HIGHWAY 101 INTERCHANGE & APPROACHING ROADWAY STUDY

FINAL
Implementation Plan

Prepared for:

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Executive Summary

The Transportation Authority of Marin (TAM) studied 12 selected interchanges on Highway 101 in Marin County to document the existing conditions, deficiencies, and constraints and to identify opportunities for improvement under a program of near- and long-term projects that aim to improve operations, intermodal connectivity, and safety for all users. The planning study is funded through Measure AA – the reauthorized ½-cent transportation sales tax that was approved by Marin voters in 2018. The overarching goal of the Transportation Sales Tax Renewal Expenditure Plan (Expenditure Plan) is to "reduce congestion and reduce greenhouse gas emissions, maintain and improve local transportation infrastructure, and provide high quality transportation options for people of all ages who live, work, and travel in Marin County."

Multimodal concept plans were developed for each of the 12 interchange areas to address the identified deficiencies under both ***long-term*** and ***near-term*** scenarios that reflected differing levels of investment.

The concepts were evaluated against the following goals and objectives that were intended to be aligned with the guiding principles outlined in the 2021 Transportation Sales Tax Strategic Plan and other regional and statewide planning sources:

1. Enhance Health and Safety
2. Relieve Local Traffic Congestion
3. Improve Multimodal Access to/from and across Highway 101
4. Promote Economic Vitality
5. Implement-ability

For each goal and objective, a series of evaluation criteria were developed to determine how well a particular interchange improvement concept would perform against alternative concepts at that same location and against the other interchange locations. The evaluation criteria were in turn supported by various planning level performance measures that could be used to qualitatively assess proposed improvements against the established goals and objectives.

Evaluation Findings

The evaluation findings for ***long-term*** concepts are as follows:

- Long-term concepts generally score higher than near-term concepts, especially at interchange locations that experience or are expected to see traffic congestion issues
- Two long-term concepts rise to the top for each Marin planning area:
  - *South:* Blithedale Avenue/Tiburon Boulevard and Tamalpais Drive/Paradise Drive
  - *Central:* North San Pedro Road/Merrydale Road and Manuel T. Freitas Parkway/ Civic Center Drive
  - *North:* Lucas Valley Road/Smith Ranch Road and Alameda del Prado/Nave Drive
- Total cost of improving all 12 long-term concepts is $1.33 billion (2021 dollars)
  - Seven long-term concepts cost less than $50 million
  - Lucas Valley Road/Smith Ranch Road = $68 million, Tamalpais Drive/Paradise Drive = $93 million, Alameda del Prado/Nave Drive = $280 million

The evaluation findings for ***near-term*** concepts are as follows:

- Several near-term concepts have substantially lower costs than their long-term counterparts, but they score almost as high since congestion is not as significant an issue at these locations compared to other factors.
- Total cost of all 12 near-term concepts is $182 million (2021 dollars).
- Interchanges with compatible near-term and long-term scores, but with near-term costs at least 50% less (by near-term rank) are:
  - Alameda del Prado/Nave Drive
  - Alexander Avenue/Vista Point
  - Donahue Street/North Bridge Boulevard/Bridgeway
  - Ignacio Boulevard/Bel Marin Keys Boulevard/Nave Drive
  - San Marin Drive/Atherton Avenue
  - Second Street/Hetherton Street

The evaluation process identified three interchange areas that should be pursued for comprehensive multimodal enhancements. The following three interchange areas were recommended for project planning, which is consistent with Caltrans' PID procedures:

- East Blithedale Avenue/Tiburon Boulevard (Highway 131) - #3
  - Highest scoring long-term concept in Southern Marin, including a focus on equity
  - Addresses multimodal needs
  - Serves as gateway to several municipalities (Mill Valley, Tiburon, and Belvedere)
  - Modest long-term total cost of $32.9 million; can potentially be phased
- Manuel T. Freitas Parkway/Civic Center Drive - #8
  - Highest scoring of all interchanges for near- and long-term concepts
  - Addresses multimodal needs
  - Provides key safety enhancements
  - Modest long-term total cost of $25.5 million; can be phased
- Alameda del Prado/Nave Drive - #10
  - Near-term concept can retrofit existing facilities with modest new construction to meet goals at a fraction of long-term plan costs
  - Addresses multimodal needs
  - Modest near-term total cost of $31.7 million; can be phased

For the remaining nine interchanges, it is recommended that planning and development of refined near-term project components be pursued over time and as practical.

Agency Next Steps

The following steps will need to be taken by TAM and the local jurisdictions/agencies to move projects forward towards implementation:

1. TAM Board to select project(s) to move forward into project development in consultation with agency stakeholders.
2. TAM and the local jurisdiction will coordinate with the Metropolitan Transportation Commission (MTC) to have the project included in the current Regional Transportation Plan (RTP).
3. TAM will secure funding for the PID and enter into a Cooperative Agreement with California Department of Transportation (Caltrans) for project development.
4. TAM will work with the local jurisdiction and a Project Development Team to prepare the PIDs for Caltrans approval.
5. TAM and the local jurisdiction will seek funding for subsequent phases of the project.

Introduction

Throughout Marin County, Highway 101 serves as the primary north-south roadway, and it is a key link between communities. Accessing Highway 101 in Marin is a major source of congestion on local roads, which reduces the connectivity of communities across the county. Interchanges vary in age and in needs for improvements. As communities around Marin have grown over the last 30-40 years, interchanges built in the 1950s and 1960s have not been altered to meet the demands of vehicles, transit, bicyclists, and pedestrians. Many do not meet current design or operational standards.

TAM studied 12 selected interchanges on Highway 101 in Marin County to document the existing conditions, deficiencies, and constraints and to identify opportunities for improvement under a program of near- and long-term projects that aim to improve operations, intermodal connectivity, and safety for all users. The interchange locations are shown on **Figure 1**.

The resulting Existing Conditions, Constraints, and Opportunities Reports[1] provided the basis for establishing performance measures against which improvement concepts could be developed, evaluated, and prioritized. This Implementation Plan provides a summary of the evaluation and prioritization process, and it offers recommendations for a program of improvements for the local interchanges, the near- and/or long-term project delivery methods, time frames, prioritization, and phasing based on funding outlook, independent utility, cost effectiveness, ease of implementation, and benefit.

The planning study is funded through Measure AA – the reauthorized ½-cent transportation sales tax that was approved by Marin voters in 2018. The overarching goal of the Transportation Sales Tax Renewal Expenditure Plan (Expenditure Plan) is to "reduce congestion and reduce greenhouse gas emissions, maintain and improve local transportation infrastructure, and provide high quality transportation options for people of all ages who live, work, and travel in Marin County." The Plan allocates 3% of the revenue for a 30-year program of improvements to interchanges and freeway access routes on Highway 101 to reduce congestion, improve local traffic flow, and address flooding impacts within the county. These funds will serve to leverage larger regional, State, and federal funds.

[1] The Existing Conditions, Constraints, and Opportunities Reports for each interchange can be accessed through the TAM Projects and Planning website for the Highway 101 Interchange and Approaching Roadway Study at the following link: https://www.tam.ca.gov/101study/

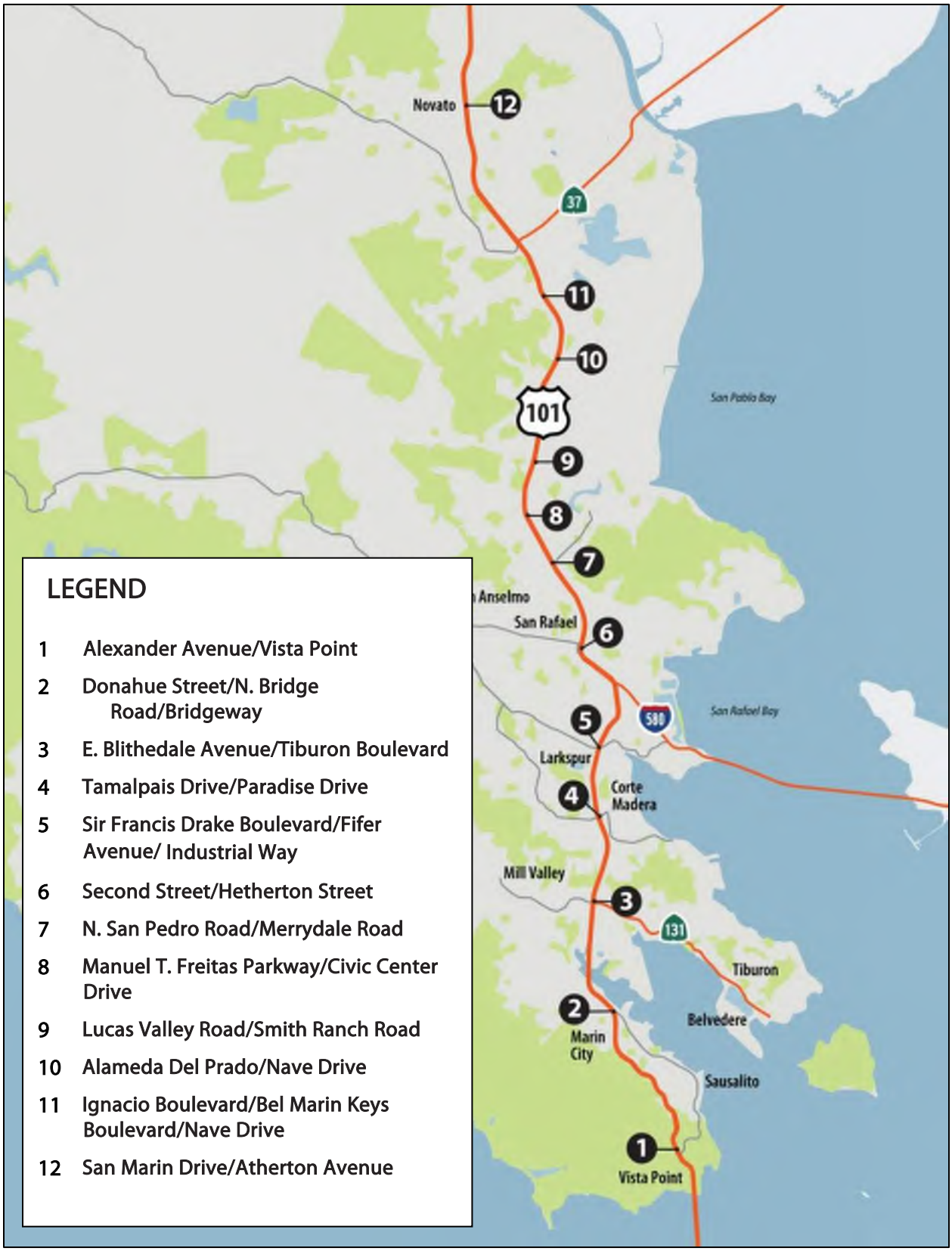

Figure 1: Study Interchange Locations

STUDY PROCESS

The planning study was conducted in three phases, beginning with the development of goals and objectives for the program and an overall analysis of the 30 interchanges along Highway 101 interchanges in Marin County to confirm which interchange locations (up to 12) are the most in need of improvement. Phase 2 involved a more detailed analysis to identify the existing conditions and deficiencies, constraints, and opportunities for improvement at each interchange location. Under Phase 3, an evaluation process prioritized the identified projects into a series of near- and long-term improvements. The study concluded with the development of a strategic roadmap of how the projects can be most effectively delivered, based on implementation timeframe, method of delivery, and potential funding availability.

STUDY INTERCHANGE SELECTION

There are 30 interchanges located along Highway 101 in Marin County. Eleven interchange locations were identified in the Expenditure Plan based on input from stakeholders, including jurisdictional partners and the public, during the development of the Expenditure Plan. Each represents significant access for adjacent communities along Highway 101. Some of the interchanges have been cooperatively planned among partners for years, and other locations have had long-standing visions for improvements that have not yet been planned in detail. A 12th interchange location was added at the onset of the project through an evaluation process conducted by the team and accepted by the TAM Board. A preliminary screening eliminated 10 interchange locations based on low travel demand, recent upgrades, or because they will be studied as part of other ongoing or planned interchange planning efforts. Six remaining locations were evaluated against the goals and objectives that were being developed to support the study, which covered the intent of the Expenditure Plan. The evaluation recommended the Alameda del Prado/Nave Drive location be selected as the most appropriate candidate for study. The memorandum documenting the selection is included as **Appendix A**.

Evaluation and Prioritization

CONCEPT DEVELOPMENT

Multimodal concept plans were developed for each of the 12 interchange areas to address the identified deficiencies. Two sets of concepts were developed for each interchange area:

a. **Long-term concepts** that focus on addressing all identified multimodal needs, meeting design standards, and in many cases involving significant infrastructure investment.

b. **Near-term concepts** that focus on addressing pedestrian, bicycle, and some public transit vehicle needs, but without significant infrastructure investments as compared to the long-term concepts.

Near-term concepts were generally "designed" to transition into long-term plans, (i.e., be phaseable). Some near-term concepts may require minor design exceptions and not remedy all existing nonstandard conditions, whereas long-term concepts would strive to meet all design standards. In some cases, the most optimal active transportation enhancements would require long-term investments, (e.g., a new crossing structure over Highway 101).

All concept plans were developed to be representative of potential solutions. Actual measures to be implemented may be revised or modified during future project development. Concept plans for each interchange are included in **Appendix B**.

GOALS AND OBJECTIVES

The interchange and approaching roadway concepts were evaluated against goals and objectives that were adopted by the TAM Executive Committee and Board in July 2020 (see **Appendix A** for the staff memorandum). The goals and objectives originated from the 2017 Strategic Vision Plan, 2018 Measure AA Expenditure Plan, recent Highway 101 corridor planning documents, and numerous local, regional, and statewide sources. They are intended to be aligned with the larger planning context to guide development of the Highway 101 interchanges program as a whole and of the proposed interchange improvement concepts themselves. They are also intended to be aligned with the guiding principles outlined in the 2021 Transportation Sales Tax Strategic Plan.

The goals and objectives are as follows:

1. Enhance Health and Safety
2. Relieve Local Traffic Congestion
3. Improve Multimodal Access to/from and across Highway 101
4. Promote Economic Vitality
5. Implementability

EVALUATION METHODOLOGY

For each goal and objective, a series of evaluation criteria were developed to determine how well a particular interchange improvement concept would perform against alternative concepts at that same location and against the other interchange locations. The comparative performance of near- and long-term concepts were also evaluated in this manner. The evaluation criteria were supported by various planning level performance measures that could be used to qualitatively assess proposed improvements against the established goals and objectives. The evaluation methodology was accepted by the TAM Executive Committee in July 2021 (see **Appendix C** for the staff memorandum). The evaluation criteria and performance measures were reviewed and accepted by the Marin Public Works Association in January 2022 and the TAM Administration, Projects, and Planning (AP&P) Executive Committee and Board in February 2022 (see **Appendix D** for the staff memorandum). A summary of responses to comments on the evaluation methodology and disposition is in **Appendix E**.

Goal 1: Enhance Health and Safety[2]

- **Evaluation Criterion 1: Improves safety for all modes.**
  - *Performance Measure*: Removes and/or improves nonstandard conditions.
    Scoring: Higher scoring for concepts that would remedy nonstandard design features or other features that contribute to potentially unsafe conditions; based on the percentage of mandatory nonstandard conditions removed.
  - *Performance Measure*: Provides separation of transportation modes.
    Scoring: Higher scoring for improvements that propose separated pedestrian/bicyclist infrastructure that improve access to transit and the surrounding area.
- **Evaluation Criterion 2: Enhances emergency response and evacuation.**
  - *Performance Measure*: Population in the area served by the interchange.

    Scoring: Higher scoring for higher average daily traffic (ADT) on the arterial crossing Highway 101.
  - *Performance Measure*: Availability of alternative routes to Highway 101.

    Scoring: Higher scoring for interchanges that have few alternative egress routes.
- **Evaluation Criterion 3: Promotes active transportation[3].**

[2] The "Getting Around Marin" online survey identified safety as a priority after travel time and flexibility (TAM Strategic Vision Plan, Figure 16 page 47). Factors that rated lower than safety included cost, comfort, and environment. This is also consistent with goals listed in MTC Plan Bay Area 2040 (Table 2.1 page 27) and is listed in the Caltrans US 101 North Comprehensive Corridor Plan.

[3] A guiding principle of the TAM Strategic Vision Plan was promoting a healthy environment and health population (Figure 1, page 14). The walking/biking network was identified as a means to support public health (page 37) by encouraging exercise.

- *Performance Measure*: Improved pedestrian connectivity/Compliance with Americans with Disabilities Act (ADA) standards.

  Scoring: Higher scoring for greater improvement to connectivity/removal of barriers to provide improved access.

- *Performance Measure*: Improved bicycle infrastructure and gap closure, level of comfort.

  Scoring: Higher scoring for greater improvement to connectivity/removal of discontinuities/increased separation from traffic.

- **Evaluation Criterion 4: Reduces greenhouse gas (GHG) emissions and improves air quality.**
  - *Performance Measure*: Reduction in carbon dioxide (CO_2) emissions.

    Scoring: Higher scoring for improvements with the significant absolute reduction in CO_2 emissions.

Goal 2: Relieve Local Traffic Congestion[4]

- **Evaluation Criterion 1: Alleviates congestion and improves traffic flow for current and future traffic.**
  - *Performance Measure:* Person hours of delay.

    Scoring: Higher scoring for concepts with the greatest reduction in total person hours of delay.

Goal 3: Improve Multimodal Access to/from and across Highway 101[5]

- **Evaluation Criterion 1: Enhances intermodal connectivity and removes access barriers.**
  - *Performance Measure*: Improved connectivity for public transit.

    Scoring: Higher scoring for concepts that provide the most improvement in connectivity for public transit.

  - *Performance Measure*: Improved pedestrian connectivity and compliance with ADA standards.

    Scoring: Higher scoring for concepts that provide the most improvement in connectivity and access for pedestrians.

[4] Transportation priorities identified during public outreach in 2015 were ranked (TAM Strategic Vision Plan). Congestion relief was the public's top priority (Figure 15, page 45). Reduced congestion is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

[5] Public outreach identified multimodal priorities (bike facility installation/upgrades) as the second transportation priority (TAM Strategic Vision Plan). Bus, rail service, and safe routes to school were ranked as priorities three through six (Figure 15, page 45). Improved multimodal access is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

- *Performance Measure*: Improved bicycle infrastructure and gap closure, level of comfort.

  Scoring: Higher scoring for concepts that provide the most improvement in connectivity for transit users, bicyclists, and pedestrians.

Goal 4: Promote Economic Vitality[6]

- **Evaluation Criterion 1: Accommodates future land use changes and growth.**
  - *Performance Measure*: Assessment of future operating conditions with forecasted growth.

    Scoring: Higher scoring for improvements that accommodate future anticipated growth with multimodal solutions[7].
- **Evaluation Criterion 2: Reduces transportation costs.**
  - *Performance Measure*: Reduction in delay[8].

    Scoring: Higher scoring for improvements with greater reduction in vehicle hours of delay (VHD) (PM peak) * value of time.
- **Evaluation Criterion 3: Promotes social equity.**
  - *Performance Measure*: Benefits Environmental Justice (EJ) communities.

    Scoring: Higher scoring for relative incidence by interchange.

Goal 5: Implementability

- **Evaluation Criterion 1: Attractiveness to funding sources.**
  - *Performance Measure*: Funding criteria/potential.
    Scoring: Higher scoring for projects that meet funding criteria[9] or could be substantially funded by multiple sources.
- **Evaluation Criterion 2: Ease of regulatory approval.**
  - *Performance Measure*: Project can obtain the necessary approvals.
    Scoring: Higher scoring projects with limited right-of-way and/or permitting needs.

A summary of the proposed goals and evaluation criteria is included in **Table 1**.

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[6] Consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

[7] Table 10 (page 39) lists major development projects in the near-term (TAM Strategic Vision Plan).

[8] US 101 is identified as a major goods movement corridor (MTC San Francisco Bay Area Goods Movement Plan). This highway also connects agriculture shippers with markets in the Bay Area. Highway reliability is a key to movement of goods (Table 4.1, page 27).

[9] For example, improvements that reduce traffic congestion, improve pedestrian/bicycle infrastructure, remove barriers to mobility, and expand transit services meet criteria established for eligibility under many federal, State, and regional funding programs, including several categories of Marin County Measure AA funding (TAM 2021 CMP Update, Final Draft).

Table 1: Goals and Evaluation Methodology

Goals & Objectives	Evaluation Criteria	Performance Measures
1. Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions
		Provides separation of active transportation modes
	Enhances emergency response and evacuation	Population served by interchange
		Availability of alternative routes to Highway 101
	Promotes active transportation	Improved pedestrian connectivity/ADA compliance
		Improved bicycle infrastructure and gap closure; level of comfort
	Reduces greenhouse gas emissions and improves air quality	Reduction in CO_2 emissions
2. Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Person hours of delay
3. Improve Multimodal Access to/from and across Highway 101	Enhances connectivity and removes access barriers	Improved connectivity for transit
		Improved intermodal pedestrian connectivity and ADA access
		Improved bicycle infrastructure and gap closure; level of comfort
4. Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecasted growth
	Reduces transportation costs	Cost of delay
	Promotes social equity	Benefits Equity communities
5. **Implementability**	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)
	Ease of regulatory approval	Ability to gain project approvals
	Benefit to costs	Delivers high benefit for project cost

SCORING AND WEIGHTING

Each performance measure could score within the range of 1 to 5. As there are a differing number of performance measures under each evaluation criteria and/or each Goal and Objective, the score was averaged across each performance measure to provide a single score for the overall goal category.

The scoring reflects the relative benefit provided under each measure, as follows:

5 – High
4 – Med/High
3 – Med
2 – Low/Med
1 – Low

A weighting factor was then applied to the goal category that provided a weighting rank as a percentage that would total 100%. The weighting factor was determined in consultation with the TAM Executive Committee, and it reflects the relative importance of each goal to the Executive Committee, as shown in **Table 2**.

Table 2: Weighting

Goal	Weight
1. Enhance Health and Safety	23%
2. Relieve Local Traffic Congestion	22%
3. Improve Multimodal Access to/from and across Highway 101	20%
4. Promote Economic Vitality	15%
5. Implementability	20%
Total	**100%**

The resulting scores are shown on the following chart, along with the estimated implementation costs (in 2021 dollars).

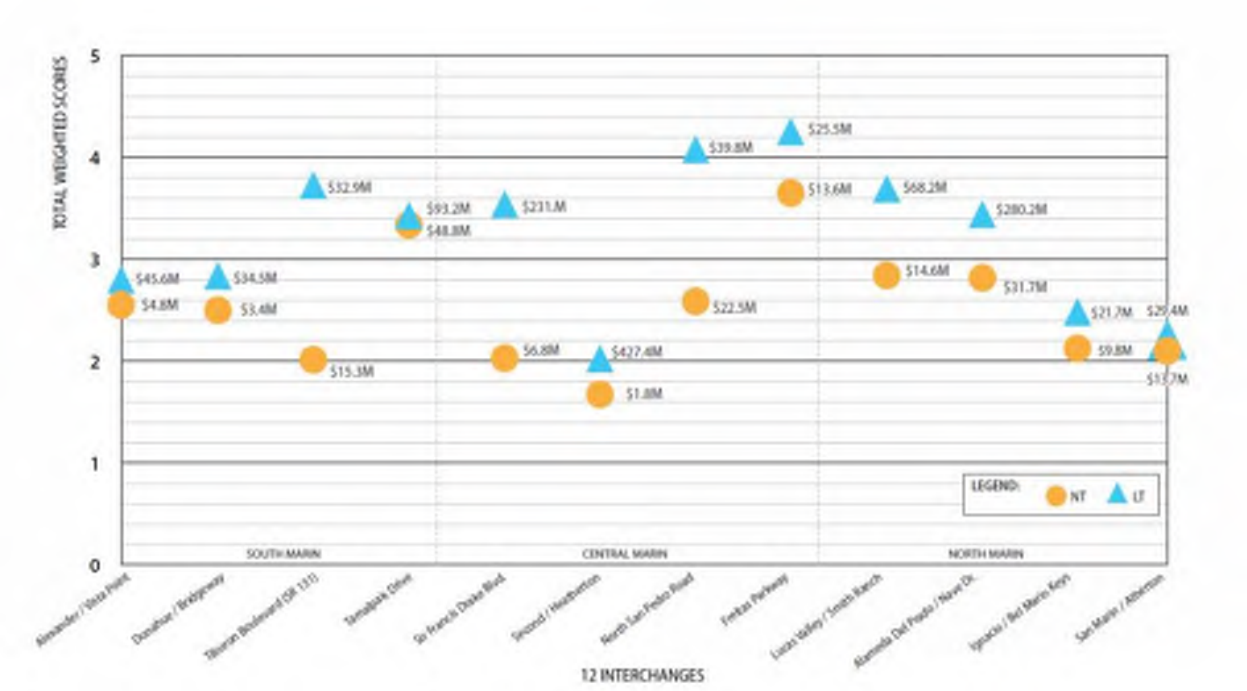

Figure 2: Total Weight Scores and Costs Graph

Figure 2 shows the 12 study interchanges on the Y-axis and a total weighted score range from 0 to 5 on the Y-axis. The blue triangles represent the long-term concepts, and the orange circles represent the near-term concepts. Each of the near- and long-term concepts have a cost to the right or above the symbol.

