effect (??)	4
Project supports transit mode shift - strong effect (e.g. bus on shoulder running, bus only lane)	6

Ability to relieve congestion/performance improvement (e.g. reduces/ eliminates bottleneck)

E-2

1. Project Addresses Interchange Bottleneck	
Criteria	**Points to Assign**
Project does not address interchange bottleneck	0
Project addresses interchange bottleneck	4

2. Percent Improvement (Reduction) in PM Peak Hour Delay Index	**Points to Assign**
0	0
20	1
40	2
60	3
80	4
100%	5

3. Percent Improvement (increase) in Free Flow Speed	**Points to Assign**
0	0
20	1
40	2
60	3
80	4
100	5

Data Sources
1. Project description and location
2-3. Analysis for environmental phase - comparison of future No Build to Build scenarios for general purpose lanes.

E-3 **Value : Benefit relative to the amount of funding requested (high impact, low cost - "bang for the buck")**

Cost per Merit Score Point	
Over 80th percentile	1
Up to 80th percentile	2
Up to 60th percentile	3
Up to 40th percentile	4
Up to 20th percentile	5

Definitions

Merit Score is total of Need+Effectiveness+Sustainability Scores

Cost is total requested Measure A or W funding

E-4 Degree to which project reduces GHG emissions and improves air quality

Criteria	Points to Assign
No reduction in GHG emissions	0
Upto 5% reduction in GHG emissions	1
5-10% reduction in GHG emissions	2
10-15% reduction in GHG emissions	3
15-20% reduction in GHG emissions	4
>20% reduction in GHG emissions	5

Potential Data Sources/Calculation Method:

SB 1 Emissions Calculator (requires change in average daily VMT and vehicle fleet makeup and average speeds generated in planning analyses outside this tool.)

E-5 Potential VMT reduction ~~per capita~~

Project	Points to Assign
Induces VMT (new GP lane miles)*	0
May be presumed to have less than significant VMT impacts*	3
Plausibly reduces VMT through mode shift or reduction of travel distance (e.g. a new bridge)	5

*Refer to OPR Technical Guidance

Projects that may be presumed to have less than significant impacts include addition of active transportation facilities, transit-only lanes, and operational improvement among others.

OR

Project	Points to Assign
Induces VMT	0
Upto 5% reduction in VMT ~~per capita~~	1
5-10% reduction in VMT	2
10-15% reduction in VMT	3
15-20% reduction in VMT	4
>20% reduction in VMT	5
Note: The second measure criteria is for projects that have reached Environmental Analysis phase.	

E-6	**Ability to address safety issue (e.g.project improves site conditions to reduce potential for collisions)**

CMF Value	Points to Assign
Project does not incorporate safety countermeasure included in CMF clearinghouse or CMF>1	0
0.9	1
0.8	2
0.7	3
0.6	4
0.5	5

Data Sources
Project description
USDOT Crash Modification Factors Clearinghouse

E-7 Potential travel time savings

Criteria	Points to Assign
Project increases or does not reduce total travel time	0
Upto 5% reduction in total travel time	1
5-15% reduction in total travel time	2
15-25% reduction in total travel time	3
>25% reduction in total travel time	4

Data Source:

Comparison of future scenarios generated with an operational or travel demand model (C/CAG model) for project corridor from planning or environmental study.

E-8 Demonstrates coordination with adjacent projects/ integration of inter-related projects

Criteria	Points to Assign
Project is not coordinated with other or adjacent projects	0
Project provides landscaping or other amenities to previously completed project	1
Project is coordinated with or fills gap with respect to a locally significant project	2
Project is coordinated with or fills gap with respect to a regionally significant project	3

S-1 **Project accommodates multiple transportation modes (e.g. pedestrian & bicycle access as well as transit infrastructure) where contextually appropriate and to the extent feasible (Complete Streets), including infrastructure for transit (e.g. express lanes, bus only lanes)**

Criteria	Points to Assign
Project serves SOV travel only	0
Project serves SOV + HOV or express lane travel	1
Project serves, auto + active transportation users with Complete Streets features	3
Project incorporates both Complete Streets features plus transit improvements	5

Complete Streets features could include:
Lane reduction (road diet)
Addition of active transportation facilities (bike lanes, cycle tracks, paths, sidewalks)
Addition of pedestrian refuge medians
Protected intersections

Transit serving features could include:
Transit signal priority
Bus only lanes
Bus queue jumps
BRT infrastructure
New or improved transit stops or stations

Data source: Project scope and description

S-2 **Project is primarily an operational improvement (e.g. safety or ITS) rather than infrastructure expansion (e.g. adding general purpose lanes)**

Criteria	Points to Assign
Project adds new general purpose vehicle travel lanes >1* mile in length*	0
Project adds general purpose lane capacity but also includes operational or safety improvements	2
Project consists solely of operational or safety improvements	4

** Consistent with OPR guidance on projects that can be presumed less than significant with respect to VMT impacts.*

Data source: Project inventory and scope

S-3 Impact project has on low income, transit dependent and or other vulnerable populations

Project provides improved access or other benefit to area with EFA Score of:	Points to Assign
0-3	0
4-6	1
7-8	2
9-10	3

Data Sources:
GIS data layer of C\CAG Equity Focus Areas

Notes:

The C\CAG Equity Focus Areas were identified with an analysis of U.S. Census data as areas with many low-income households, people of color, households without access to a vehicle, and households burdened by housing and transportation costs compared to other areas in San Mateo County.