Sensitivity Tests

Separate "sensitivity test" evaluations were requested and conducted to see how different priorities could change the overall scores for each near- and long-term interchange concept. These included reducing the weighting that supported relief of local traffic congestion and increasing the weighting that supported equity parameters.

When focusing on **active transportation and transit**, most long-term concepts with current or expected traffic congestion issues scored slightly lower than under their original scores, while those without congestion concerns scored slightly higher. The exception to this is when a long-term concept could enable provision of a strong active transportation or transit improvement that would not be possible without the higher level of investment, for example at:

- Alexander Avenue/Vista Point
- Donahue Street/North Bridge Boulevard/Bridgeway
- Ignacio Boulevard/Bel Marin Keys Boulevard/Nave Drive
- San Marin Drive/Atherton Avenue

Most near-term concepts scored slightly higher than original scores and when prioritizing **equity**, the near- and long-term concepts generally scored similarly to the original scores. This finding validates that the original goal weights incorporated equity as a key consideration.

Overall, the sensitivity testing corroborated the original scoring results, (i.e., the general ranking of each interchange in comparison to other interchanges remained consistent).

The full evaluation scoring tables and graphs for the base evaluation and sensitivity testing are included in **Appendix F**

EVALUATION FINDINGS

The evaluation findings for long-term concepts are as follows:

- Long-term concepts generally score higher than near-term concepts, especially at interchange locations that experience or are expected to see traffic congestion issues
- Two long-term concepts rise to the top for each Marin region:
  - *South:* Blithedale Avenue/Tiburon Boulevard and Tamalpais Drive/Paradise Drive
  - *Central:* North San Pedro Road/Merrydale Road and Manuel T. Freitas Parkway/ Civic Center Drive
  - *North:* Lucas Valley Road/Smith Ranch Road and Alameda del Prado/Nave Drive
- Total cost of improving all 12 long-term concepts is $1.33 billion (2021 dollars)
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The evaluation findings for near-term concepts are as follows:

- Several near-term concepts have substantially lower costs than their long-term counterparts, but they score almost as high since congestion is not as significant an issue at these locations compared to other factors.
- Total cost of all 12 near-term concepts is $182 million (2021 dollars).
- Interchanges with compatible near-term and long-term scores, but with near-term costs at least 50% less (by near-term rank) are:
  - Alameda del Prado/Nave Drive
  - Alexander Avenue/Vista Point
  - Donahue Street/North Bridge Boulevard/Bridgeway
  - Ignacio Boulevard/Bel Marin Keys Boulevard/Nave Drive
  - San Marin Drive/Atherton Avenue
  - Second Street/Hetherton Street

Funding Outlook

The Highway 101 Interchange and Approaching Roadway Study is funded through Measure AA. The funding will be used to leverage regional, State, and federal funds for a program of improvements that will be determined through the TAM Board in coordination with Caltrans, local jurisdictional, and other stakeholders.

Regional and State transportation funding opportunities increased with passage of the Bay Area's Regional Measure 3 in June 2018, and California's Senate Bill 1 (SB1) in 2017. Federal funding is anticipated to play a larger role with recent passage of the Infrastructure Investment and Jobs Act (IIJA) on November 15, 2021. In addition, the Highway 101 interchange improvement projects are anticipated to be competitive to a number of grant programs that promote regional and State goals for sustainability and equity, access and mobility, congestion management, clean air, and climate action, such as the Active Transportation Program (ATP), the Transportation Fund for Clean Air (TFCA), and the Climate Action Plan for Transportation Infrastructure (CAPTI).

The following section provides an overview of the various funding programs that may support the Highway 101 interchange improvements program. A more comprehensive listing of potential funding sources is included in **Appendix G**.

FUNDING PROGRAMS

Local and Regional Programs

- The 2018 **Measure AA** Expenditure Plan allocates 3% of sales tax revenues under Implementation Category 1.3 to improve Highway 101 local interchanges and freeway access routes to reduce congestion, improve local traffic flow, and address flooding impacts throughout the county. According to the original Transportation Sales Tax Strategic Plan, it is expected to generate $24.8 million within the measure's 30-year lifespan. Other potential sources of funding within the measure that may support elements of the Highway 101 interchange improvements program include several categories under Category 2: Maintain, Improve, and Manage Marin's Local Transportation Infrastructure, and under Category 3: Reduce School-Related Congestion and Provide Safer Access to Schools.
- The **One Bay Area Grant** (OBAG) program, created by MTC to establish policies and programming of federal surface transportation funds. Partly administered by TAM, these funds are required to be dedicated to areas that support OBAG goals. ,
- The **Lifeline Transportation Program** has historically been funded by a combination of federal and State operating and capital funding sources that support projects that

address mobility and accessibility needs in low-income communities throughout the region.

- The **Transportation Fund for Clean Air (TFCA)** revenues are collected from a $4 surcharge fee on vehicles registered in the Bay Area that generates about $22 million each year in the Bay Area to fund projects that reduce motor vehicle emissions within the Bay Area Air Quality Management District (BAAQMD). TAM serves as the county program manager for Marin County.
- **Traffic Impact/Mitigation Fees** are collected by some jurisdictions to compensate for impacts of new traffic generated by development projects within their respective communities, typically based on the basis of new trips generated.

State Programs

The following state sources provide funding to a variety of capital improvement projects, including highway, transit, local roadway, and bicycle/pedestrian projects. Marin County has relied on state funding for the development of highway improvement projects. State sources also include a variety of grant programs, such as the Cap-and-Trade Program with programs benefiting housing, GHG reduction, and equity policy goals.

- **California State Transportation Improvement Program** (STIP) – The STIP is a multi-year capital improvement program of transportation projects on and off the state highway system that are funded with revenues from the State Highway Account and other funding sources. The STIP is composed of two sub-elements: 75% of the STIP funds go toward the Regional Transportation Improvement Program (RTIP) and 25% go to the Interregional Transportation Improvement Program (ITIP). TAM adopts and forwards a program of RTIP projects to MTC for each STIP cycle. Due to advance programming several years ago, TAM does not expect to have STIP funds available for capital projects for several more cycles. As the Regional Transportation Planning Agency for the nine-county Bay Area, MTC is responsible for developing the regional priorities for the RTIP. MTC approves the region's RTIP and submits it to the California Transportation Commission (CTC) for inclusion in the STIP. Caltrans is responsible for developing the ITIP.
- **Highway Safety Improvement Program** (HSIP) – The purpose of the HSIP program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal land. California's share of HSIP funds is split between the State HSIP for State highways and the local HSIP for local roads.
- **State Highway Operations and Protection Program** (SHOPP) – The SHOPP is a four-year document of projects limited to capital improvements relative to the maintenance, safety, operation, and rehabilitation of the state highway system that do not add new capacity to the system. The 2022 SHOPP will implement $17.9 billion in projects over the next four years.

- **Active Transportation Program (ATP)** –The ATP consolidates existing federal and State transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SRTS), into a single program with a focus to make California a national leader in active transportation. ATP funding cycles cover four fiscal years and are programmed every other year in the odd years. ATP funding encourages increased use of active modes of transportation by funding bicycle and pedestrian projects that will lead to improved connections between local and regional roads, public transit, and passenger rail. ATP funds are primarily distributed to two programs – State and regional programs. The State program is administered by CTC and the Regional Program is administered in the Bay Area by MTC.
- **Senate Bill 1** (SB1) – The Roadway Repair and Accountability Act of 2017 was signed into law on April 28, 2017, by Governor Brown. SB1 invests $5.2 billion annually over the next decade to fix California's transportation system, and it does not sunset. $26 billion will go to local roads (including Marin County), and $26 billion will go towards the state highway system. SB1 funds a number of programs aimed at highway, bridge and culvert repairs, and congestion reduction through comprehensive multimodal approaches. SB1 has a number of funding programs relevant to the program:
  - **Solutions for Congested Corridors Program (SCCP)** provides 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 that 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.
  - The **SB1 Local Streets and Roads Program** (LSRP) dedicates approximately $1.5 billion annually for cities and counties to use on projects, such as road maintenance, safety enhancements, and complete streets.
  - The **SB1 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, SB1 augmented funding for three existing funding programs:

- **SB1 ATP** will make $100 million available annually over the next 10 years.
- **SHOPP** - The additional SB 1 SHOPP investment is estimated to provide approximately $1.5 billion annually to improve the condition of the state highway system, and $400 million annually for bridges and culverts.

- **STIP** - The STIP is the biennial five-year plan adopted by the CTC for future allocations of certain State transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. State law requires the CTC to update the STIP biennially, in even numbered years, with each new STIP adding two new years to prior programming commitments. SB 1 stabilizes funding for the **STIP**.

Federal Funding Sources

The IIJA, signed into law by President Biden on November 15, 2021, provides approximately $350 billion for federal highway programs over a five-year period (fiscal years 2022 through 2026). Most of this funding is apportioned (distributed) to states based on formulas specified in federal law; however, it also provides funding through a wide range of competitive grant programs. Programs include congestion relief, healthy streets, resiliency, bridge investment, and safe streets.

- **Rebuilding American Infrastructure with Sustainability and Equity (RAISE)**, formerly called BUILD and TIGER under previous administrations, gets a modest increase to $1.5 billion per year ($7.5 billion over five years). The discretionary grants can be used for a wide variety of projects awarded on the basis of merit under statutory criteria, including safety, environmental sustainability, quality of life, economic competitiveness and opportunity, state of good repair, mobility and community connectivity, and partnership and innovation.
- **Infrastructure for Rebuilding America (INFRA) Grant Program** provides $10.9 billion over 5 years for competitive grants, including highway or bridge projects to add capacity or improve mobility, intermodal or freight projects, and rail-highway grade crossing separations.
- **Safe Streets and Roads for All Grant Program** (SS4A) provides $5 billion in competitive grants to support local initiatives to prevent death and serious injury on roads and streets, commonly referred to as ‘‘Vision Zero’’ or ‘‘Toward Zero Deaths’’ initiatives.
- **Innovative Technology to Enhance Arterials (IDEA)** funds help agencies improve the operation of major arterial roadways and make these streets better prepared for connected and automated vehicle technologies. The program's main goals are to reduce travel times and improve travel-time reliability on major arterials; improve safety for drivers, transit riders, bicyclists, and pedestrians; reduce vehicle emissions and fuel consumption; and advance public agencies' proficiency in the use of advanced technologies for arterial operations.
- **Reconnecting Communities Pilot (RCP)** is a new $1 billion 5-year discretionary grant program that supports planning, capital construction, and technical assistance to restore community connectivity through the removal, retrofit, mitigation or replacement of eligible transportation infrastructure that creates barriers to mobility, access, or economic development.

Agency and Public Outreach

To help inform and support the project goals and objectives and to guide the development of conceptual improvements, the project team conducted several rounds of meetings with Caltrans, jurisdictional agencies along the project corridor, and transit agencies. TAM also conducted an online survey soliciting input from Marin County residents and travelers.

AGENCY OUTREACH

The project team met with the representatives from the Public Works and Planning departments of the jurisdictions along the project corridor, Marin Transit, and the Golden Gate Bridge, Highway and Transportation District (GGBHTD) to advise them of the project. The team solicited input from them to inform the concept development and to gain concurrence on the goals and objectives, evaluation methodology, and recommendations for project prioritization. A number of meetings were held at particular milestones for the project to keep the agencies abreast on project development:

- Project introduction to agency stakeholders, December 2020
- Concept development meeting with agency stakeholders, April-June 2021
- Presentation of near- and long-term concepts to agency stakeholders, August-September 2021
- Presentation of evaluation results to agency stakeholders, May 2022

The project team also held meetings with Caltrans District 4 Advance Planning representatives to inform them of the project status and to solicit input as needed. A total of four meetings were held in June 2020, June 2021, December 2021, and June 2022.

The project team also presented the project's Evaluation Methodology to the MPWA to solicit its input on the evaluation process.

TAM COMMITTEE AND BOARD ENGAGEMENT

In addition to meeting with representatives from local jurisdictions, the project team provided briefings to the TAM AP&P Executive Committee, and Board for selection of the 12th interchange, to establish the project goals and objectives for evaluation purposes, and to confirm the evaluation and scoring methodology. A total of four presentations were made to the AP&P Executive Committee, and a fifth presentation is planned to seek input on the study recommendations for program implementation in this report.

PUBLIC OUTREACH

An online survey was conducted between March 17 and April 16, 2021, to solicit input from Marin County residents and travelers on the project study interchange locations. The survey was conducted in both English and Spanish, and it solicited public input on how they travel through the specific interchange, travel purpose, and priorities for selected improvements to the interchange. More than 2,750 people responded to the survey. The feedback received informed the team on community values and preferences, and it provided valuable information on modes of travel, purpose, observed deficiencies, and priorities for improvement.

The study findings will be reported back to the public through expanded project content on the TAM website, including a report on the survey results; links to the Existing Conditions, Constraints, and Opportunities Reports developed under this study; and conceptual improvement plans for each of the 12 interchanges. Opportunity for further feedback will be provided through the website, with comments saved for possible future phases of project development.

The project website can be found at the following link: https://www.tam.ca.gov/101study/.

Implementation

PROJECT DEVELOPMENT PROCESS

All projects on the state highway system follow the Caltrans project development process as outlined in the Project Development Procedures Manual, and they require coordination with the Caltrans Systems Planning and Advance Planning groups, local jurisdictions, MTC, and CTC. MTC is the transportation planning, financing, and coordinating agency for the nine-county San Francisco Bay Area, and CTC is responsible for programming and allocating funds for the construction of highway, passenger rail, transit, and active transportation improvements throughout California. This coordination effort ensures there is consensus on the proposed improvement projects that are adopted into the financially constrained Regional Transportation Plan, and that they are compatible with regional and statewide goals and objectives for mobility and connectivity.

Project development involves the following:

Planning: The Existing Conditions, Constraints, and Opportunities Reports prepared under this study serve as feasibility studies to define the planning concepts and scope of the proposed improvement. Namely, they identify and clarify the specific transportation system problem, establish goals and objectives, and look for practical solutions.

Project Initiation: The next step is preparation of a Project Initiation Document (PID), which is used to obtain approval for inclusion of a project into a programming document or to get conceptual approval of a project-funded-by-others (i.e., projects that are sponsored by a local agency and do not use any State or federal funds).

The PID, typically a Project Study Report-Project Development Support (PSR-PDS), establishes a well-defined purpose and need statement, proposed project scope and schedule, and estimated support costs and resources necessary to advance the project to the Project Approval and Environmental Document (PA&ED) phase. However, the level of engineering detail and effort for developing a PSR-PDS is limited to the effort needed to develop the work plan for the PA&ED phase and to develop a "ballpark" estimate of the construction cost. A full PSR provides conceptual approval and is used to program all support, right of way acquisition, and construction costs. For projects to be programmed into the STIP, a project programming request (PPR), as described in the STIP Guidelines, must be included as an attachment to the PID. An approved PID is required for any major work on the state highway system regardless of how it is funded.

Project Approval and Environmental Document: When an environmental document is prepared for a project, it is a key project approval document. The environmental document is prepared to assure that the project complies with State and federal environmental laws.

All project activities, such as the development of project alternatives, public input, and selection of the preferred alternative, are discussed in the final environmental document. Projects with draft environmental documents require the preparation of a draft project report (DPR) prior to finalizing the project report (PR). The DPR documents the need for the transportation project and summarizes the studies of the cost, scope, and overall impact of project alternatives so that an informed decision can be made on whether or not to proceed to the public hearing phase of project development. After a public hearing and the selection of a preferred alternative, the DPR is updated to become the PR.

When a project is statutorily or categorically exempt under the California Environmental Quality Act of 1970 (CEQA) and categorically excluded under the National Environmental Policy Act of 1969 (NEPA), there is no environmental document so all information must be provided in the PR.

The PR documents approval by Caltrans for most types of state highway projects. This includes new facilities, as well as improvements, modifications, or repairs to existing facilities — whether done by Caltrans or by others under an encroachment permit.

When a PSR-PDS is used to initiate the project, a PR will be used to program the remaining support, right of way, and construction costs.

Project Design: Once the preferred alternative has been chosen and the project has been approved, project design (preparation of plans, specifications, and estimate [PS&E]) can be initiated. Typical steps involve 35%, 65%, 95%, draft 100%, and final PS&E with reviews by Caltrans District and Headquarters Division of Engineering Services. An environmental reevaluation should be conducted to confirm the project design is within the framework of the project approval document, which includes the environmental document.

Prepare and Advertise Project Contract: At the completion of design work, some additional details need to be completed prior to advertising the contract. Right of way certification and a CTC funds request approval must be obtained. The final project documents and bid package are then assembled to prepare the project for advertising.

Conduct and Complete Construction Project: Contract approval authorizes construction of the project. The project is constructed, and the contract is administered according to the PS&E that was developed by the project engineer. The resident engineer for the project prepares the final construction project records when the project is complete, including any design changes during construction. The final contract estimate, project history file, and the as-built plans for the project are completed before the project is complete.

A cooperative agreement with Caltrans is required if the phase, will involve the exchange of funds, effort, or materials between Caltrans and another public entity for each phase of the project development process.

An outline of the project development process and levels of environmental review is included in **Appendix H**.

PROJECT DELIVERY

Identified improvement projects may be sponsored by Caltrans, TAM, or the local jurisdictions. It is anticipated that TAM will sponsor up to three PIDs under the Highway 101 Interchange program. They may also sponsor local projects that qualify for implementation under the Caltrans encroachment permit process, once environmental clearance is obtained.

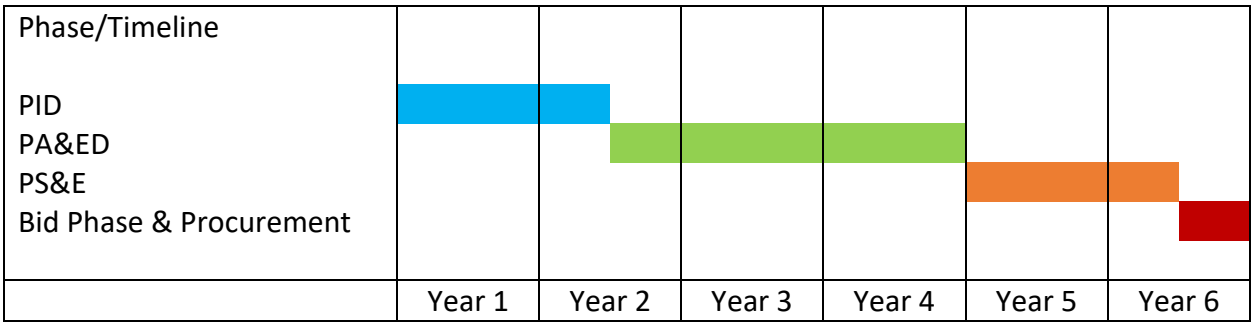
Other improvement projects or project elements that remain outside of State right of way could be completed by the local jurisdictions as standalone projects without entailing Caltrans project development processes or as phased implementation of a larger sequence of improvements, as funding availability permits.

Additionally, elements of the project could be incorporated into ongoing projects or new projects sponsored by Caltrans.

A list of potential local projects is included in **Appendix I**. The current TAM 3-year PID listing is included as **Appendix J**.

TIMELINE

The following chart provides a representative timeline for project development of a comprehensive improvement project that is going through the Caltrans project development process.



Study Recommendations

The estimated cost of implementing all 12 long-term interchange plans is $1.33 billion (2021 dollars). This level cannot be met under foreseeable funding levels. An acceptable implementation strategy needs to reasonably consider limited funding that may be available over time as well as immediate needs against long-term issues and locations where development fees may support improvements. It should also consider geographic equity. Also, project implementation must align with funding plans and priorities (such as the Climate Action Plan for Transportation Infrastructure).

The evaluation process identified three interchange areas that should be pursued for comprehensive multimodal enhancements. The following three interchange areas were recommended for project planning, which is consistent with Caltrans' PID procedures:

- East Blithedale Avenue/Tiburon Boulevard (Highway 131) - #3
  - Highest scoring long-term concept in Southern Marin, including with equity focus
  - Addresses multimodal needs
  - Serves as gateway to several municipalities (Mill Valley, Strawberry, Tiburon, and Belvedere)
  - Modest long-term total cost of $32.9 million; can potentially be phased
- Manuel T. Freitas Parkway/Civic Center Drive - #8
  - Highest scoring of all interchanges for near- and long-term concepts
  - Addresses multimodal needs
  - Provides key safety enhancements
  - Modest long-term total cost of $25.5 million; can be phased
- Alameda del Prado/Nave Drive - #10
  - Near-term concept can retrofit existing facilities with modest new construction to meet goals at a fraction of long-term plan costs
  - Addresses multimodal needs
  - Modest near-term total cost of $31.7 million; can be phased

TAM's Executive Committee and the Public Works Departments of the participating Marin jurisdictions concur with the above three priority interchanges.

For the remaining nine interchanges, it is recommended that planning and development of refined near-term project components be pursued over time and as practical. Potential enhancements include:

- Alexander Avenue/Vista Point
  - Identified near-term active transportation, transit, and safety projects
  - Coordinate with the Golden Gate Bridge, Highway and Transportation District and the National Park Service
- Donahue Street/North Bridge Boulevard/Bridgeway
  - Identified near-term active transportation, transit, and safety projects, including traffic signal and lighting upgrades
- Tamalpais Drive/Paradise Drive
  - Identified near-term active transportation, transit, and safety projects
  - Coordinate with Caltrans on ongoing project
  - Consider northbound auxiliary lane to Wornum Drive
- Sir Francis Drake Boulevard/Fifer Avenue/Industrial Way
  - Identified near-term active transportation, transit, and safety projects
  - Consider northbound auxiliary lane from Tamalpais Drive
  - Consider future PID and phased implementation
- Second Street/Hetherton Street
  - Potential near-term restriping of southbound on-ramp and mainline Highway 101
  - Long-term project development by Caltrans
- North San Pedro Road/Merrydale Road
  - Identified near-term active transportation, transit, and safety projects
  - Northbound off-ramp modification for buses
- Lucas Valley Road/Smith Ranch Road
  - Identified near-term active transportation, transit, and safety projects
  - Consider future PID in concert with potential development projects
- Ignacio Boulevard/Bel Marin Keys Boulevard/Nave Drive
  - Identified near-term active transportation, transit, and safety projects
  - Relocate bus stops
- San Marin Drive/Atherton Avenue
  - Identified near-term active transportation, transit, and safety projects
  - Roadway lane reallocations and signal upgrades

AGENCY NEXT STEPS

The following steps will need to be taken by TAM and the local jurisdictions/agencies to move projects forward towards implementation:

1. TAM Board to select project(s) to move forward into project development in consultation with agency stakeholders.
2. TAM and the local jurisdiction will coordinate with MTC to have the project included in the current Regional Transportation Plan (RTP).
3. TAM will secure funding for the PID and enter into a Cooperative Agreement with Caltrans for project development.
4. TAM will work with the local jurisdiction and a Project Development Team to prepare the PIDs for Caltrans approval.
5. TAM and the local jurisdiction will seek funding for subsequent phases of the project.

Appendices

A. Goals and Objectives and Selection of 12th Study Interchange: TAM Board Action July 2020
B. Interchange Concept Plans
C. Evaluation Methodology Memo: Administration, Projects & Planning Executive Committee Discussion July 2021
D. Evaluation Methodology Confirmation: TAM Board Action February 2022
E. Evaluation Methodology Changes Memo
F. Evaluation Tables and Graphs
    a. Evaluation Goal 1 Rubric Summary
    b. Evaluation Goal 2 Rubric Summary
    c. Evaluation Goal 3 Rubric Summary
    d. Evaluation Goal 4 Rubric Summary
    e. Evaluation Goal 5 Rubric Summary
    f. Active Transportation and Transit Focus Sensitivity Graph
    g. Equity-focused Sensitivity Graph
G. Funding Outlook Table
H. Project Development and Approval Process
I. List of Potential Local Projects
J. Caltrans 3-Year PID List

Appendix A

Goals and Objectives and Selection of 12th Study Interchange: TAM Board Action July 2020

DATE: July 23, 2020

TO: Transportation Authority of Marin Board of Commissioners

FROM: Anne Richman, Executive Director
Bill Whitney, Principal Project Delivery Manager

SUBJECT: Highway 101 Interchange and Approaching Roadway Study – Concur with Program Goals and Objectives and Approve Adding an Additional Interchange to the Project List, Agenda Item No. 6c (Action)

RECOMMENDATION

The TAM Board reviews and approves the Program Goals and Objective and approves Alameda Del Prado/Nave Drive Interchange as the additional interchange to be studied.

The Administration, Projects and Planning (APP) Executive Committee reviewed this item at its July 13, 2020 meeting and voted unanimously to refer it to the TAM Board for approval.

BACKGROUND

The Highway 101 Interchange and Approaching Roadway Study is a new project that was included in the Measure AA ½-Cent Transportation Sales Tax Expenditure Plan. The Expenditure Plan allocates 3% of the revenue from the sales tax, estimated at $24.8 million over the 30-year period of the Measure.

The Expenditure Plan states the following:

"Accessing Highway 101 in Marin is a major source of congestion on local roads, which reduces the connectivity of communities across Marin. These funds would be used to attract regional, state, and federal funds for a program of improvements to local road interchanges. These improvements would improve the operation and safety of these interchanges for all users, allowing smoother travel to and from Highway 101 and local roads. The funds provide seed money to perform the planning, the public outreach, and to develop the scope of improvements needed at these interchanges. The interchange planning would include recommended improvements for all users."

The funds would address Highway 101 interchanges at eleven locations in Marin as listed below:

- Alexander Avenue
- Sausalito / Marin City
- Tiburon Blvd / East Blithedale
- Paradise Drive/Tamalpais Drive
- Sir Francis Drake Blvd
- San Rafael Onramp at 2nd Street and Hetherton Avenue

- Merrydale Road/North San Pedro Road
- Manuel T Freitas Parkway
- Lucas Valley/Smith Ranch Road
- Ignacio Blvd
- San Marin Drive/Atherton Avenue

The Board, at its April meeting, authorized the Executive Director to retain the professional services of the consulting firm of HNTB. HNTB has teamed up with Parisi Transportation Consulting as well as other consulting firms to provide specialized services such as structural condition assessment, development and prioritization of improvement concepts, and public outreach.

DISCUSSION

Study Approach

The overall approach to begin the study program is to identify operational and safety improvements for all users of an interchange and approaching roadways including adjacent intersections. Many of the Highway 101 interchanges were built many years ago when Marin's traffic was much different than today and are considered to have numerous operational deficiencies and non-standard features as compared to current design practices. They were also built during an era that was auto centric and did not accommodate or equally consider other users such as pedestrians and cyclists.

Staff is proposing a multi-step process to understand and document the existing conditions of the interchanges and approaching roadways and then identify deficiencies that contribute to congestion and impact mobility and safety. As a first step we are proposing to initiate an in-depth study of each interchange location and to prepare an independent report that will recommend a series of actions to address the identified needs.

The following will be the steps taken in this initial scope of work:

- Identify and Establish Program Goals and Objectives
- Develop Evaluation Criteria & Performance Metrics
- Conduct Focused Stakeholder Engagement
- Perform Cost-Effective Data Collection & Review of Existing Reports and Studies
- Perform Traffic Assessment & Forecasts
- Identify Deficiencies, Constraints and Opportunities
- Prepare Planning Level Cost Estimates and Cost-Benefit Analysis
- Determine Sea Level Rise Susceptibility and Adaptive Capacity
- Prepare Interchange Study Report (for up to 12 Interchanges)
- Prepare a Prioritization and Implementation Plan
- Identify and Pursue Funding Opportunities

TAM will work collaboratively with our member agency staff, including the Public Works Departments and Community Development Departments as well as Golden Gate Bridge Highway and Transportation District (GGBHTD), Marin Transit, and Caltrans. We will also engage interested stakeholders throughout the communities where the interchanges are located. We envision a web-based survey to engage the public and solicit input and will host a small-scale workshop in Southern Marin, Central Marin and Northern Marin as the studies are developed.

Goals and Objective

Establishing a clear and concise set of goals and objectives is a critical step to help guide TAM as we begin the study process. By using the foundation of program goals established by the Board the team can remain focused and advance these studies as efficiently as possible. Staff is proposing five major categories of Goals and Objectives that will set the stage to establish Evaluation Criteria. The evaluation criteria will then be used to identify Performance Metrics. As the improvement options and/or alternatives are developed they can be evaluated and prioritized for further consideration. The proposed goals and objectives are as follows:

Goal 1: Enhance Health and Safety
Goal 2: Relieve Local Traffic Congestion
Goal 3: Improve Multimodal Access to/from and across Highway 101
Goal 4: Promote Economic Vitality
Goal 5: Implementability

A Memorandum outlining the goals and objectives with draft evaluation criteria and draft performance measures is attached to this report (Attachment A). At this time, the evaluation criteria and performance measures are still being developed.

Consideration to Include Additional Interchange Location

The eleven interchanges listed in the Measure AA Expenditure Plan were selected using information from past Regional Transportation Plans (RTPs), previous studies and reports at interchange locations, Caltrans Project Initiation Documents (PID's), input from the Measure AA Expenditure Plan Advisory Committee and stakeholders, including jurisdictional partners and the public. The Expenditure Plan did not state the eleven "would" be studied, only that they "may be" studied. The Measure AA Expenditure Plan was crafted to not preclude other locations from being considered.

As the interchange program was developed and based on previous discussions with the APP Executive Committee, staff explored options to complete a high-level review of the remaining interchanges not included in the Measure AA Expenditure Plan, but which may warrant further consideration. There are known congestion points on local roads approaching Highway 101 that would not currently be considered a study area as part of this effort.

At the request of TAM, the consulting team has prioritized this effort as a first order of work to make the study process more effective and efficient. The attached Memorandum (Attachment B) defines the remaining access points to the Highway and outlines a process of elimination based on logical and technical criteria.

The Memorandum outlines specific considerations for the thirty access points and provides a discussion as to why certain locations warrant further consideration, or not. For example, the US 101/I-580 Interchange is being pursued separately and therefore is not included in this effort. The discussion narrows the remaining locations down to six logical candidates for consideration. A more in-depth analysis compared these six locations based on parameters such as traffic congestion, multi-modal safety including accident history, multi-modal access, and susceptibility to sea level rise and storm surge.

Based on the screening assessment and considering each of the factors, two interchanges stand out as potential candidates for evaluation as the additional, or twelfth study interchange: Shoreline Highway (Highway 1) and Alameda del Prado/Nave Drive. Both interchanges exhibit recurring traffic congestion, multimodal safety challenges, and multimodal access issues. Shoreline Highway also routinely experiences storm surge issues and is vulnerable to sea level rise. In contrast, the other four interchanges do not experience the same severity of problems.

When comparing the two interchanges, Alameda del Prado/Nave Drive experiences higher weekday traffic congestion, while on weekends Shoreline Highway can see substantial congestion levels and back-ups. The total number of reported collisions over a five-year period was about twice as high at Alameda del Prado/Nave Drive compared to Shoreline Highway.

The Shoreline Highway interchange is predicted to continue to experience impacts from sea level rise; on average the area floods 20 to 30 times a year between November and March. The interchange area has been studied over the years to address flooding and transportation issues with input from various stakeholders, including public and regulatory agencies. Many short-term strategies to address flooding have been implemented, but the ultimate solution that has been identified includes raising 1,500 feet of Shoreline Highway and 1,300 feet of Highway 101, including the Richardson Bay Bridge, by seven to nine feet (Caltrans Fact Sheet, US 101/State Route 1 Junction, January 2020). The ultimate plan is estimated to cost about $160 million. These projects are proposed to be added to the State Highway Operation and Protection Program (SHOPP) 10-Year Plan in FY 2024.

Another potential consideration in selecting between the Shoreline Highway and Alameda del Prado/Nave Drive interchanges is the intention of the language in the Measure AA Expenditure Plan. According to the plan, TAM's tax-generated funds "would be used to attract regional, state, and federal funds for a program of improvements to local road interchanges." Shoreline Highway is a state highway (Highway 1) that is owned and maintained by the State of California. Alameda del Prado and Nave Drive are local roadways within the City of Novato.

Therefore, due to Caltrans' implementation of short-term measures and intention to include major improvements to the Shoreline Highway interchange in the 2024 SHOPP, as well as the intention of the Measure AA Expenditure Plan, staff recommends including Alameda del Prado/Nave Drive as the twelfth interchange in TAM's program.

FISCAL IMPACTS

Funding for this project has previously been allocated from the voter approved Measure AA ½-Cent Transportation Sales Tax. No additional funds are needed to incorporate the additional Interchange into the study program. Staff anticipated this potential action and incorporated it into the scope of work.

NEXT STEPS

Upon approval of the TAM Board, staff will continue to advance the Study Program based on the established goals and objectives and include the Alameda Del Prado/Nave Drive Interchange as the twelfth interchange in addition to the eleven listed in the Measure AA Expenditure Plan. The team will begin to collect traffic and usage data at the interchange and local road locations. There is a large library of "big data" that exists pre-Covid19 and will be used in the studies, however the team will collect current vehicular, bicycle and pedestrian data and adjust it as necessary using engineering judgement and experience.

ATACHMENTS

Attachment A: Goals and Objectives Memorandum
Attachment B: Selection Process to Identify Twelfth Interchange Memorandum

Memorandum

Date: June 30, 2020
To: Bill Whitney, TAM
From: Kim Franchi, HNTB
David Parisi, Parisi Transportation Consulting
Subject: Highway 101 Interchange and Approaching Roadway Study: Goals and Objectives

INTRODUCTION

Throughout Marin County, Highway 101 serves as the primary north-south roadway and key link between communities. Twelve interchanges with existing deficiencies will be studied as part of TAM's Highway 101 Interchanges and Approaching Roadways project. Deficiencies identified to date include traffic congestion, intermodal connectivity, non-standard or outmoded design features, flooding, and vulnerability to sea level rise (SLR). The HNTB/Parisi team is working to objectively develop, evaluate, and prioritize potential improvements. This will facilitate implementation of approvable, phase-able, and fundable mobility solutions that effectively leverage local, state, and federal funding for short, medium, and long-term projects.

This memorandum provides a summary of proposed project goals and objectives, evaluation criteria, and associated performance measures against which improvement concepts can be developed, evaluated and prioritized. The HNTB/Parisi team requests feedback regarding the goals and objectives, their prioritization or relative weighting, and the evaluation methodology.

GOALS AND EVALUATION CRITERIA

The goals and objectives outlined below were compiled from the 2017 Strategic Vision Plan, 2018 Measure AA Final Expenditure Plan, the latest Highway 101 corridor planning documents, and numerous local, regional, and statewide sources, as referenced herein. They are intended to be aligned with the larger planning context to guide development of the Highway 101 Interchanges program as a whole and of the proposed interchange improvement concepts themselves. They are also intended to be aligned with the guiding principles outlined in the Measure AA Strategic Plan, which identifies the following themes on how the sales tax funds should be spent:

1. Maximize leveraging of outside fund sources
2. Support timely and cost-effective project delivery, ensuring all strategies progress towards measurable improvements
3. Maximize the cost-effective use of sales tax dollars
4. Promote a balanced use of funds throughout the County
5. Promote high environmental and conservation awareness

A summary of the proposed goals and evaluation criteria is included in Table 1.

Highway 101 Interchange and Approaching Roadway Study
Goals and Objectives

- **Goal 1: Enhance Health and Safety**[1]
  - Evaluation Criterion 1: Improve safety for all modes
    - *Performance Measure*: Reduction in prevalence of incidents
      Scoring: Higher scoring for concepts that would remedy non-standard design features or other features that contribute to potentially unsafe conditions
    - *Performance Measure*: Increased walking/biking[2]
      Scoring: Higher scoring for improvements that propose new or improved pedestrian/bicyclist infrastructure, including improvements that connect to existing infrastructure or close gaps
  - Evaluation Criterion 2: Reduces greenhouse gas (GHG) emissions and improves air quality
    - *Performance Measure*: Improved travel times
      Scoring: Higher scoring for improvements that improve traffic flow, thereby reducing emissions
    - *Performance Measure*: Reduction in delay
      Scoring: Higher scoring for improvements with the highest forecasted reduction in vehicle delays
    - *Performance Measure*: Incorporation of transportation system management (TSM) measures
      Scoring: Higher scoring for improvements that include TSM elements, thereby reducing vehicle emissions
- **Goal 2: Relieve Local Traffic Congestion**[3]
  - Evaluation Criterion 1: Alleviates congestion and improves traffic flow for current and future traffic
    - *Performance Measure*: Degree of improvement in
      - Level of Service (LOS) and average vehicular delays
      - Vehicle hours of delay
      - Vehicle miles traveled (VMT)

      Scoring: Higher scoring for concepts where greatest improvements would occur
- **Goal 3: Improve Multimodal Access to/from and across Highway 101**[4]
  - Evaluation Criterion 1: Enhances intermodal connectivity and removes access barriers
    - *Performance Measure*: Improved connectivity for vehicular and active transportation
      Scoring: Higher scoring for concepts that provide most improvement in connectivity for transit users, bicyclist, and pedestrians
  - Evaluation Criterion 2: Encourages mode shift from single-occupancy vehicles
    - *Performance Measure*: Mode shift to non-single occupant vehicles
      Scoring: Higher scoring for improvements that facilitate transit or HOV usage

[1] The "Getting Around Marin" online survey identified safety as a priority after travel time and flexibility (TAM Strategic Vision Plan, Figure 16 page 47). Factors that rated lower than safety included cost, comfort, and environment. This is also consistent with goals listed in MTC Plan Bay Area 2040 (Table 2.1 page 27) and is listed in the Caltrans US 101 North Comprehensive Corridor Plan.

[2] A guiding principle of the TAM Strategic Vision Plan was promoting a healthy environment and health population (Figure 1 page 14). The walking/biking network was identified as a means to support public health (page 37) by encouraging exercise.

[3] Transportation priorities identified during 2015 public outreach were ranked (TAM Strategic Vision Plan). Congestion relief was the public's top priority (Figure 15, page 45). Reduced congestion is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

[4] Public outreach identified multimodal priorities (bike facility installation/upgrades) as the second transportation priority (TAM Strategic Vision Plan). Bus, rail service, and safe routes to school were ranked as priorities three through six (Figure 15, page 45). Improved multimodal access is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan, as well.

- **Goal 4: Promote Economic Vitality**[5]
  - Evaluation Criterion 1: Accommodates future land use changes and growth
    - *Performance Measure*: Assessment of future operating conditions with forecast growth
      Scoring: Higher scoring for improvements that accommodate future anticipated growth with multimodal solutions[6]
  - Evaluation Criterion 2: Cost effectiveness
    - *Performance Measure*: Cost-benefit ratio
      Scoring: Higher scoring for interchanges with favorable ratios
  - Evaluation Criterion 3: Reduces transportation costs
    - *Performance Measure*: Peak period travel time
      Scoring: Higher scoring for improvements with lower peak period travel times[7]
- **Goal 5: Implementability**
  - Evaluation Criterion 1: Attractiveness to funding sources
    - *Performance Measure*: Funding criteria/potential
      Scoring: Higher scoring for projects that meet funding criteria[8], or could be substantially funded by multiple sources
  - Evaluation Criterion 2: Ease of regulatory approval
    - *Performance Measure*: Project can obtain necessary approvals
      Scoring: Higher scoring projects with limited right-of-way and/or permitting needs
    - *Performance Measure*: Environmentally cleared (or exempt)
      Scoring: Higher scoring for improvements with minimal environmental impacts (or exempt)
    - *Performance Measure*: Consistency with Regional Plans
      Scoring: Higher scoring for improvements whose needs have been identified in other published local or regional planning documents

REFERENCES:

California Department of Transportation. 2018. US 101 North Comprehensive Corridor Plan.

Metropolitan Transportation Commission. 2017. Plan Bay Area 2040.

Metropolitan Transportation Commission. 2016. San Francisco Bay Area Goods Movement Plan.

Transportation Authority of Marin. 2019. 2019 Congestion Management Program Update.

Transportation Authority of Marin. 2017. Getting Around Marin: Strategic Vision Plan.

[5] Consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

[6] Table 10 (page 39) lists major development projects in the near-term (TAM Strategic Vision Plan).

[7] US 101 is identified as a major goods movement corridor (MTC San Francisco Bay Area Goods Movement Plan). This highway also connects agriculture shippers with markets in the Bay Area. Highway reliability is a key to movement of goods (Table 4.1, page 27).

[8] For example, improvements that reduce traffic congestion, improve pedestrian/bike infrastructure, and expand transit services meets several categories of Marin County Measure AA funding (TAM 2019 CMP Update).

Highway 101 Interchange and Approaching Roadway Study
Goals and Objectives

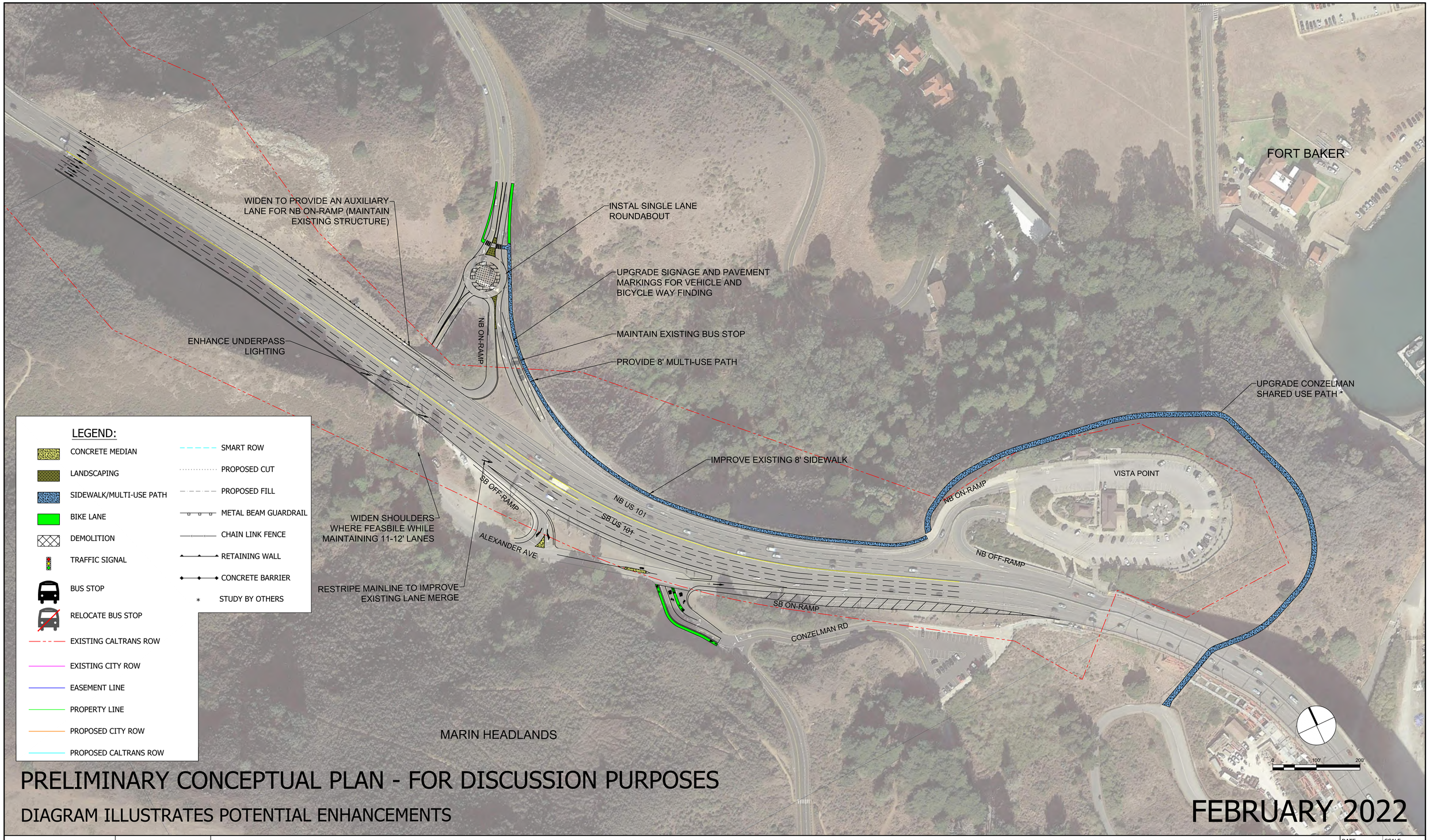
Table 1: Goals and Draft Evaluation Methodology

Goals & Objectives	Draft Evaluation Criteria	Draft Performance Measures	Prioritization/Weight (0-5)
Enhance Health and Safety	Improves safety for all modes	Reduction in prevalence of incidents	
	Increased walking/biking	Improved pedestrian/bicyclist infrastructure & gap closure	
	Reduces greenhouse gas emissions and improves air quality	Improved travel times	
		Reduction in delay	
		Incorporation of TSM Measures	
Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Level of Service and average vehicular delays	
		Vehicle hours of delay	
		Vehicle miles traveled (VMT)	
Improve Multimodal Access to/ from and across Highway 101	Enhances intermodal connectivity and removes access barriers	Improved connectivity for vehicular and active transportation	
	Encourages mode shift from single-occupancy vehicles	Mode shift to non-single-occupant vehicles	
Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth	
	Cost effectiveness	Cost-benefit ratio	
	Reduces transportation costs	Peak period travel time	
Implementability	Attractiveness to funding sources	Funding criteria/potential	
	Ease of regulatory approval	Project can obtain necessary approvals	
		Funded, environmentally cleared, or exempt	
		Consistency with Regional Plans	

Appendix B

Interchange Concept Plans

SOUTH



LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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Parisi TRANSPORTATION CONSULTING
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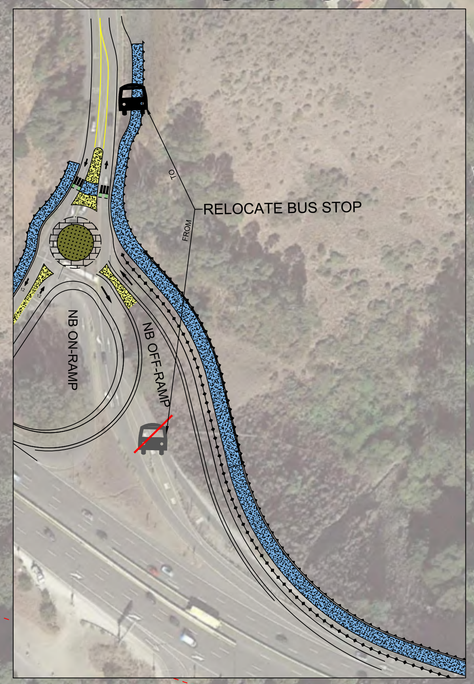
SAUSILITO, CA 94965
(415) 649-6000

HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
ALEXANDER AVENUE / VISTA POINT
NEAR-TERM IMPROVEMENTS

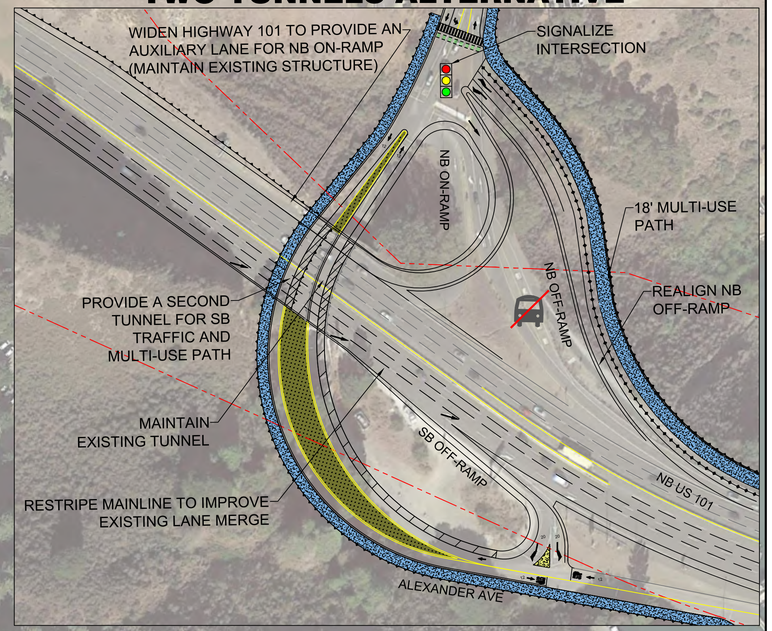
TAM Transportation Authority of Marin

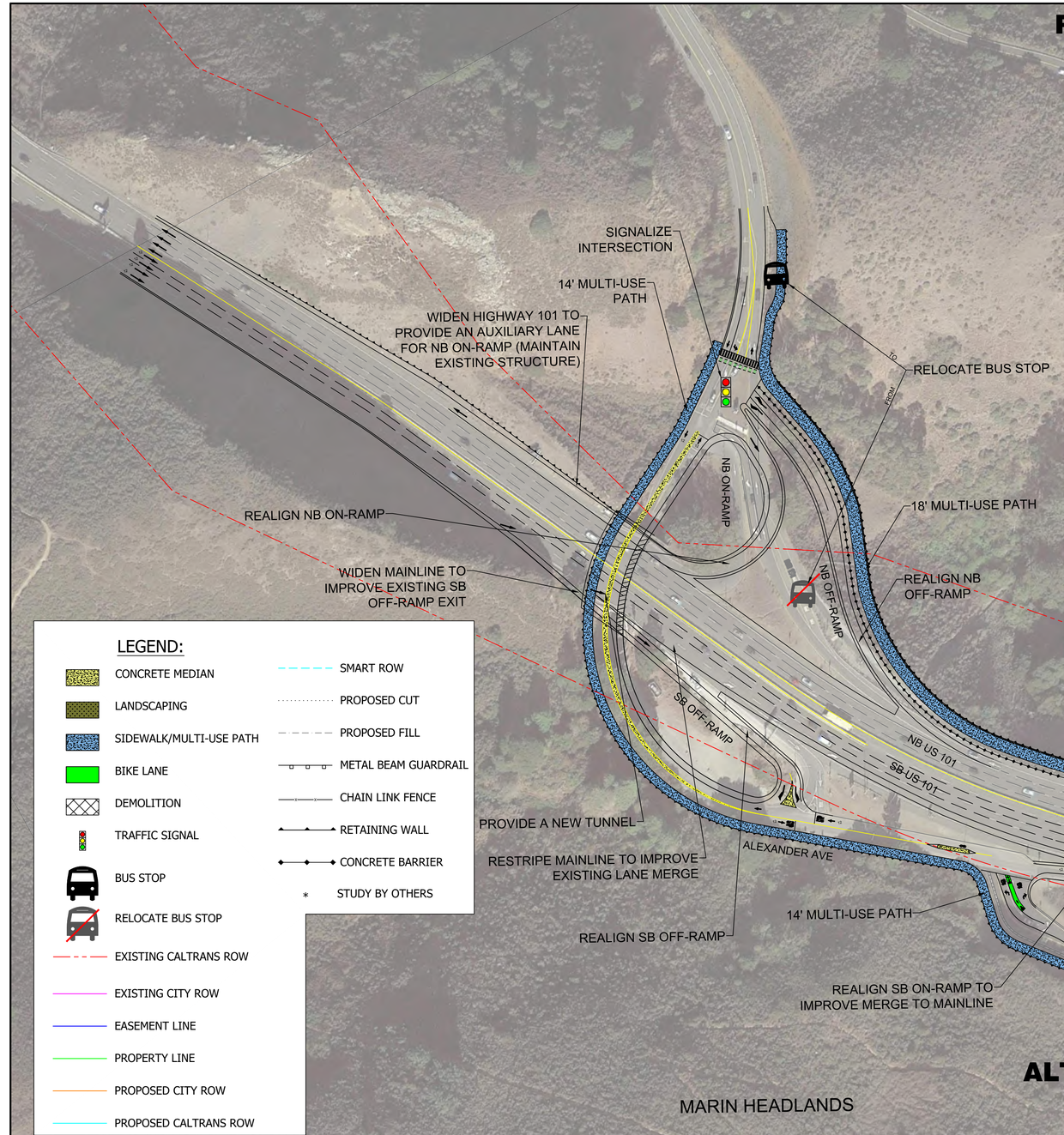
DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