Scoring should be supported by some analysis or clear indication that benefits accrue to the equity areas in question. A project that simply passes through an area may not offer any benefits to offset any noise, pollution, or other impacts.

Benefits may include things like reduced travel times, improved modal options, better access to transit, improved active transportation facilities, or improved safety.

S-4 Innovative low environmental impact/greeninfrastructure, including resiliency elements to address climate change

Criteria	Points to Assign
Project does not include elements for climate change resilience or low environmental impact/green infrastructure	0
Project addresses climate change resilience OR Includes at least one low environmental impact/green infrastructure element	1
Project addresses climate change resilience AND Includes at least one low environmental impact/green infrastructure element	2
Project addresses climate change resilience AND Includes more than one low environmental impact/green infrastructure element	3

Eligible Elements

Project responds to climate change or improves climate resiliency (e.g. realigning road away from expected sea level rise)

Promote use of clean fuel and ZEVs
Reduction in GHG and air pollutants
Climate resistant paving materials
Upgrade road drainage systems
Traffic management systems and emergency communication
Green stormwater treatment
Addition or replacement of trees in ROW

S-5 **Project accounts for long term repair/maintenanceneeds (e.g. uses materials with long life cycles, low maintenance costs & has a funding plan for maintenance)**

Criteria	Points to Assign
Project does not account for long term repair/maintenance needs	0
Project accounts for long term repair/maintenance needs (e.g. uses materials with long life cycles, low maintenance costs & has a funding plan for maintenance)	1

R-1 Clear and complete proposal

Criteria	Points to Assign
Application is missing required information or incomplete	0
Application is complete and not missing any information or required attachments	3

Data Source:
Project inventory

Required elements for proposal to be considered complete:
TBD pending discussion with SMCTA

R-2 Project status and schedule - aims to give priority to shovel ready projects

Project Phase	Points to Assign
Not initiated Approval needed	0
Preliminary Planning Study Project Initiation Document Preliminary Environmental	1
Environmental Preliminary Engineering Final Design (PS&E) up to 65% PEER Conceptual Landscape Design	2
Final Design (PS&E) up to 95% ROW Engineering Design Svcs. During Construction Construction Landscape Design Plant Establishment Period	3

Data source: project inventory

R-3 Ease and speed of implementation

Criteria	Points to Assign
Project will likely require R/W in fee ownership, permanent easements and/or temporary construction easements from private owners and/or will require utility relocations from utility companies outside that implementing agency's governmental control.	0
1. Project is 100% within the Implementing Agency's right-of-way or is within their control at the time of this application submittal (this includes temporary construction easements) AND 2. Applicant has not begun permitting or environmental clearance processes.	1
1. Project is 100% within the Implementing Agency's right-of-way or is within their control at the time of this application submittal (this includes temporary construction easements) AND 2. Applicant has completed environmental clearance process and begun permitting.	2
1. Project is 100% within the Implementing Agency's right-of-way or is within their control at the time of this application submittal (this includes temporary construction easements) AND 2. Applicant has completed environmental clearance and required permitting for construction.	3

Data source: Project inventory/ project document

R-4 Demonstrates stakeholder support/community engagement

Criteria	Points to Assign
Application lacks documented support from the community or the applicant has not engaged the community on this project.	0
1. Applicant has described documented support from the community but it is unclear if the supporters will directly benefit from the project AND 2. Applicant has described community engagement activities, but not demonstrated how input was used to shape the project scope of work AND 3. Applicant has identified concerns raised by the community, but not included any discussion of ways to mitigate concerns.	1
1. Applicant has described documented support from members of the community that will benefit directly from the project AND 2. Applicant has described how input received from public engagement activities helped shape the project scope of work AND 3. Applicant identifies concerns raised and plans for resolving those concerns if possible AND 4. Applicant lists non-sponsor stakeholders that have taken a formal position on the project.	3

R-5 Has a credible cost estimate and funding plan

Criteria	Points to Assign
1. Funding information is either not provided for each phase or is unrealistic given the size and complexity of the project OR 2. Project is not fully funded and there is no credible plan for obtaining funding within one year of the funding award OR 3. Applicant cannot phase the project if funding cannot be obtained.	0
1. Funding information is provided for each phase and realistic given the size and complexity of the project AND 2. Project is not fully funded for every scope phase with either Measure A & W program request or other secured matching funds, however applicant describes credible plan to close funding gap within one year of the funding award date OR 3. Applicant describes phased approach to completing the project with associated costs.	1
1. Funding information is provided for each phase and realistic given the size and complexity of the project AND 2. Project is fully funded for every scope phase with either Measure A & W program request or other secured matching funds AND 3. Applicant submits documentation to show matching funds are secured AND 4. Applicant anticipates no funding shortfalls.	3

FL-1 Percent of matching fund contribution

Criteria	Points to Assign
Match percentage <= 10%.	0
Local match percentage is greater than 10% and less than 20%	1
Local match percentage is between 20% and 29%	2
Local match percentage is between 30% and 49%	4
Local match percentage is between 50% and 70%	6
Local match percentage is greater than 70%	8

Note: Cost match percentage applies to current project phase.

FL-2 Private sector contribution, including public/ private partnerships

Criteria	Points to Assign
No private sector funding is part of this project application.	0
Project includes any amount of private sector contribution, but less than 15% of the total project cost.	1
Private sector contribution to local match is equal to or greater than 15% of total project cost.	2