ROUNDABOUT ALTERNATIVE AT ALEXANDER AVE RAMP INTERSECTION



TWO-TUNNELS ALTERNATIVE





LEGEND:

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- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
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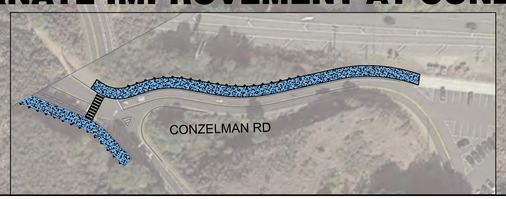
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

MARIN HEADLANDS

ALTERNATE IMPROVEMENT AT CONZELMAN



0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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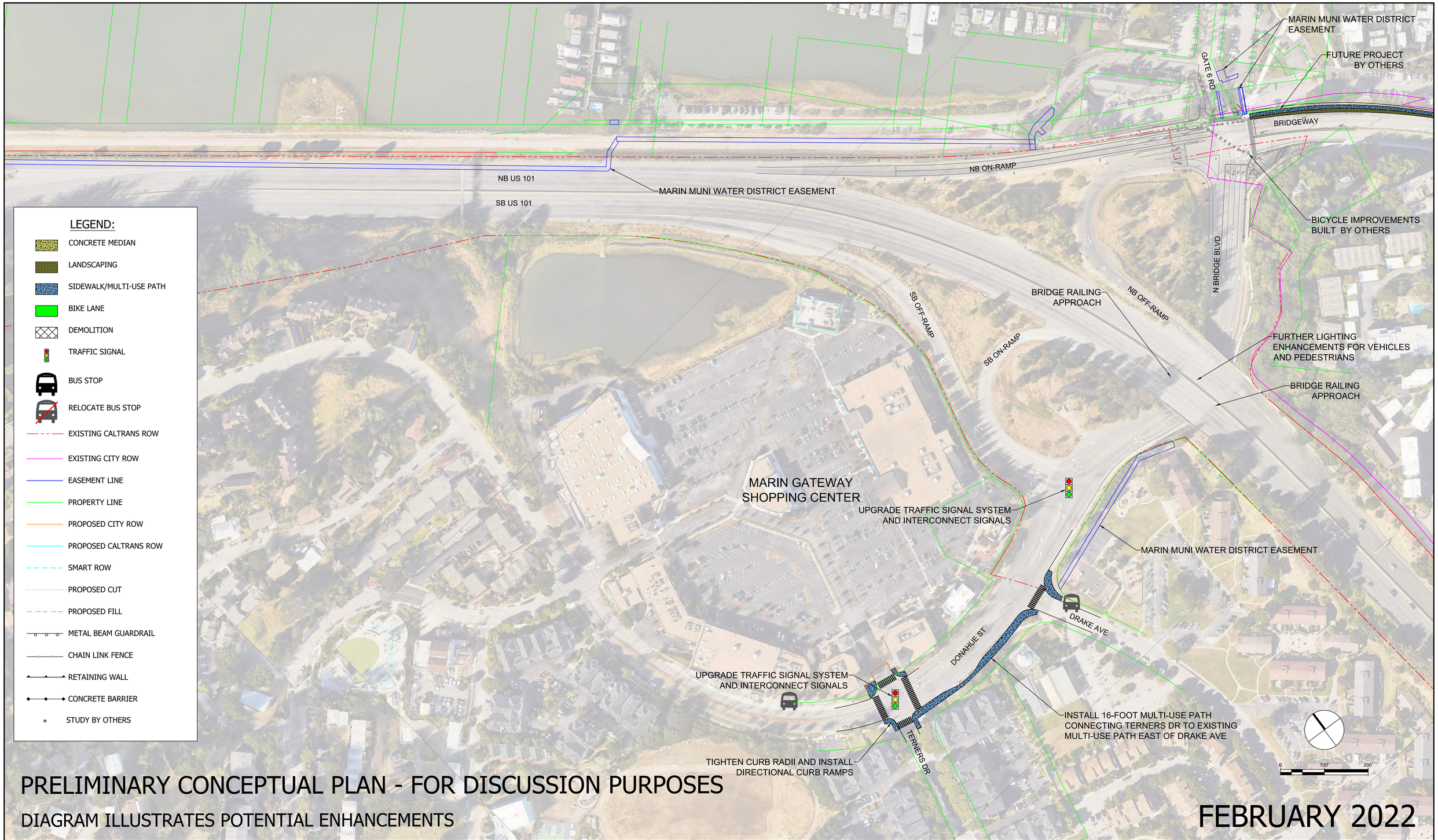
HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
ALEXANDER AVENUE / VISTA POINT
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	



PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

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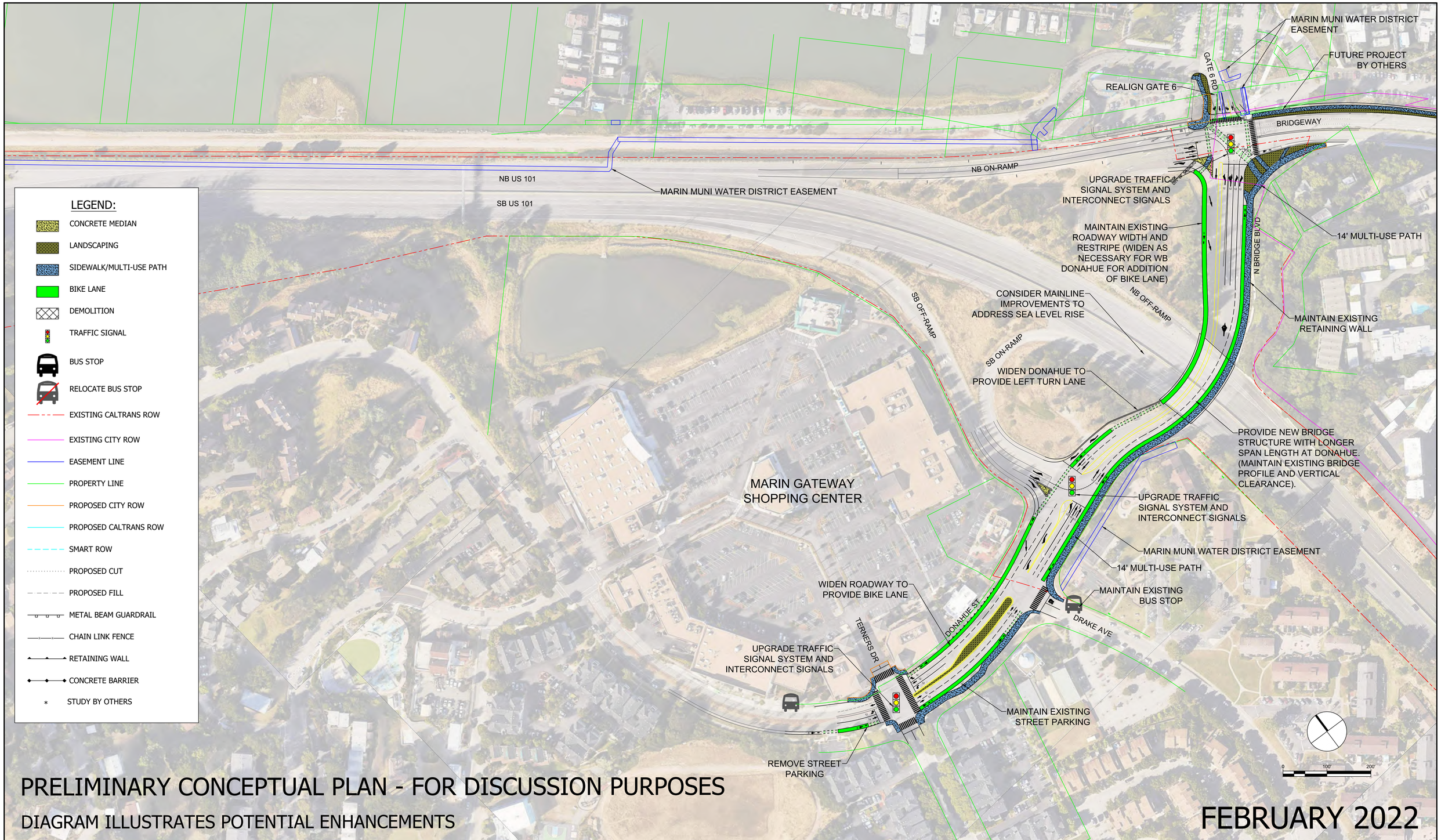
HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
DONAHUE STREET / NORTH BRIDGEWAY ROAD / BRIDGEWAY
NEAR-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	



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DONAHUE STREET / NORTH BRIDGEWAY ROAD / BRIDGEWAY
LONG-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

MERGE NB DIAGONAL ON-RAMP WITH AUXILIARY LANE

MATCHLINE A
SEE SHEET 3.2

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

TOWER DR

RELOCATE WALKWAY BETWEEN SOUTHBOUND RAMPS IN ORDER TO ELIMINATE AT GRADE UNCONTROLLED PEDESTRIAN CROSSING OF ON-RAMP *

RESTRIPE MAINLINE AND WIDEN TO PROVIDE AUXILIARY LANE

MARIN COUNTY

US-101

MAINTENANCE VEHICLE PULLOUT (MVP) *

SB OFF-RAMP

NB ON-RAMP

ADD BIKE LANES (TYP)

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

RAMP METER*

MARIN MUNI WATER DISTRICT EASEMENT

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

KIPLING DR

ADD BIKE LANES (TYP)

INSTALL HAWK FOR PEDESTRIAN AND BICYCLE CROSSING ON-RAMP (COORDINATED WITH REDWOOD HIGHWAY FRONTAGE ROAD INTERSECTION TIMING)

REALIGN SOUTHBOUND DIAGONAL ON RAMP*

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

KNOLL DR

CONSIDER PROTECTED INTERSECTION

E BLITHEDALE AVE

TIBURON BLVD

TRIM MEDIAN NOSE TO EXPEDITE LEFT-TURNING MOVEMENTS FROM SOUTHBOUND OFF-RAMP

SB ON-RAMP

REALIGN SOUTHBOUND LOOP ON RAMP*

TIGHTEN NORTHBOUND LOOP ON RAMP

0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

CITY OF MILL VALLEY

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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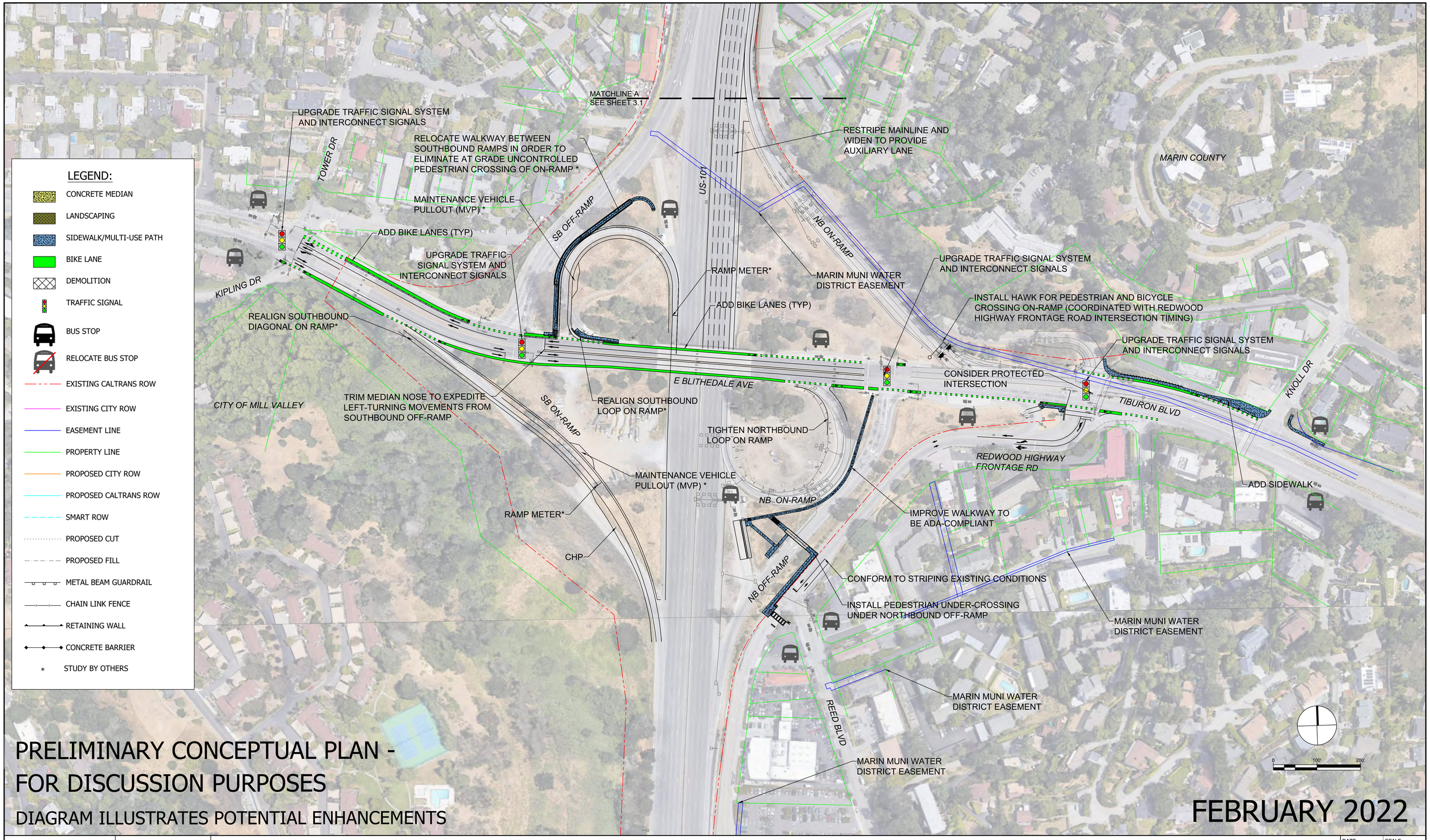
SAUSILITO, CA 94965
(415) 649-6000

TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.1



PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.2

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
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- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

MERGE NB DIAGONAL ON-RAMP WITH AUXILIARY LANE

MATCHLINE A
SEE SHEET 3.2

RESTRIPE MAINLINE AND WIDEN TO PROVIDE AUXILIARY LANE

MARIN COUNTY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

TOWER DR

RELOCATE WALKWAY BETWEEN SOUTHBOUND RAMPS IN ORDER TO ELIMINATE AT GRADE UNCONTROLLED PEDESTRIAN CROSSING OF ON-RAMP *

MAINTENANCE VEHICLE PULLOUT (MVP) *

US-101

MARIN MUNI WATER DISTRICT EASEMENT

SB OFF-RAMP

NB ON-RAMP

ADD BIKE LANES (TYP)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

KIPLING DR

E BLITHEDALE AVE

WIDEN BRIDGE TO THE SOUTH TO ALLOW FOR THREE EASTBOUND TRAVEL LANES

RAMP METERING SYSTEM INSTALLATION PROJECT*

ADD BIKE LANES (TYP)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

INSTALL HAWK FOR PEDESTRIAN AND BICYCLE CROSSING ON-RAMP (COORDINATED WITH REDWOOD HIGHWAY FRONTAGE ROAD INTERSECTION TIMING)

CONSIDER PROTECTED INTERSECTION

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

ADD SIDEWALK

KNOLL DR

ADD THIRD EASTBOUND TRAVEL ALNE

REALIGN SOUTHBOUND DIAGONAL ON RAMP*

SB ON-RAMP

REALIGN SOUTHBOUND LOOP ON RAMP*

TIGHTEN NORTHBOUND LOOP ON RAMP

0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.1

MATCHLINE A
SEE SHEET 3.1

RESTRIPE MAINLINE AND WIDEN TO PROVIDE AUXILIARY LANE

MARIN COUNTY

RELOCATE WALKWAY BETWEEN SOUTHBOUND RAMPS IN ORDER TO ELIMINATE AT GRADE UNCONTROLLED PEDESTRIAN CROSSING OF ON-RAMP *

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

TOWER DR

US-101

MAINTENANCE VEHICLE PULLOUT (MVP) *

MARIN MUNI WATER DISTRICT EASEMENT

SB OFF-RAMP

NB ON-RAMP

ADD BIKE LANES (TYP)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

KIPLING DR

E BLITHEDALE AVE

WIDEN BRIDGE TO THE SOUTH TO ALLOW FOR THREE EASTBOUND TRAVEL LANES

RAMP METERING SYSTEM INSTALLATION PROJECT*

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

ADD BIKE LANES (TYP)

INSTALL HAWK FOR PEDESTRIAN AND BICYCLE CROSSING ON-RAMP (COORDINATED WITH REDWOOD HIGHWAY FRONTAGE ROAD INTERSECTION TIMING)

ADD THIRD EASTBOUND TRAVEL ALNE

ADD 12' PATHWAY

CONSIDER PROTECTED INTERSECTION

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

ADD SIDEWALK

KNOLL DR

REALIGN SOUTHBOUND DIAGONAL ON RAMP*

SB ON-RAMP

REALIGN SOUTHBOUND LOOP ON RAMP*

TIGHTEN NORTHBOUND LOOP ON RAMP

REDWOOD HIGHWAY FRONTAGE RD

TIBURON BLVD

MAINTENANCE VEHICLE PULLOUT (MVP) *

NB ON-RAMP

ADD BIKE LANES (TYP)

RAMP METER*

IMPROVE WALKWAY TO BE ADA-COMPLIANT

CHP

NB OFF-RAMP

CONFORM STRIPING TO EXISTING CONDITIONS

INSTALL PEDESTRIAN UNDER-CROSSING UNDER NORTHBOUND OFF-RAMP

MARIN MUNI WATER DISTRICT EASEMENT

CITY OF MILL VALLEY

MARIN MUNI WATER DISTRICT EASEMENT

REED BLVD

MARIN MUNI WATER DISTRICT EASEMENT

0 100' 200'

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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(415) 649-6000

TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.2

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
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- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

MERGE NB DIAGONAL ON-RAMP WITH AUXILIARY LANE

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

MATCHLINE A SEE SHEET 3.2

RELOCATE BUS STOP TO NEW SOUTHBOUND ON RAMP

RESTRIPE MAINLINE AND WIDEN TO PROVIDE AUXILIARY LANE

TOWER DR

MAINTENANCE VEHICLE PULLOUT (MVP) *

US-101

MARIN COUNTY

SB OFF-RAMP

ADD BIKE LANES (TYP)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

RAMP METER*

NB ON-RAMP

ADD BIKE LANES (TYP)

MARIN MUNI WATER DISTRICT EASEMENT

RELOCATE NORTHBOUND BUS STOP FROM SOUTH OF THE OVERCROSSING TO THE NEW NORTHBOUND ON-RAMP

KIPLING DR

E BLITHEDALE AVE

ADD THIRD EASTBOUND TRAVEL ALNE

INSTALL HAWK FOR PEDESTRIAN AND BICYCLE CROSSING ON-RAMP (COORDINATED WITH REDWOOD HIGHWAY FRONTAGE ROAD INTERSECTION TIMING)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

0 100' 200'

KNOLL DR

RELOCATE SOUTHBOUND BUS STOP FROM NORTH OF THE OVERCROSSING TO THE NEW SOUTHBOUND ON-RAMP

SB ON-RAMP

REALIGN SOUTHBOUND LOOP ON RAMP*

TIGHTEN NORTHBOUND LOOP ON RAMP

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

CITY OF MILL VALLEY

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
LONG-TERM IMPROVEMENTS (ALTERNATE)

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.1

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

MATCHLINE A
SEE SHEET 3.1

RELOCATE BUS STOP TO NEW SOUTHBOUND ON RAMP

RESTRIPE MAINLINE AND WIDEN TO PROVIDE AUXILIARY LANE

TOWER DR

MAINTENANCE VEHICLE PULLOUT (MVP) *

US-101

SB OFF-RAMP

ADD BIKE LANES (TYP)

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

RAMP METER*

ADD BIKE LANES (TYP)

NB ON-RAMP

MARIN MUNI WATER DISTRICT EASEMENT

RELOCATE NORTHBOUND BUS STOP FROM SOUTH OF THE OVERCROSSING TO THE NEW NORTHBOUND ON-RAMP

INSTALL HAWK FOR PEDESTRIAN AND BICYCLE CROSSING ON-RAMP (COORDINATED WITH REDWOOD HIGHWAY FRONTAGE ROAD INTERSECTION TIMING)

KIPLING DR

E BLITHEDALE AVE

ADD THIRD EASTBOUND TRAVEL ALNE

ADD 12' PATHWAY

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

KNOLL DR

RELOCATE SOUTHBOUND BUS STOP FROM NORTH OF THE OVERCROSSING TO THE NEW SOUTHBOUND ON-RAMP

SB ON-RAMP

REALIGN SOUTHBOUND LOOP ON RAMP*

TIGHTEN NORTHBOUND LOOP ON RAMP

WIDEN BRIDGE TO THE SOUTH TO ALLOW FOR THREE EASTBOUND TRAVEL LANES

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

REDWOOD HIGHWAY FRONTAGE RD

TIBURON BLVD

ADD SIDEWALK

MAINTENANCE VEHICLE PULLOUT (MVP) *

RAMP METER*

NB ON-RAMP

NB OFF-RAMP

CHP

RELOCATE BUS STOP TO NEW NORTHBOUND ON RAMP

MARIN COUNTY

MARIN MUNI WATER DISTRICT EASEMENT

MARIN MUNI WATER DISTRICT EASEMENT

REED BLVD

MARIN MUNI WATER DISTRICT EASEMENT

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
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- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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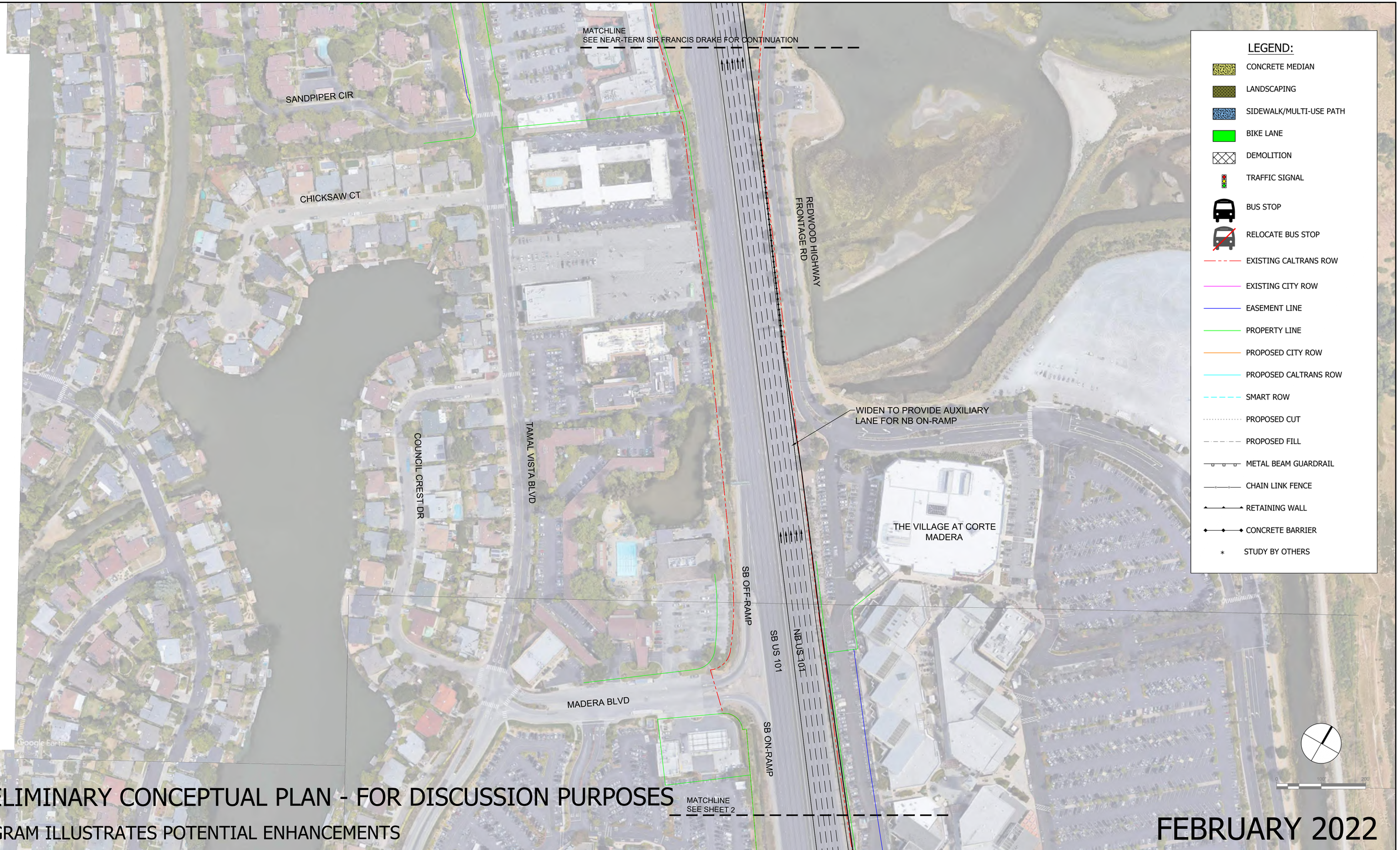
TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
EAST BLITHEDALE AVENUE / TIBURON BOULEVARD (SR131)
LONG-TERM IMPROVEMENTS (ALTERNATE)

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	3.2



PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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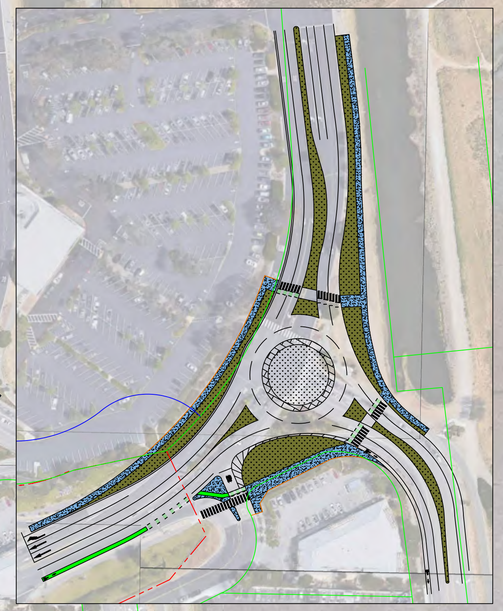
HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
TAMALPAIS DRIVE / PARADISE DRIVE
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

ALTERNATE IMPROVEMENT
TAMALPAIS DR / SAN CLEMENTE DR INTERSECTION



MATCHLINE
SEE SHEET 1

MONONA DR

MADERA BLVD

CORTE MADERA
TOWN CENTER

THE VILLAGE AT
CORTE MADERA

MERGE IN NB DIAGONAL ON-RAMP

MARIN MUNI WATER DISTRICT
EASEMENT

WIDEN AND RESTRIPE MAINLINE
TO PROVIDE AUXILIARY LANE

UPGRADE TRAFFIC
SIGNAL SYSTEM AND
INTERCONNECT
SIGNALS

PROVIDE 10' MULTI-USE
PATH

RAMP METERING
SYSTEM INSTALLATION PROJECT*

UPGRADE TRAFFIC
SIGNAL SYSTEM AND
INTERCONNECT
SIGNALS

NB ON-RAMP

MAINTAIN
EXISTING
SIDEWALK TO
BUS STOP

SB OFF-RAMP

PARADISE DR

SIDEWALK
UNDERNEATH
STRUCTURE

RESTRIPE NB
OFF-RAMP TO PROVIDE
BUS THRU ONLY LANE

RELOCATE BUS
STOP

MARIN MUNI WATER
DISTRICT EASEMENT

SB ON-RAMP

SIDEWALK
UNDERNEATH
STRUCTURE

TAMALPAIS DR

PROVIDE 14' MULTI-USE
PATH

PROVIDE 5' BIKE
LANES

NB ON-RAMP

PROVIDE
STAIRS

NB OFF-RAMP

SAN CLEMENTE DR

UPGRADE TRAFFIC SIGNAL SYSTEM
AND INTERCONNECT SIGNALS

SB ON-RAMP

NB US 101

SB US 101

REALIGN CASA BUENA DR

PROVIDE
CONCRETE
BARRIER

RAMP METERING SYSTEM
INSTALLATION PROJECT*

MARIN MUNI WATER DISTRICT
EASEMENT

REMOVE EXISTING
STREET PARKING

0 100' 200'

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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(415) 649-6000

HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
TAMALPAIS DRIVE / PARADISE DRIVE
NEAR-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

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TRANSPORTATION AUTHORITY OF MARIN
HIGHWAY 101 INTERCHANGE IMPLEMENTATION STUDY
TAMALPAIS DRIVE / PARADISE DRIVE LONG-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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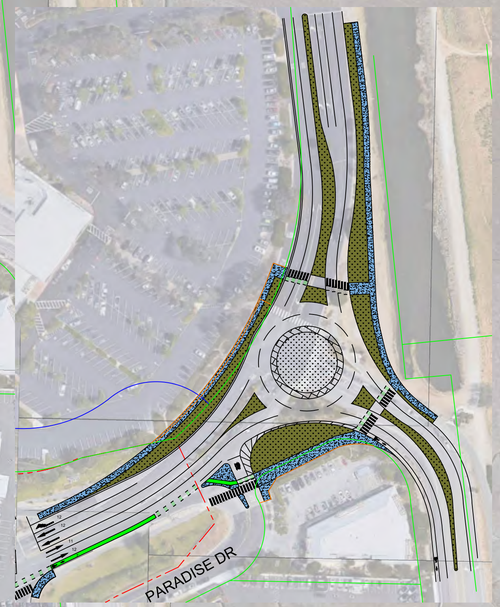
SHEET NO.	

ALTERNATE IMPROVEMENT
TAMALPAIS DR / SAN CLEMENTE DR INTERSECTION



LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
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- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- STUDY BY OTHERS

MATCHLINE SEE SHEET 1

MARIN MUNI WATER DISTRICT EASEMENT

MADERA BLVD

CORTE MADERA TOWN CENTER

THE VILLAGE AT CORTE MADERA

WIDEN TO PROVIDE AUXILIARY LANE FOR NB LOOP ON-RAMP FROM TAMALPAIS

RAMP METER SYSTEM INSTALLATION PROJECT*

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

PROVIDE 10' MULTI-USE PATH

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

NB ON-RAMP

SB OFF-RAMP

SB US 101

NB US 101

MAINTAIN EXISTING SIDEWALK TO BUS STOP

REALIGN SB ON-RAMP

REALIGN SB OFF-RAMP TO TAMALPAIS DR

MARIN MUNI WATER DISTRICT EASEMENT

SIDEWALK UNDERNEATH STRUCTURE

PARADISE DR

RESTRIPE NB OFF-RAMP TO PROVIDE BUS THRU ONLY LANE

RELOCATE BUS STOP

SB ON-RAMP

MAINTAIN EXISTING SIDEWALK ON BRIDGE

PROVIDE 14' MULTI-USE PATH

PROVIDE STAIRS

REALIGN NB ON-RAMP

SIDEWALK UNDERNEATH STRUCTURE

NB ON-RAMP

RELOCATE BUS STOP

PROVIDE 14' MULTI-USE PATH

TAMALPAIS DR

UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS

NB OFF-RAMP

SAN CLEMENTE DR

REALIGN CASA BUENA DR

PROVIDE CONCRETE BARRIER

REMOVE EXISTING STREET PARKING

RAMP METERING SYSTEM INSTALLATION PROJECT*

MARIN MUNI WATER DISTRICT EASEMENT

0 100' 200

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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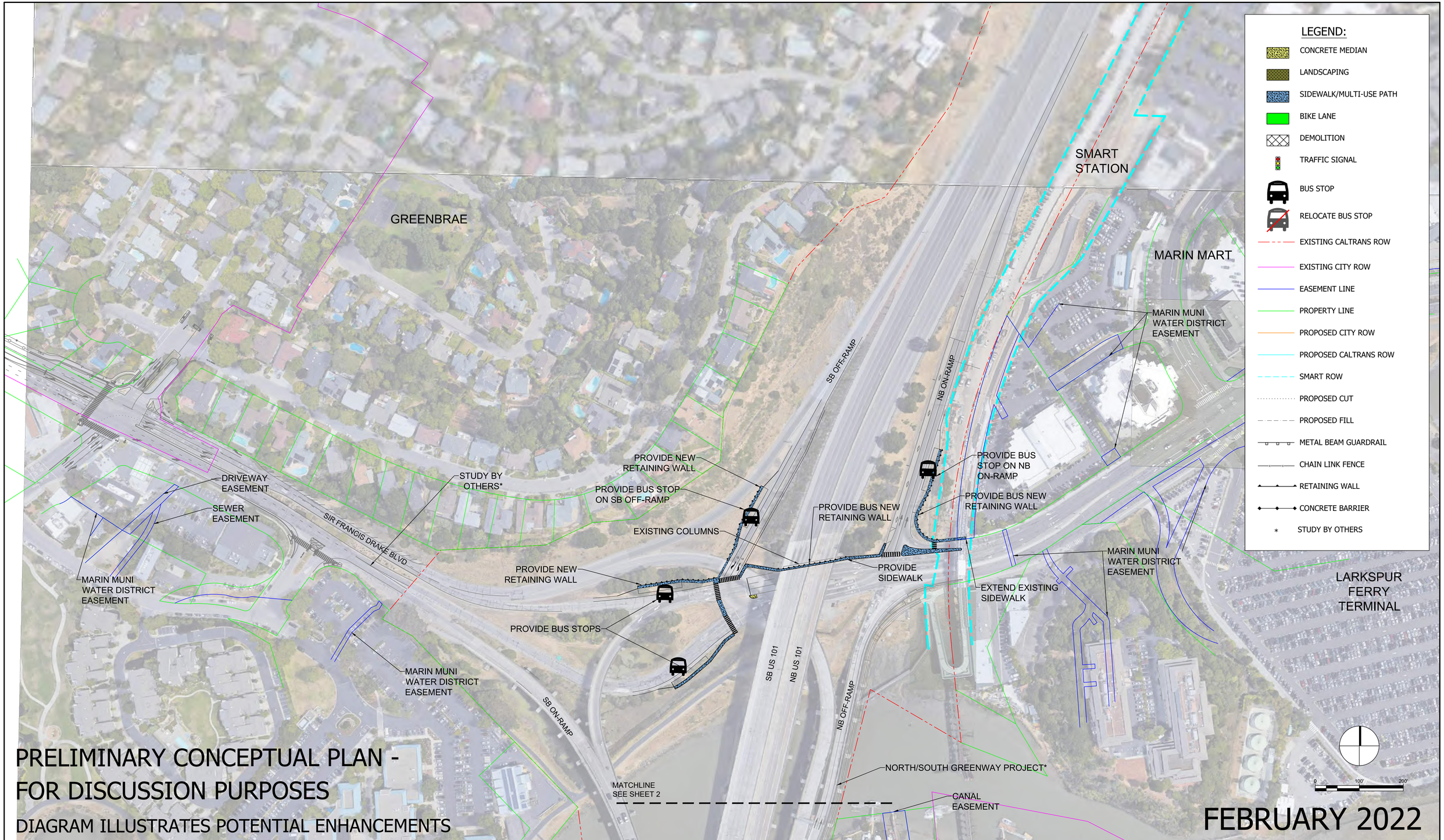
HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
TAMALPAIS DRIVE / PARADISE DRIVE
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

CENTRAL



LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
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- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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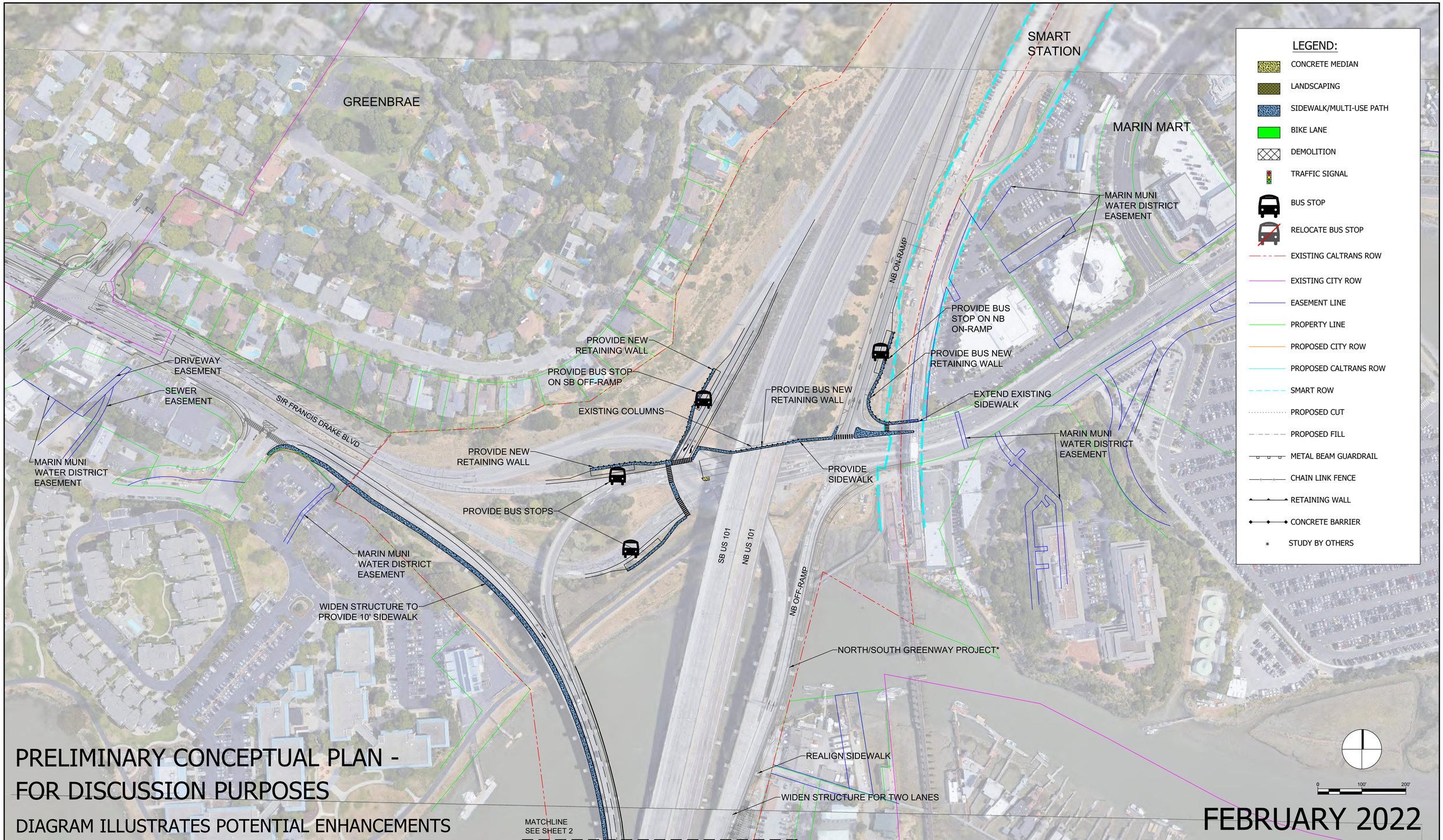

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SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
LONG-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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MATCHLINE
SEE SHEET 1

WIDEN STRUCTURE FOR TWO LANES
OF TRAVEL AND WIDEN SIDEWALK

CONCRETE BARRIER

NORTH/SOUTH GREENWAY PROJECT*

PROVIDE CONCRETE BARRIER

REDWOOD HIGHWAY PATHWAY PROJECT*

PROVIDE
SIDEWALK

REALIGN REDWOOD HIGHWAY
FRONTAGE ROAD

PROVIDE SB OFF-RAMP TO
NELLEN AVE

PROVIDE NB OFF-RAMP TO
SIR FRANCIS DRAKE BLVD
FROM WORNUM

LUCKY DR

PROVIDE RAMP METER

STORM-DRAIN
PIPELINE EASEMENT

CONVERT NELLAN AVE
TO A ONE WAY STREET

NELLEN AVE

REMOVE EXISTING
STREET PARKING

PROVIDE SB ON-RAMP FROM
SIR FRANCIS DRAKE BLVD

PROVIDE 10'
SIDEWALK

SB US-101

NB US-101

REALIGN NB
ON-RAMP FROM
INDUSTRIAL WAY
TO SIR FRANCIS
DRAKE BLVD

RICH ST

PROVIDE NB
ON-RAMP FROM
WORNUM

PROVIDE NEW
PEDESTRIAN
OVERCROSSING

UPGRADE
TRAFFIC SIGNAL
SYSTEM AND
INTERCONNECT
SIGNALS

ROADWAY
EASEMENT

INDUSTRIAL WAY

SEWER
EASEMENT

RELOCATE BUS STOP
TO NEW WORNUM NB
OFF-RAMP

FIFER AVE

STUDY BY
OTHERS*

REMOVE FIFER
SB OFF-RAMP

TO

RELOCATE BUS STOP

FROM

REMOVE NB
OFF-RAMP TO
INDUSTRIAL

REALIGN FIFER
SB ON-RAMP

PROVIDE RAMP METER

MARIN MUNI
WATER DISTRICT
EASEMENT

PG&E EASEMENT

MATCHLINE
SEE SHEET 3

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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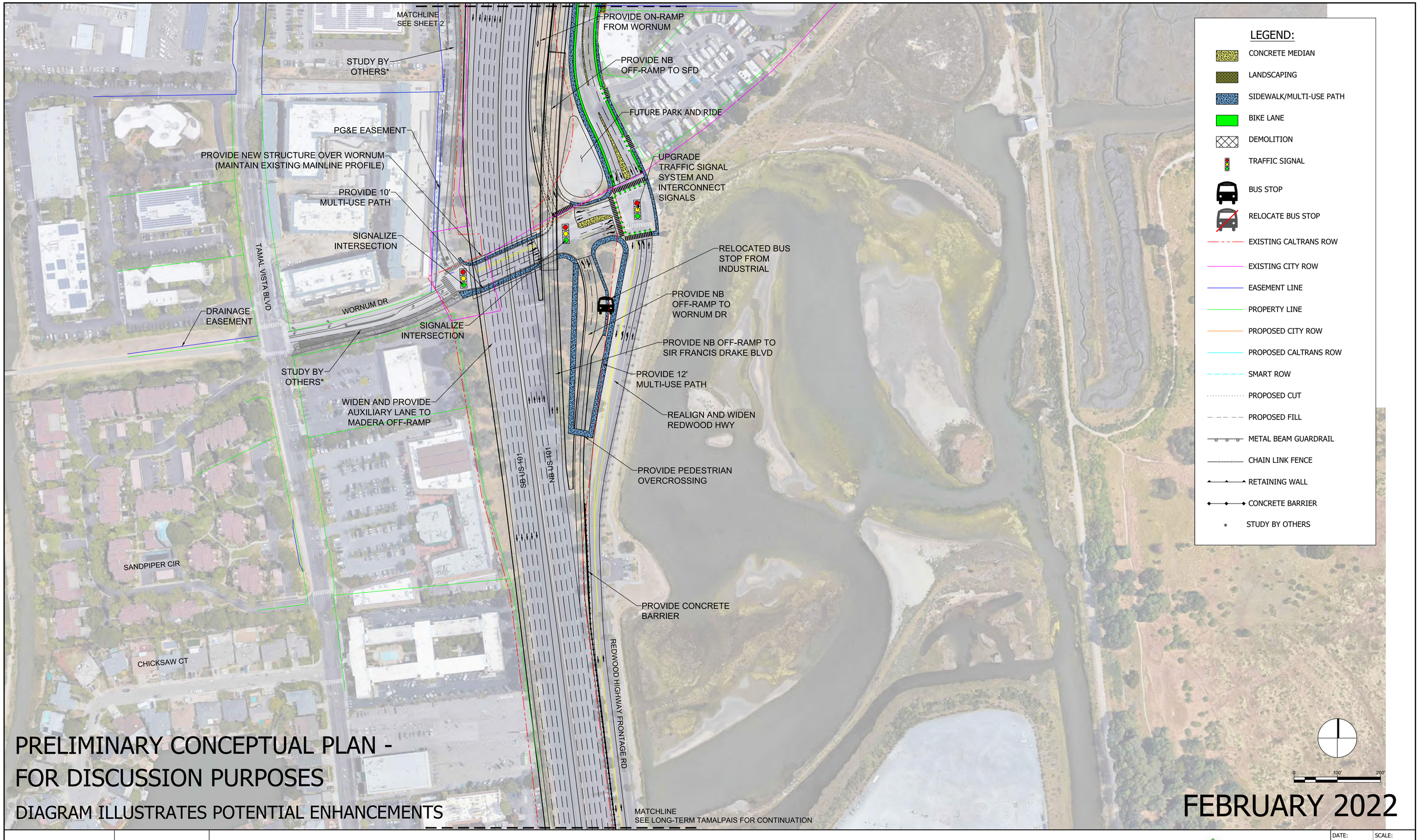

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

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SIR FRANCIS DRAKE BOULEVARD / FIFER AVENUE / INDUSTRIAL WAY
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SECOND STREET / HETHERTON STREET
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SECOND STREET / HETHERTON STREET
NEAR-TERM IMPROVEMENTS (TWO-LANE OPTION)

TAM Transportation Authority of Marin

DATE:	SCALE: NTS
FILENAME:	
PROJECT:	
SHEET NO.	

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SECOND STREET / HETHERTON STREET
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: NTS
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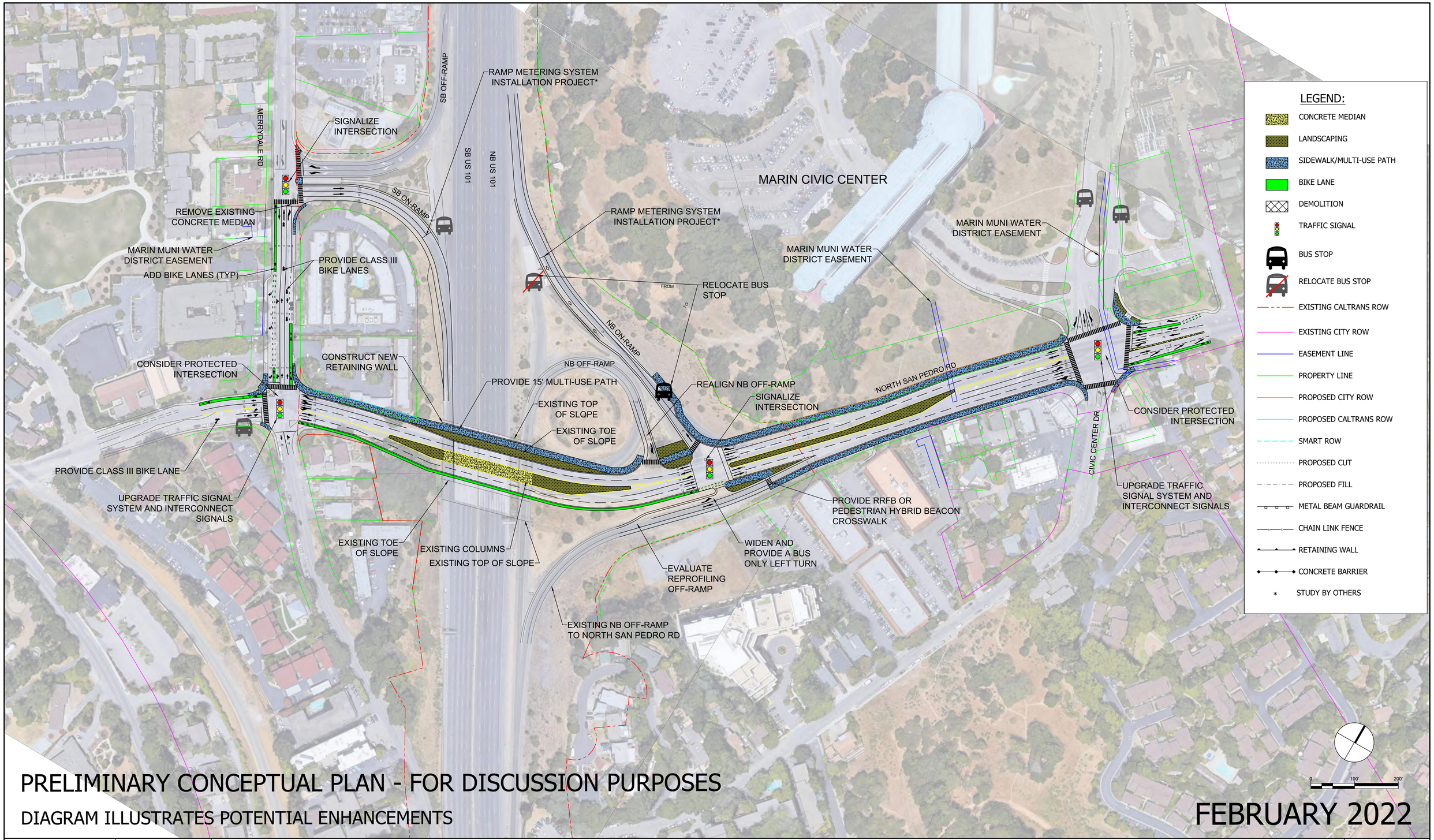

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
NORTH SAN PEDRO ROAD / MERRYDALE ROAD
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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SHEET NO.	

MERRYDALE RD

SIGNALIZE INTERSECTION

SB OFF-RAMP

SB US 101

NB US 101

SB ON-RAMP

REMOVE EXISTING CONCRETE MEDIAN

RESTRIPE SB OFF-RAMP

MARIN CIVIC CENTER

RAMP METERING SYSTEM INSTALLATION PROJECT*

MARIN MUNI WATER DISTRICT EASEMENT

MARIN MUNI WATER DISTRICT EASEMENT

RELOCATE BUS STOP

PROVIDE CLASS III BIKE LANES

MAINTAIN EXISTING BUS STOP

RAMP METERING SYSTEM INSTALLATION PROJECT*

NB ON-RAMP

CONSTRUCT NEW RETAINING WALL

PROVIDE 15' MULTI-USE PATH

NB OFF-RAMP

REALIGN NB LOOP OFF-RAMP EXIT

PROVIDE 15' MULTI-USE PATH

NORTH SAN PEDRO RD

SIGNALIZE INTERSECTION

EXISTING TOP OF SLOPE

EXISTING TOE OF SLOPE

CIVIC CENTER DR

RELOCATE BUS STOP

REMOVE EXISTING STREET PARKING

EXISTING TOE OF SLOPE

EXISTING COLUMNS

EXISTING TOP OF SLOPE

REGRADE AREA BETWEEN NB OFF-RAMP AND NORTH SAN PEDRO RD

NB OFF-RAMP

PROPOSED RETAINING WALLS

REALIGN NB OFF-RAMP

LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
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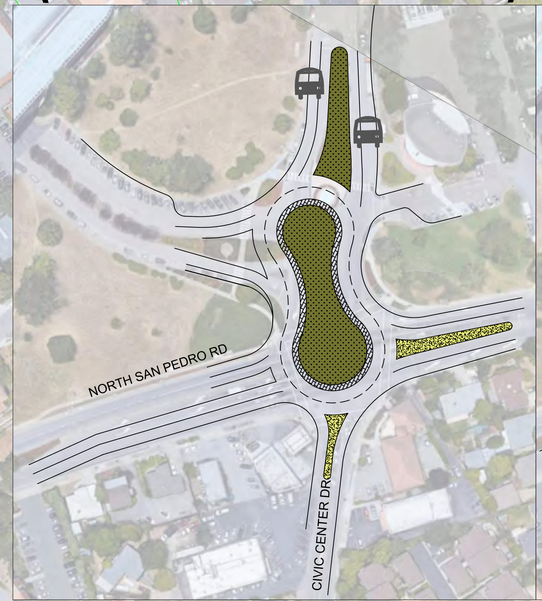
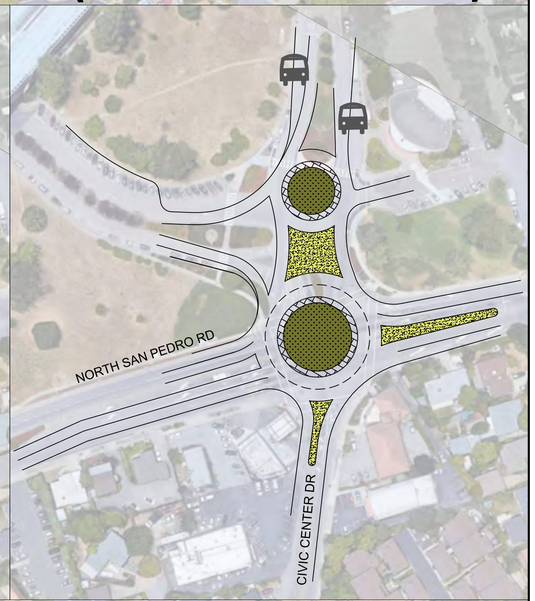
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

0 100' 200'

ALTERNATIVE IMPROVEMENT AT CIVIC CENTER DRIVE (HOURGLASS ROUNDABOUT)



ALTERNATIVE IMPROVEMENT AT CIVIC CENTER DRIVE (DOUBLE ROUNDABOUT)



PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
NORTH SAN PEDRO ROAD / MERRYDALE ROAD
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
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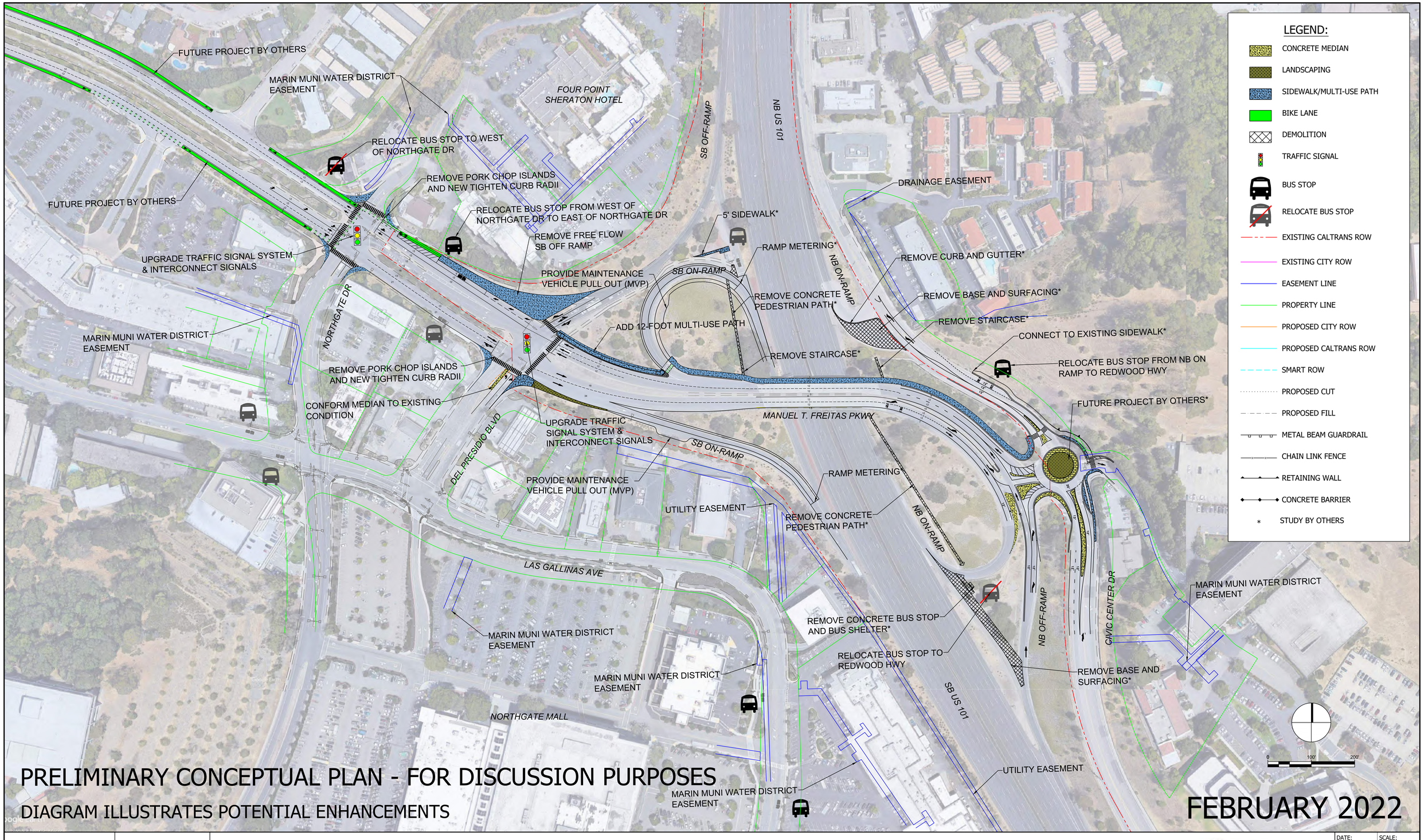

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
MANUEL T. FREITAS PARKWAY / CIVIC CENTER DRIVE
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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PROJECT:	
SHEET NO.	

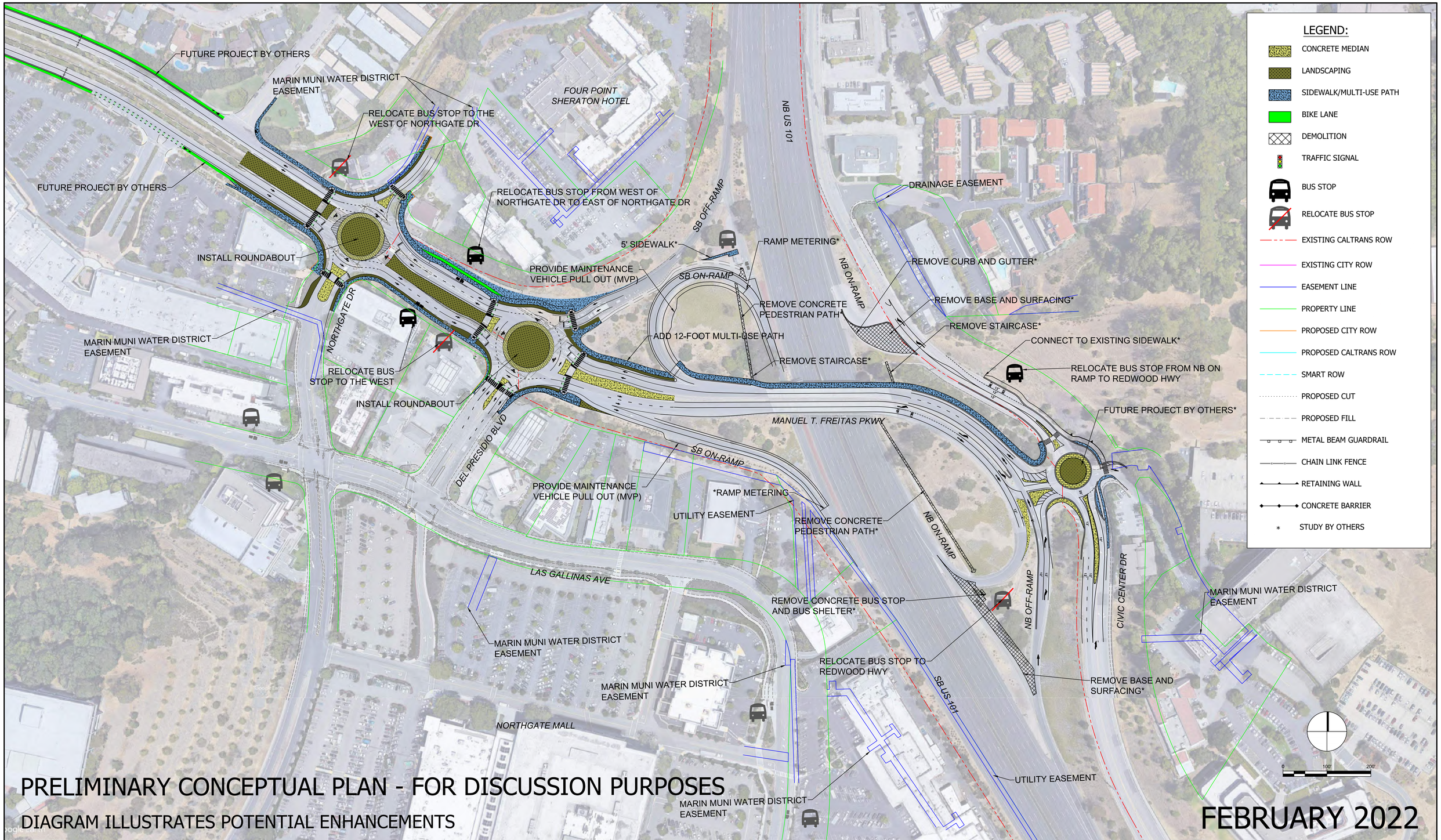

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DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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MANUEL T. FREITAS PARKWAY / CIVIC CENTER DRIVE
LONG-TERM IMPROVEMENTS

Transportation Authority of Marin

DATE:	SCALE: 1"=100'
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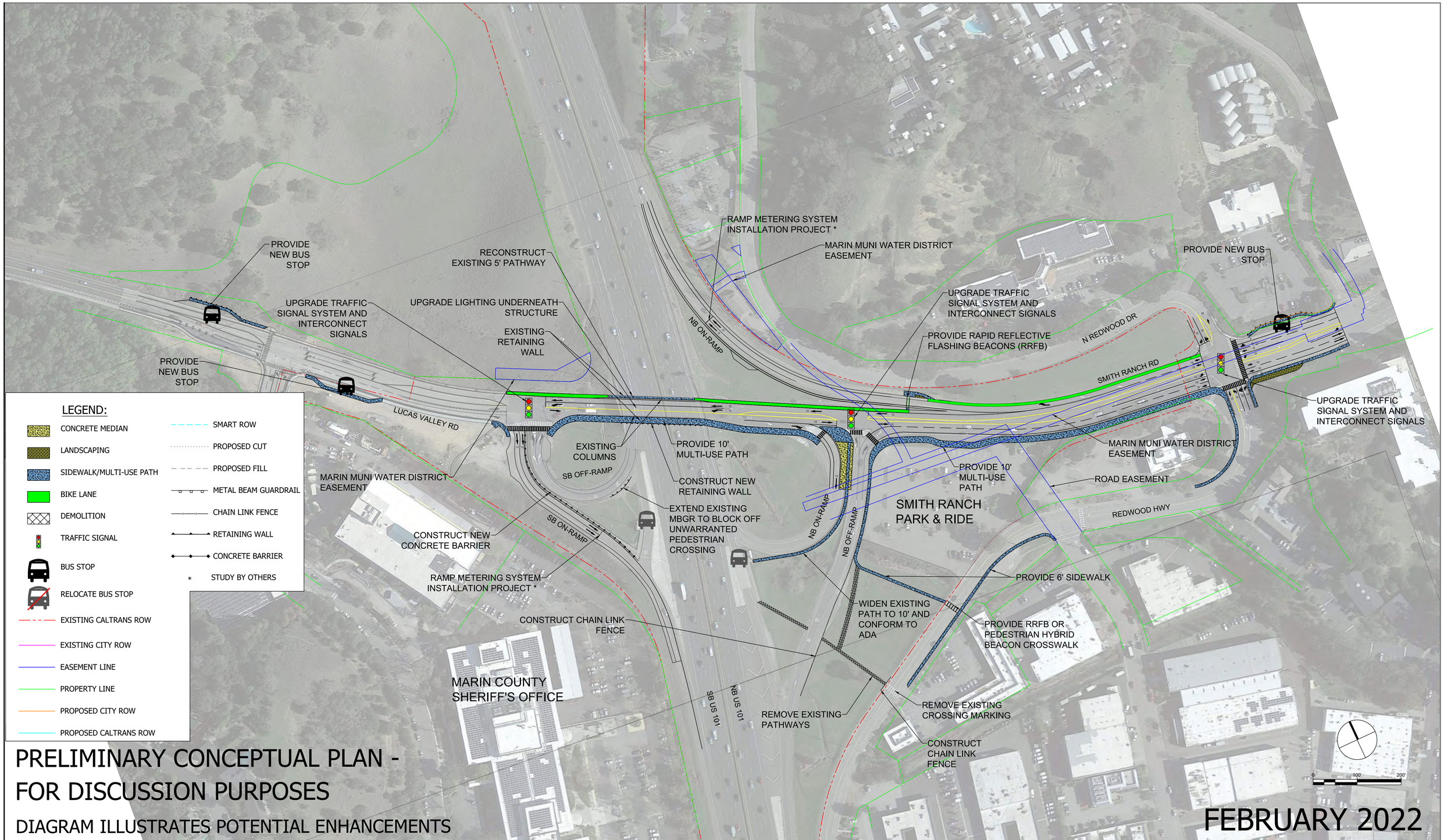
PROJECT:	
SHEET NO.	

NORTH



LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
LUCAS VALLEY ROAD / SMITH RANCH ROAD
NEAR-TERM IMPROVEMENTS

Transportation Authority of Marin

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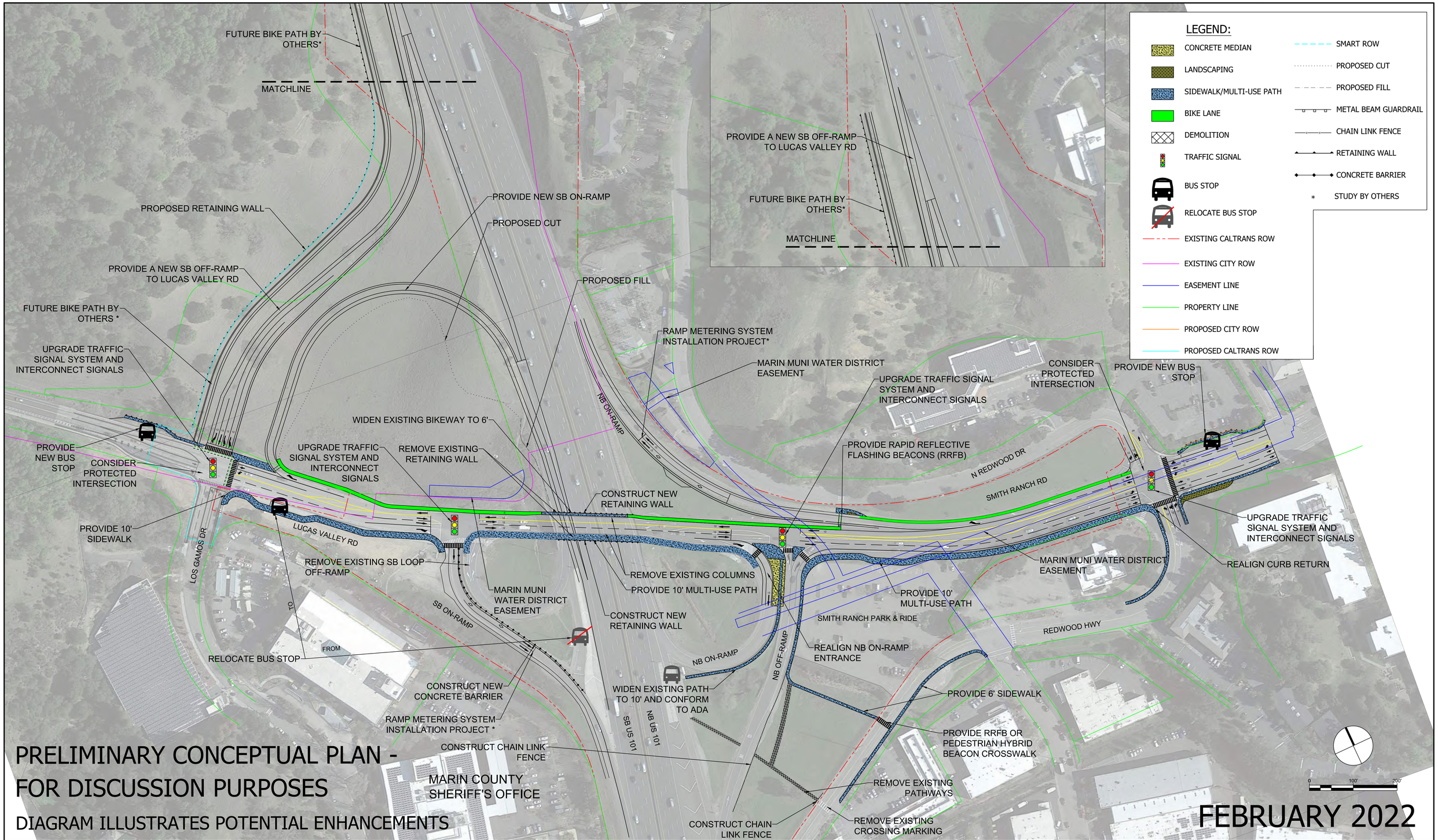
FILENAME:	
PROJECT:	
SHEET NO.	



PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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OAKLAND, CA 94607
(510) 208-4599

Parisi TRANSPORTATION CONSULTING
1750 BRIDGEWAY, SUITE B208
SAUSILITO, CA 94965
(415) 649-6000

HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
LUCAS VALLEY ROAD / SMITH RANCH ROAD
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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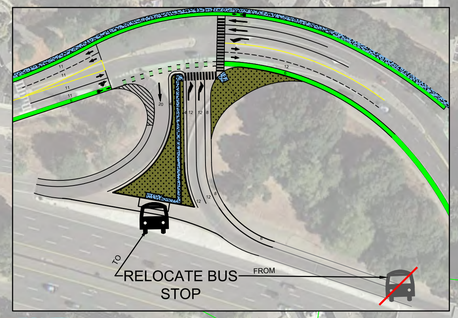
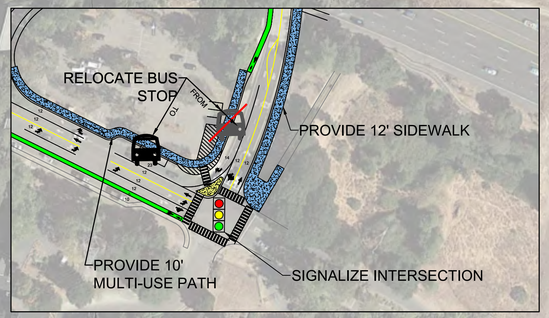
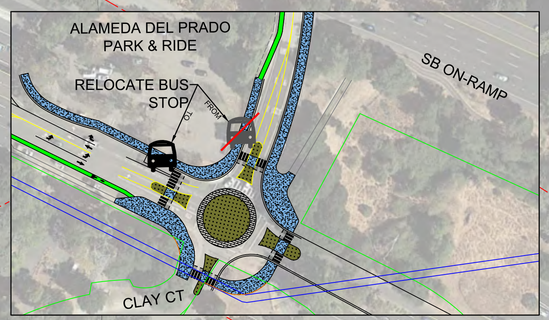
ALTERNATIVE IMPROVEMENT
NB OFF-RAMP BUS STOP



ALTERNATIVE IMPROVEMENT
ALAMEDA DEL PRADO/NAVE DR INTERSECTION



ALTERNATIVE IMPROVEMENT
ALAMEDA DEL PRADO/NAVE DR INTERSECTION



LEGEND:

- CONCRETE MEDIAN
- LANDSCAPING
- SIDEWALK/MULTI-USE PATH
- BIKE LANE
- DEMOLITION
- TRAFFIC SIGNAL
- BUS STOP
- RELOCATE BUS STOP
- EXISTING CALTRANS ROW
- EXISTING CITY ROW
- EASEMENT LINE
- PROPERTY LINE
- PROPOSED CITY ROW
- PROPOSED CALTRANS ROW
- SMART ROW
- PROPOSED CUT
- PROPOSED FILL
- METAL BEAM GUARDRAIL
- CHAIN LINK FENCE
- RETAINING WALL
- CONCRETE BARRIER
- * STUDY BY OTHERS

ROAD AND UTILITY DISTRICT EASEMENT
SEWER EASEMENT
BOLLING DR
MARIN VALLEY DR
FLOOD CONTROL EASEMENT
SIGNALIZE INTERSECTION
RESTRIPE BOLLING DR
NAVE DR
MARIN MUNI WATER DISTRICT EASEMENT
EXTEND EXISTING SIDEWALK
UPGRADE TRAFFIC SIGNAL SYSTEM AND INTERCONNECT SIGNALS
RECONFIGURE LANES
NB ON-RAMP
RAMP METERING SYSTEM INSTALLATION PROJECT*
WIDEN NB OFF-RAMP
NB US 101
NB OFF-RAMP
SB OFF-RAMP
RECONFIGURE SB OFF-RAMP
SB US 101
MAINTAIN EXISTING SIDEWALK
RAMP METERING SYSTEM INSTALLATION PROJECT*
ALAMEDA DEL PRADO PARK & RIDE
TRANSITION 10' SIDEWALK TO MATCH EXISTING SIDEWALK
ALAMEDA DEL PRADO
RELOCATE BUS STOP
BEST WESTERN NOVATO OAKS INN
PROVIDE DRIVEWAY
PROVIDE 10' MULTI-USE PATH
CLAY CT
SIGNALIZE INTERSECTION
MARIN MUNI WATER DISTRICT EASEMENT
PROVIDE RRFB OR PEDESTRIAN HYBRID BEACON CROSSWALK
CONSTRUCT NEW RETAINING WALL
REGRADE AREA
PROVIDE 10' MULTI-USE PATH
PROVIDE CONCRETE BARRIER
MAINTAIN EXISTING BRIDGE WIDTH AND REASSIGN LANES
NB OFF-RAMP
SB ON-RAMP
PROVIDE 12' MULTI-USE PATH
MARIN MUNI WATER DISTRICT EASEMENT

0 100' 200'

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

FEBRUARY 2022

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
ALAMEDA DEL PRADO / NAVE DRIVE
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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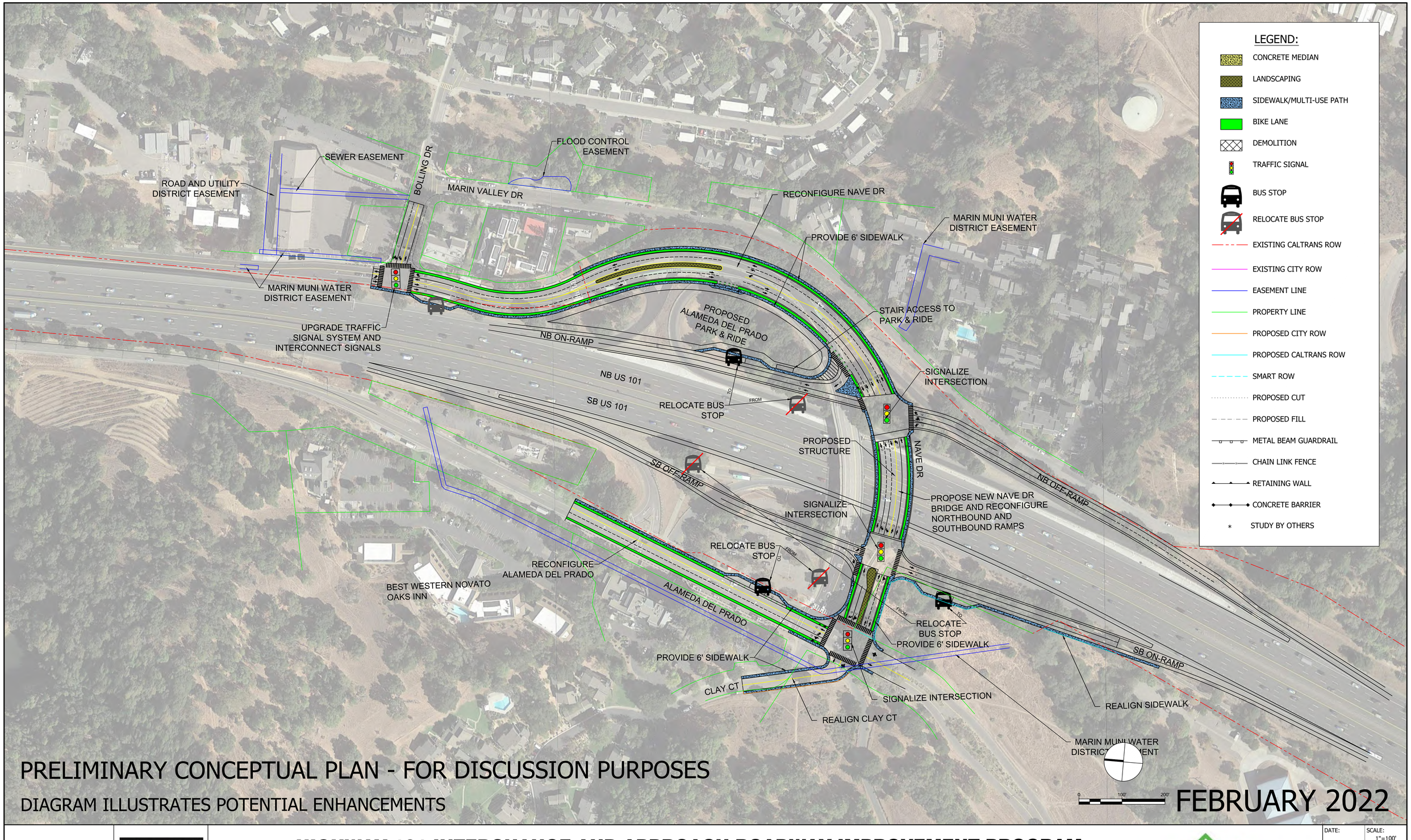

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
ALAMEDA DEL PRADO / NAVE DRIVE
LONG-TERM IMPROVEMENTS

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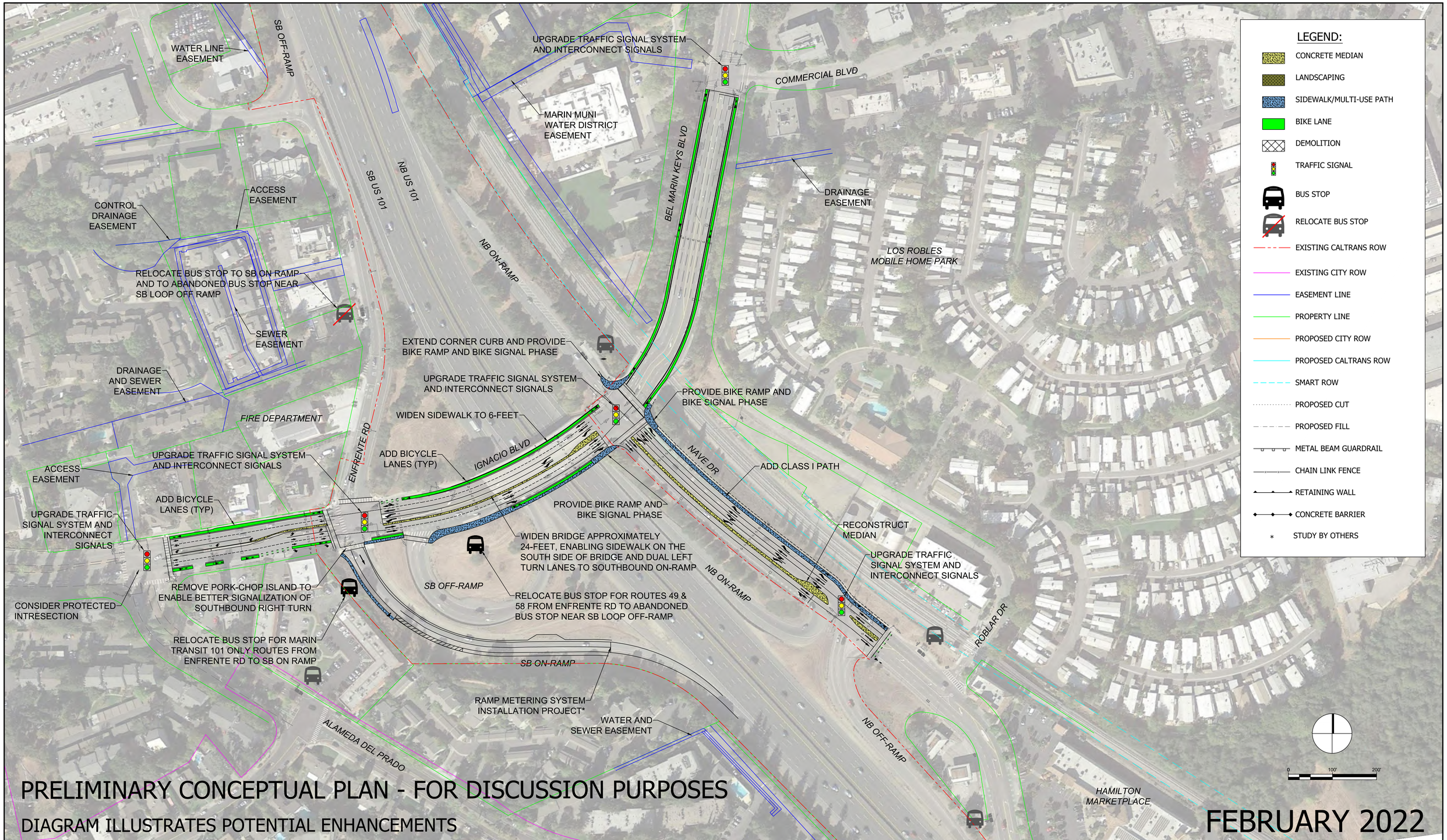
HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
IGNACIO BOULEVARD / BEL MARIN KEYS / NAVE DRIVE
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

DATE:	SCALE: 1"=100'
FILENAME:	
PROJECT:	
SHEET NO.	



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LONG-TERM IMPROVEMENTS

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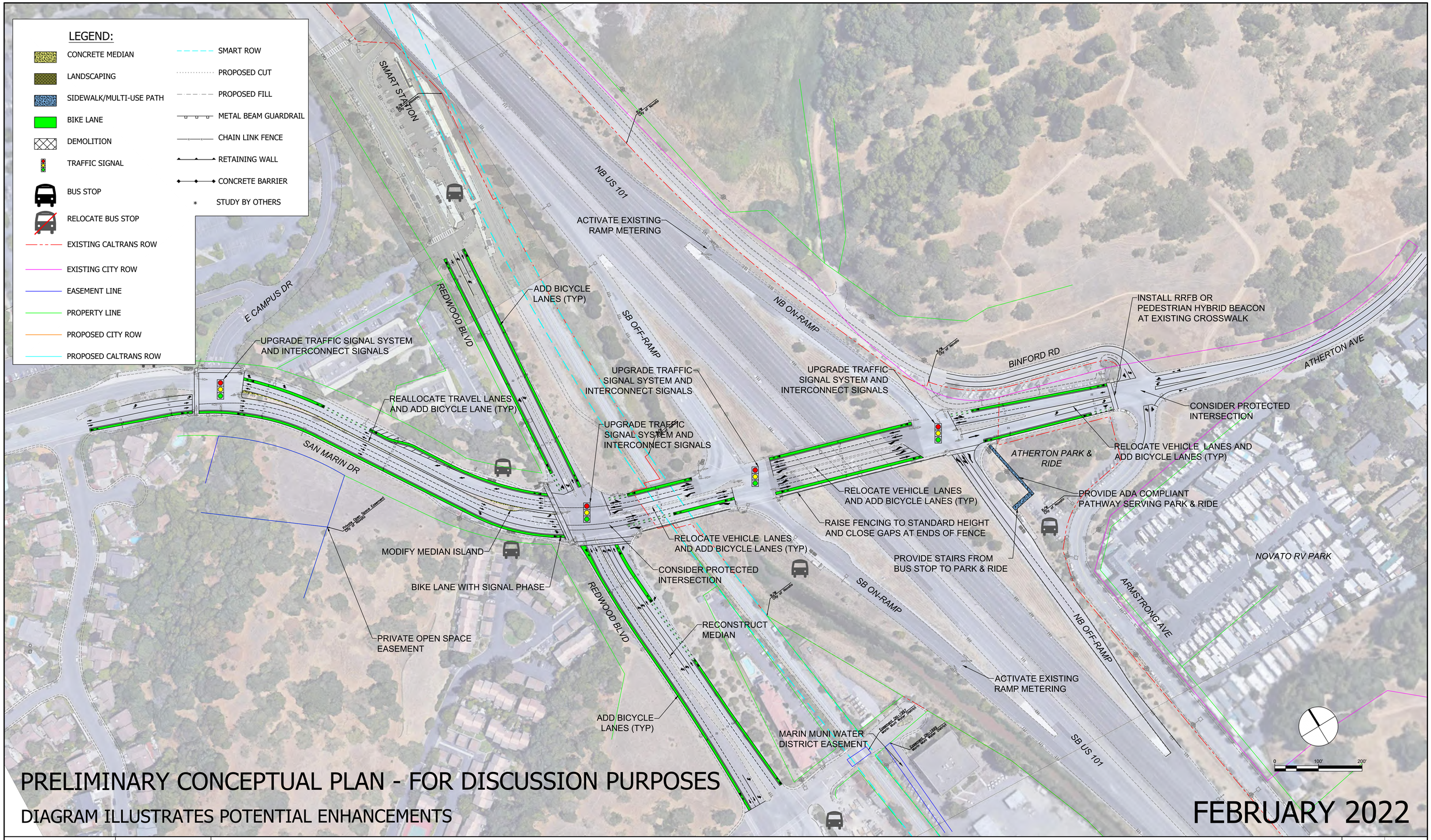

PRELIMINARY CONCEPTUAL PLAN - FOR DISCUSSION PURPOSES

DIAGRAM ILLUSTRATES POTENTIAL ENHANCEMENTS

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HIGHWAY 101 INTERCHANGE AND APPROACH ROADWAY IMPROVEMENT PROGRAM
SAN MARIN DRIVE / ATHERTON AVENUE INTERCHANGE
NEAR-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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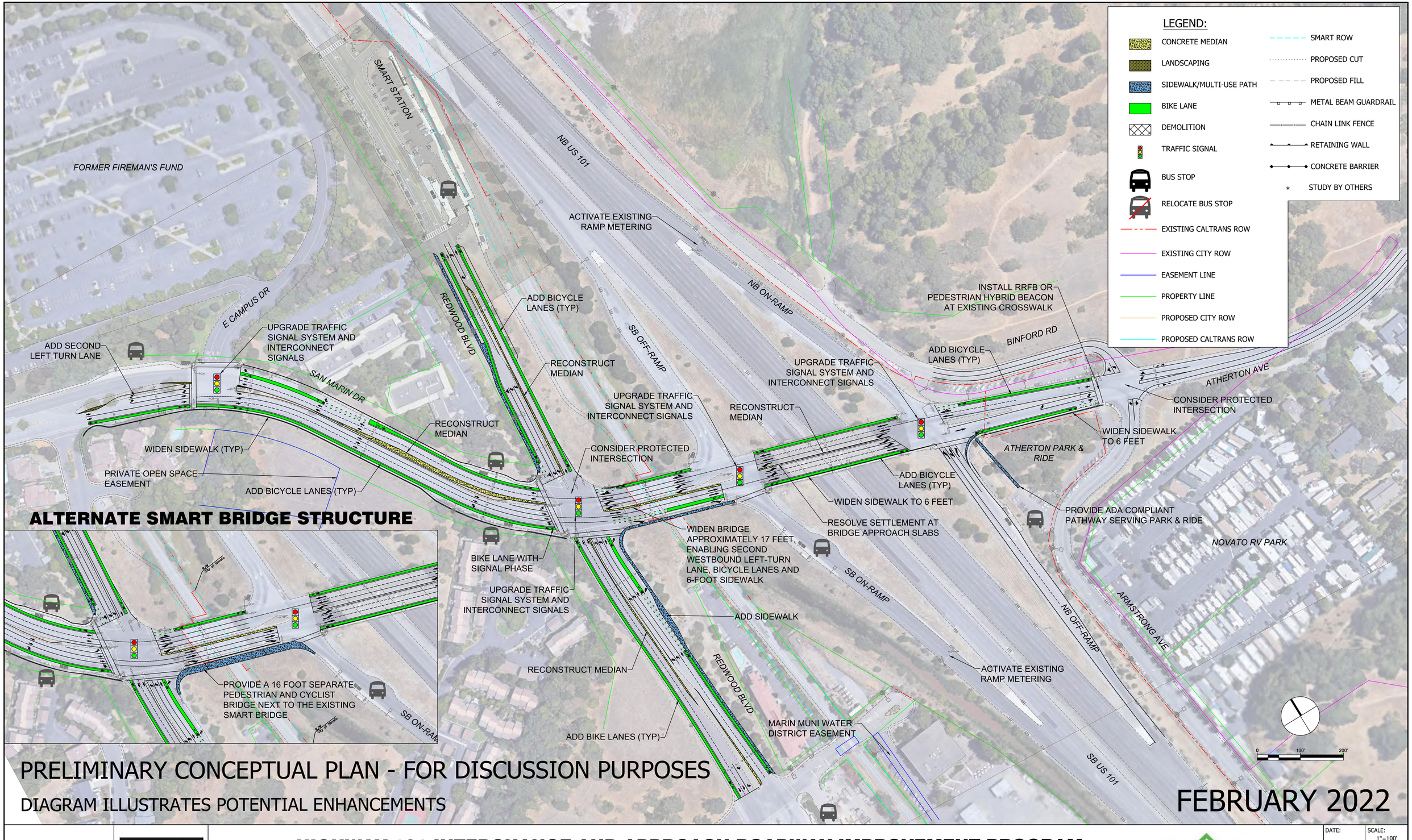

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SAN MARIN DRIVE / ATHERTON AVENUE INTERCHANGE
LONG-TERM IMPROVEMENTS

TAM Transportation Authority of Marin

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Appendix C

Evaluation Methodology Memo: Administration, Projects & Planning Executive Committee Discussion July 2021

DATE: July 12, 2021

TO: Transportation Authority of Marin Administration, Projects & Planning Executive Committee

FROM: Anne Richman, Executive Director
Bill Whitney, Principal Project Delivery Manager

SUBJECT: Highway 101 Interchange and Approaching Roadway Study – Project Status Update and Discussion of Evaluation Methodology (Discussion), Agenda Item No. 7

RECOMMENDATION

The Administration, Projects and Planning (APP) Executive Committee hears the project status update and provides input on the Evaluation Methodology.

BACKGROUND

The Highway 101 Interchange and Approaching Roadway Study is a project/program that was included in the Measure AA ½-Cent Transportation Sales Tax Expenditure Plan. The Expenditure Plan allocates 3% of the revenue from the sales tax, estimated at $24.8 million over the 30-year period of the Measure.

The Expenditure Plan states the following:

> "Accessing Highway 101 in Marin is a major source of congestion on local roads, which reduces the connectivity of communities across Marin. These funds would be used to attract regional, state, and federal funds for a program of improvements to interchanges and local roads. These improvements would improve the operation and safety of these interchanges for all users, allowing smoother travel to and from Highway 101. These funds provide seed money to perform the planning, the public outreach, and to develop the scope of improvements needed at these interchanges."

The funds would address Highway 101 interchanges at the locations as listed below:

- Alexander Avenue
- Sausalito / Marin City
- Tiburon Blvd / East Blithedale
- Paradise Drive/Tamalpais Drive
- Sir Francis Drake Blvd
- San Rafael Onramp at 2nd Street and Hetherton Avenue
- Merrydale Road/North San Pedro Road
- Manuel T. Freitas Parkway
- Lucas Valley/Smith Ranch Road
- Alameda Del Prado
- Ignacio Blvd
- San Marin Drive/Atherton Avenue

DISCUSSION

The overall approach of the study is to identify operational and safety improvements for all users of an interchange and approaching roadways including adjacent intersections. Many of the Highway 101 interchanges were built years ago when Marin's traffic was much different than today and are considered to have numerous operational deficiencies and non-standard features as compared to current design practices. They were also built during an era that was auto centric and did not accommodate or equally consider other users such as pedestrians, cyclists and transit riders.

Staff is implementing a multi-step process to understand and document the existing conditions of the interchanges and approaching roadways and to identify deficiencies that contribute to congestion and impact mobility and safety. We have initiated an in-depth study of each designated interchange location and will prepare an independent report that will recommend a series of actions to address the identified needs.

The following steps have been, and will be taken as part of the effort:

- Identify and Establish Program Goals and Objectives
- Conduct Focused Stakeholder Engagement
- Perform Data Collection & Review of Existing Reports and Studies
- Perform Traffic Assessment & Forecasts
- Determine Sea Level Rise Susceptibility and Adaptive Capacity
- Identify Deficiencies, Constraints and Opportunities <<< **CURRENT STAGE OF STUDIES**
- Develop Evaluation Criteria & Performance Metrics
- Prepare Planning Level Cost Estimates and Cost-Benefit Analysis
- Prepare Interchange Study Reports
- Prepare a Prioritization and Implementation Plan
- Identify and Pursue Funding Opportunities

TAM staff and our consultants have hosted meetings with member agency staff, including the Public Works Departments, Community Development Departments as well as Golden Gate Bridge, Highway, and Transportation District (GGBHTD), Marin Transit, and Caltrans. These meetings have helped the team develop a baseline understanding of the geometric and operations of the interchanges. TAM also executed a web-based survey to engage the public and solicit input from the user's point of view. Survey highlights will be reviewed at the meeting.

Goals, Evaluation Criteria, Performance Measures and Prioritization/Weighting

The APP Executive Committee reviewed and approved the goals and objectives at its July 13, 2020 meeting. Over the last year following our interaction with agency staff, we have refined the Evaluation Criteria and Performance Measures. A table outlining the goals and objectives with draft evaluation criteria, performance measures and Prioritization/Weighting is attached to this report (Attachment A). We request feedback from the Committee on the Evaluation Methodology.

Establishing a clear and concise evaluation methodology is a critical step to help guide priorities and benefits of proposed improvements for various elements of an interchange.

FISCAL IMPACTS

None

NEXT STEPS

Staff will incorporate input from the Committee into the evaluation methodology. We will return to the Committee and Board for the approval of the final evaluation methodology to be used moving forward.

The team is currently in the process of developing draft improvement concepts for the interchanges. We are grouping the improvement concepts in a manner that allows us to propose sets of near-term and long-term improvements that can then be assessed using the final evaluation methodology.

ATTACHMENTS

Attachment A: Evaluation Methodology Memo
Attachment B: PowerPoint Presentation

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Memorandum

Date: June 28, 2021
To: Bill Whitney, Transportation Authority of Marin
From: Kim Franchi, HNTB
David Parisi, Parisi Transportation Consulting
Subject: Highway 101 Interchange and Approaching Roadway Study: Evaluation Methodology

INTRODUCTION

In July 2020, the Transportation Authority of Marin (TAM) Board approved the Goals and Objectives for the Highway 101 Interchange and Approaching Roadway Study. Since that time, significant progress has been made on the study of the 12 identified interchange locations on Highway 101. Phase 1: Establish Goals and Collect data has been completed; Phase 2: Identify Deficiencies, Constraints and Opportunities is nearing completion; and the team will be moving into Phase 3: Prioritization and Implementation this fall. To conduct the Phase 3 prioritization exercise, the evaluation methodology needs to be finalized based on input.

This memorandum provides a summary of the proposed evaluation methodology, evaluation criteria, and associated performance measures against which improvement concepts can be evaluated and prioritized. The HNTB/Parisi team requests feedback regarding the proposed methodology and scoring to be used to conduct the prioritization analysis, as well as input on potential weightings to be applied.

GOALS AND OBJECTIVES

To recap information previously presented to the TAM Administration, Projects and Planning Executive Committee, the goals and objectives outlined below were compiled from the 2017 Strategic Vision Plan, 2018 Measure AA Expenditure Plan, recent Highway 101 corridor planning documents, and numerous local, regional, and statewide sources, as referenced herein. They are intended to be aligned with the larger planning context to guide development of the Highway 101 Interchanges program as a whole and of the proposed interchange improvement concepts themselves. They are also intended to be aligned with the guiding principles outlined in the 2021 Transportation Sales Tax Strategic Plan.

The goals and objectives are as follows:

1. Enhance Health and Safety
2. Relieve Local Traffic Congestion
3. Improve Multimodal Access to/ from and across Highway 101
4. Promote Economic Vitality
5. Implementability

EVALUATION METHODOLOGY

For each goal, a series of evaluation criteria is proposed to determine how well a particular interchange improvement concept performs against alternative concepts at that same location, and against the other interchange locations. The comparative performance of near- and long-term concepts will also be evaluated in this manner. The evaluation criteria are supported by various planning level performance

measures that can be used to qualitatively assess proposed improvements against the established goals and objectives. The evaluation criteria and performance measures have been refined over the last year over those previously presented to the Committee.

- **Goal 1: Enhance Health and Safety**[1]
  - Evaluation Criterion 1: Improves safety for all modes
    - *Performance Measure*: Removes and/or improves nonstandard conditions
      Scoring: Higher scoring for concepts that would remedy non-standard design features or other features that contribute to potentially unsafe conditions, based on percentage of mandatory nonstandard conditions removed
    - *Performance Measure*: Provides separation of transportation modes
      Scoring: Higher scoring for improvements that propose separated pedestrian/bicyclist infrastructure that improves access to transit and the surrounding area(qualitative)
  - Evaluation Criterion 2: Enhances emergency response and evacuation
    - *Performance Measure*: Population in the area served by the interchange
      Scoring: Higher scoring for higher ADT on the arterial crossing Highway 101
    - *Performance Measure*: Availability of alternative routes to Highway 101
      Scoring: Higher scoring for interchanges that have few alternative egress routes
  - Evaluation Criterion 3: Promotes active transportation[2]
    - *Performance Measure*: Improved pedestrian connectivity/ADA
      Scoring: Higher scoring for greater improvement to connectivity/removal of barriers to access provided (qualitative)
    - *Performance Measure*: Improved bicycle infrastructure and gap closure, level of comfort
      Scoring: Higher scoring for greater improvement to connectivity/removal of discontinuities/increased separation from traffic (qualitative)
  - Evaluation Criterion 4: Reduces greenhouse gas (GHG) emissions and improves air quality
    - *Performance Measure*: Reduction in delay
      Scoring: Higher scoring for improvements with the highest percentage reduction in GHG emissions (existing PM peak)
- **Goal 2: Relieve Local Traffic Congestion**[3]
  - Evaluation Criterion 1: Alleviates congestion and improves traffic flow for current and future traffic
    - *Performance Measure*: Level of Service (LOS)
      Scoring: Higher scoring for concepts where greatest improvements would occur (PM peak hour)
    - *Performance Measure: Vehicle hours of delay (VHD)*
      Scoring: Higher scoring for concepts with greatest reduction in VHD (weighted average by volume, PM peak)

[1] The "Getting Around Marin" online survey identified safety as a priority after travel time and flexibility (TAM Strategic Vision Plan, Figure 16 page 47). Factors that rated lower than safety included cost, comfort, and environment. This is also consistent with goals listed in MTC Plan Bay Area 2040 (Table 2.1 page 27) and is listed in the Caltrans US 101 North Comprehensive Corridor Plan.
[2] A guiding principle of the TAM Strategic Vision Plan was promoting a healthy environment and health population (Figure 1 page 14). The walking/biking network was identified as a means to support public health (page 37) by encouraging exercise.
[3] Transportation priorities identified during 2015 public outreach were ranked (TAM Strategic Vision Plan). Congestion relief was the public's top priority (Figure 15, page 45). Reduced congestion is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

- **Goal 3: Improve Multimodal Access to/from and across Highway 101**[4]
  - Evaluation Criterion 1: Enhances intermodal connectivity and removes access barriers
    - *Performance Measure*: Improved connectivity for public transit
      Scoring: Higher scoring for concepts that provide most improvement in connectivity for public transit (qualitative)
    - *Performance Measure*: Improved pedestrian connectivity and ADA
      Scoring: Higher scoring for concepts that provide most improvement in connectivity for pedestrians (qualitative)
    - *Performance Measure*: Improved bicycle infrastructure and gap closure, level of comfort
      Scoring: Higher scoring for concepts that provide most improvement in connectivity for transit users, bicyclist, and pedestrians
- **Goal 4: Promote Economic Vitality**[5]
  - Evaluation Criterion 1: Accommodates future land use changes and growth
    - *Performance Measure*: Assessment of future operating conditions with forecast growth
      Scoring: Higher scoring for improvements that accommodate future anticipated growth with multimodal solutions[6]
  - Evaluation Criterion 2: Cost effectiveness
    - *Performance Measure*: Cost-benefit ratio
      Scoring: Higher scoring for interchanges with favorable ratios based on cost per vehicle entering interchange area (excludes through traffic on Highway 101)
  - Evaluation Criterion 3: Reduces transportation costs
    - *Performance Measure*: Reduction in delay[7]
      Scoring: Higher scoring for improvements with greater reduction in VHD (PM peak) * value of time ($)
  - Evaluation Criterion 4: Social Equity
    - *Performance Measure*: Benefit to Environmental Justice (EJ) communities
      Scoring: Higher scoring for relative incidence by interchange (% of EJ population to general population within the interchange vicinity)
- **Goal 5: Implementability**
  - Evaluation Criterion 1: Attractiveness to funding sources
    - *Performance Measure*: Funding criteria/potential
      Scoring: Higher scoring for projects that meet funding criteria[8], or could be substantially funded by multiple sources
  - Evaluation Criterion 2: Ease of regulatory approval
    - *Performance Measure*: Project can obtain necessary approvals
      Scoring: Higher scoring projects with limited right-of-way and/or permitting needs (qualitative)

A summary of the proposed goals and evaluation criteria is included in Table 1.

[4] Public outreach identified multimodal priorities (bike facility installation/upgrades) as the second transportation priority (TAM Strategic Vision Plan). Bus, rail service, and safe routes to school were ranked as priorities three through six (Figure 15, page 45). Improved multimodal access is consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan, as well.

[5] Consistent with the goals of the Caltrans US 101 North Comprehensive Corridor Plan.

[6] Table 10 (page 39) lists major development projects in the near-term (TAM Strategic Vision Plan).

[7] US 101 is identified as a major goods movement corridor (MTC San Francisco Bay Area Goods Movement Plan). This highway also connects agriculture shippers with markets in the Bay Area. Highway reliability is a key to movement of goods (Table 4.1, page 27).

[8] For example, improvements that reduce traffic congestion, improve pedestrian/bike infrastructure, remove barriers to mobility, and expand transit services meets several categories of Marin County Measure AA funding (TAM 2019 CMP Update).

Scoring & Weighting

Each performance measure may score within the range of 1 to 5. As there are a differing number of performance measures under each evaluation criteria and/or each Goal and Objective, the score is averaged across each performance measure provide a single score for the overall goal category.

The scoring will reflect the relative benefit provided under each measure, as follows:

5 – High
4 – Med/high
3 – Med
2 – Low/Med
1 – Low

A weighting factor is then applied to the goal category, providing a weighting rank from one to five. The weighting factor will be determined in consultation with the Executive Committee and reflect the relative importance of each goal to the Committee.

REFERENCES:

California Department of Transportation. 2018. US 101 North Comprehensive Corridor Plan.

Metropolitan Transportation Commission. 2017. Plan Bay Area 2040.

Metropolitan Transportation Commission. 2016. San Francisco Bay Area Goods Movement Plan.

Transportation Authority of Marin. 2019. 2019 Congestion Management Program Update.

Transportation Authority of Marin. 2017. Getting Around Marin: Strategic Vision Plan.

Table 1: Goals and Evaluation Methodology

Goals & Objectives	Evaluation Criteria	Performance Measures	Scoring Metric (1-5)	Prioritization/Weight (1-5)
Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions	Percentage of mandatory nonstandard conditions removed	
		Provides separation of transportation modes	Provision of sidewalks, protected bike facilities, etc. (qualitative)	
	Enhances emergency response and evacuation	Population served by interchange	ADT on arterial crossing Highway 101	
		Availability of alternative routes to Hwy 101	Availability (lack) of alternative egress routes	
	Promotes active transportation	Improved pedestrian connectivity/ADA	Level of connectivity improvement provided (qualitative)	
		Improved bicycle infrastructure and gap closure, level of comfort	Level of connectivity improvement provided (qualitative)	
	Reduces greenhouse gas emissions and improves air quality	Reduction in delay	Percentage reduction in GHG emissions (existing PM peak)	
Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Level of Service	Percentage of intersections improved from unacceptable to acceptable performance (existing PM peak)	
		Vehicle hours of delay	Reduction in VHD (weighted average by volume, PM peak)	
Improve Multimodal Access to/ from and across Highway 101	Enhances intermodal connectivity and removes access barriers	Improved connectivity for transit	Level of increased connectivity provided (qualitative)	
		Improved pedestrian connectivity and ADA	Level of connectivity improvement provided (qualitative)	

Goals & Objectives	Evaluation Criteria	Performance Measures	Scoring Metric (1-5)	Prioritization/Weight (1-5)
		Improved bicycle infrastructure & gap closure, level of comfort	Level of connectivity improvement provided (qualitative)	
Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth	Ability to accommodate future traffic demand (qualitative)	
	Cost effectiveness	Cost-benefit ratio	Cost per vehicle entering interchange area	
	Reduces transportation costs	Cost of delay	Reduction in VHD (PM peak) value of time ($)	
	Social Equity	Benefit to EJ communities	Incidence (% of EJ to general population)	
Implementability	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)	Appeal to potential funding sources (qualitative)	
	Ease of regulatory approval	Ability to gain project approvals	Right-of-way and/or permitting complexity (qualitative)	

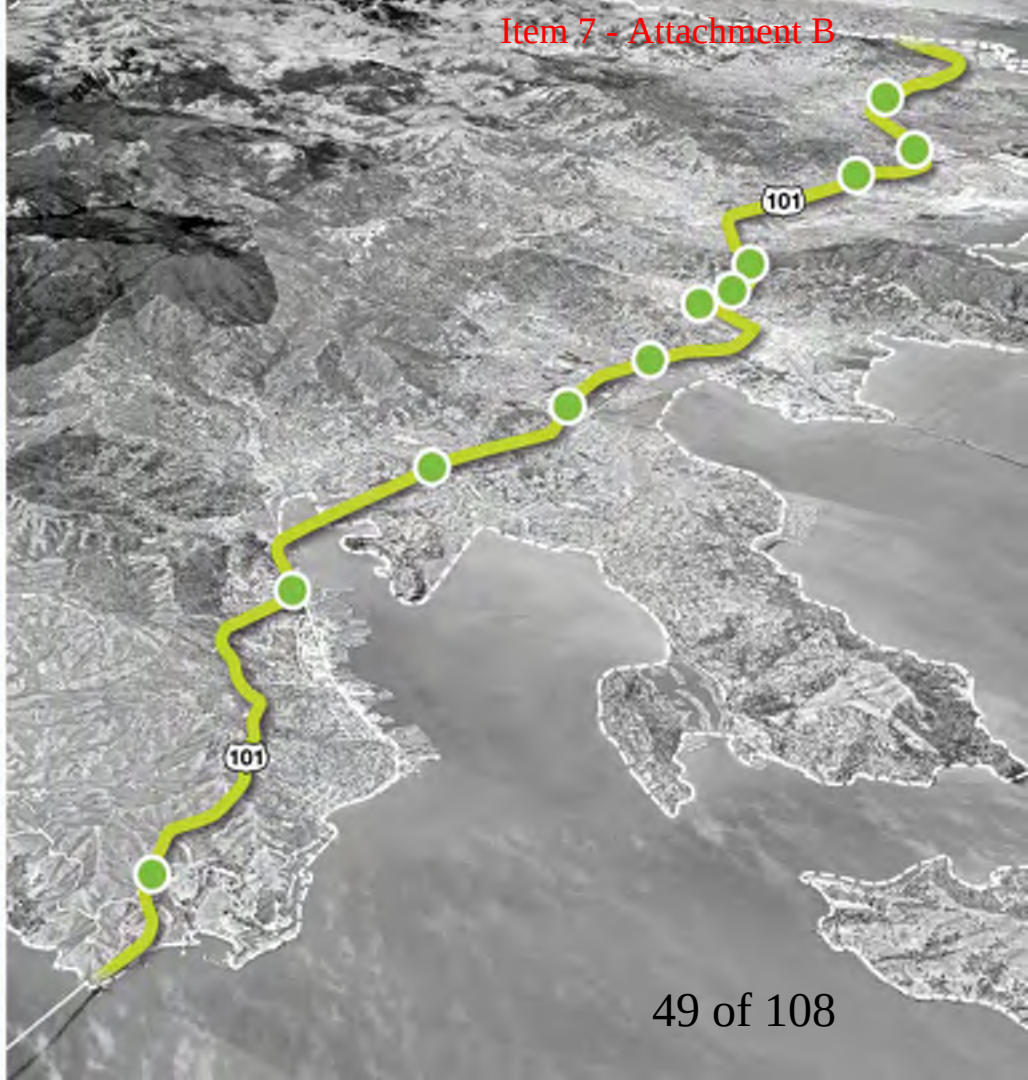
Transportation Authority of Marin

Presentation to TAM Administration, Projects & Planning Executive Committee, Agenda Item No. 7

Preparation of Studies for Improvements to Highway 101 Interchanges and Approaching Roadways in Marin County

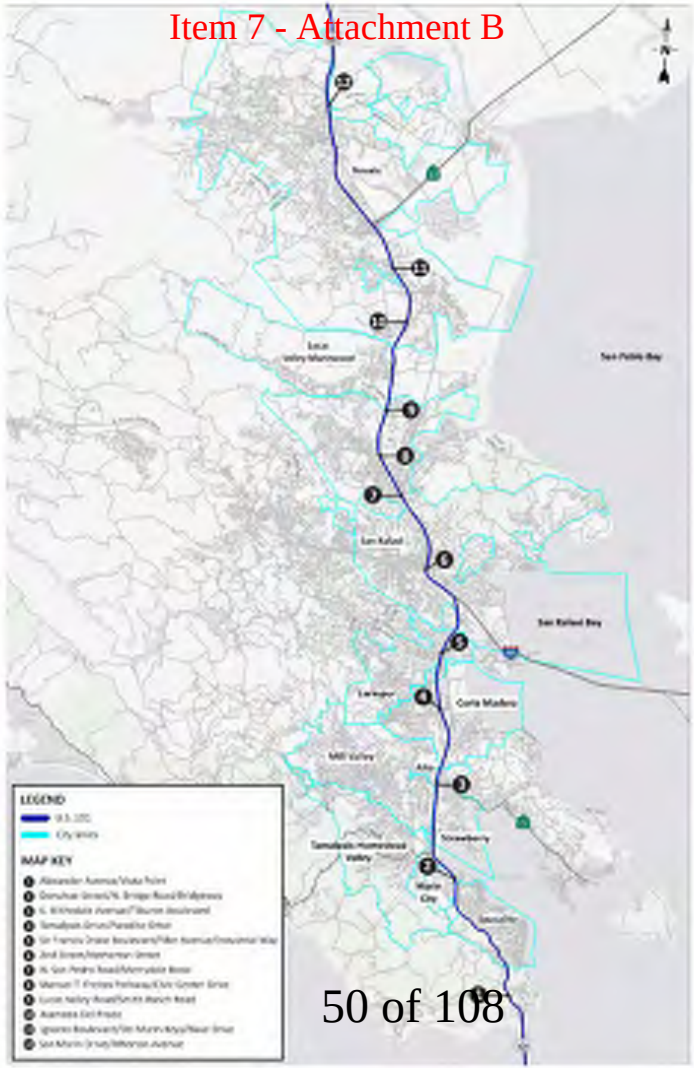
Program Evaluation Methodology

HNTB with Parisi TRANSPORTATION CONSULTING



Selected 12 Interchanges

1. Alexander Avenue
2. Sausalito/Marin City
3. Tiburon Blvd./East Blithedale Avenue
4. Paradise Drive/Tamalpais Drive
5. Sir Francis Drake Boulevard
6. San Rafael On-Ramp at 2nd Street and Hetherton Avenue
7. Merrydale Road/North San Pedro Road
8. Manuel T. Freitas Parkway
9. Lucas Valley Road/ Smith Ranch Road
10. Alameda Del Prado/ Nave Drive*
11. Ignacio Boulevard
12. San Marin Drive/ Atherton Avenue



* 12th Interchange added

Project Status

- Completed
  - ✓ Existing Conditions Assessments
  - ✓ Online Survey
- Current Activities
  - Opportunities & Concept Development
- Upcoming Activities
  - Public Outreach Activities
  - Existing Conditions, Constraints & Opportunities Memo
  - Evaluation and Prioritization

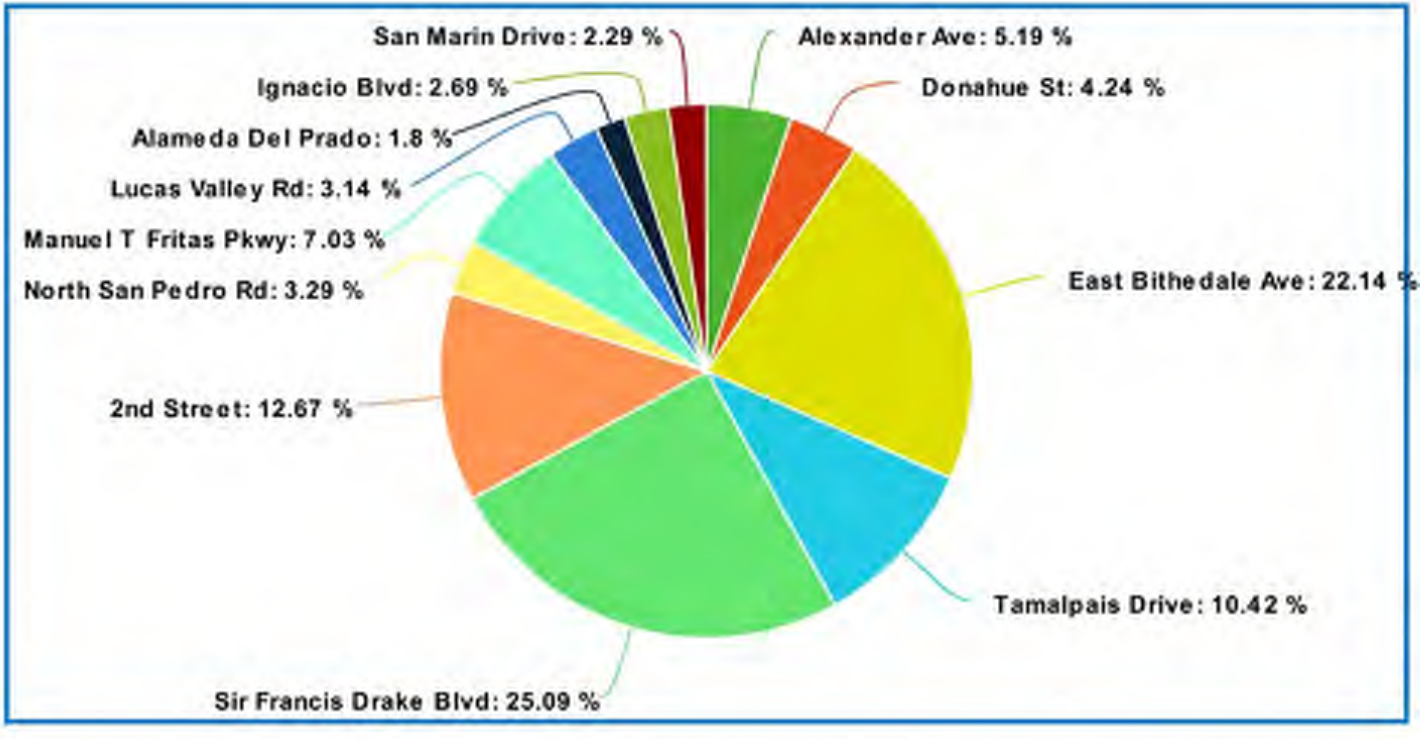
Public Outreach

- Online Survey Conducted from mid-March to mid-April
  - Available in English and Spanish
- Two rounds of Jurisdictional Meetings – Dec 2020, April/May 2021
- Future Public Workshops

Online Survey

- Conducted March 17 – April 16, 2021
- 2758 Respondents
- 4 Primary Inputs:
  - How do you normally travel through this interchange?
  - What are the main purposes you use this interchange for?
  - Please rank …priorities… for this interchange based on their importance to you.
  - Is there anything else you'd like to let us know about traveling on or around this interchange?

Online Survey – Responses by Interchange

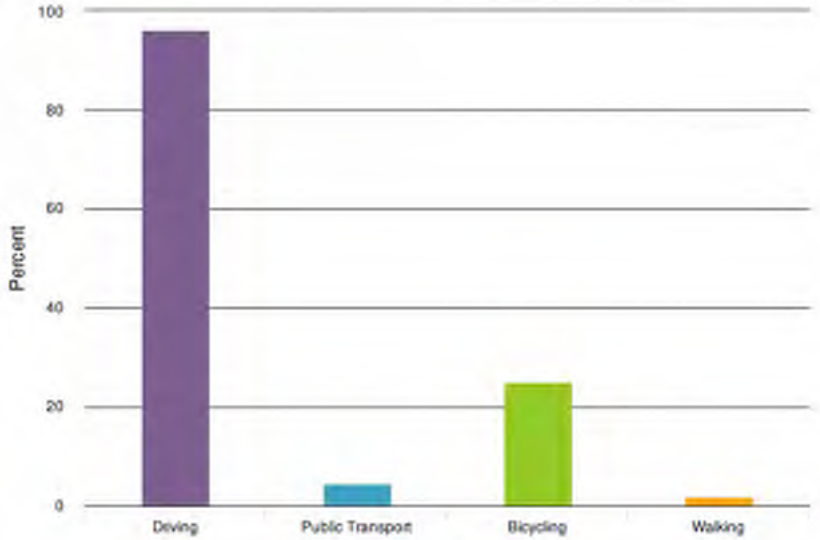


Online Survey – Responses by Interchange

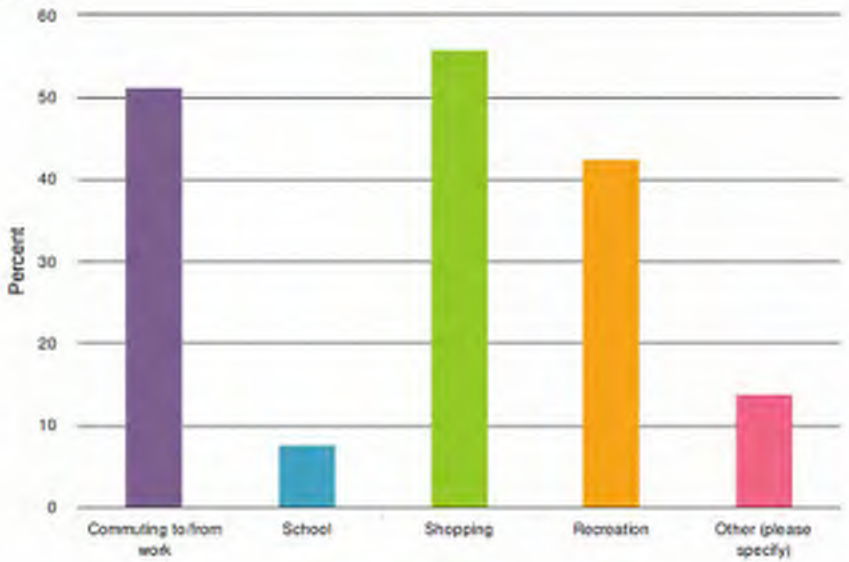
Interchange	Primary Modes	Primary Purposes	Priorities	# of Responses	# of Additional Comments
San Marin Drive / Atherton Ave	Driving Bicycling	Commuting Shopping	Reduce traffic congestion Make it safer to bike	41	22
Ignacio Blvd / Bel Marin Keys / Nave Drive	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Make it safer to walk	53	32
Alameda Del Prado/Nave Drive	Driving Bicycling	Commuting Recreation	Make it safer to bike Make if safer to walk	39	25
Lucas Valley Road / Smith Ranch Rd	Driving Bicycling	Commuting Shopping/Recreation	Reduce traffic congestion Make it safer to bike/walk/bus access	81	48
Manuel T Freitas Parkway / Civic Center Drive	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Make it safer to bike/walk	171	182
North San Pedro Road / Merrydale Road	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Make it safer to bike/walk	95	58
2nd Street and Hetherton St	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Make it safer to bike/walk	304	183
Sir Francis Drake Blvd / Fifer Ave / Industrial Way	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Sustainability/Resiliency	616	507
Tamalpais Dr / Paradise Dr	Driving Bicycling	Shopping Commuting/Recreation	Reduce traffic congestion Make it safer to bike/walk	253	166
East Blithedale Ave / Tiburon Blvd	Driving Bicycling	Shopping Commuting	Reduce traffic congestion Make it safer to bike/walk	502	307
Donahue Street / North Bridge Road / Bridgeway	Driving Bicycling	Commuting Shopping	Reduce traffic congestion Make it safer to bike/walk	95	58
Alexander Ave/Vista Point	Driving Bicycling	Recreation Commuting	Make it safer to bike/walk Reduce traffic congestion	133	89

Online Survey – E. Blithedale Ave/Tiburon Blvd (SR 131)

9. How do you normally travel through this interchange? Select up to 2



10. What are the main purposes you use this interchange for? Select up to 2



Online Survey – E. Blithedale Ave/Tiburon Blvd (SR 131)

	Not Important	Lower Importance	No Opinion	Somewhat Important	Most Important
	Row %	Row %	Row %	Row %	Row %
Reduce traffic congestion	1.0%	1.6%	1.9%	15.7%	79.7%
Make it easier to drive to and from this interchange	3.7%	3.7%	4.9%	24.1%	63.5%
Improve the quality and access to bus stops near this interchange	23.6%	16.3%	36.4%	16.3%	7.4%
Increase Park and Ride capacity	27.6%	14.9%	35.8%	16.3%	5.4%
Make it safer to walk around this interchange	18.6%	15.2%	24.1%	25.5%	16.6%
Make it safer to bike around this interchange	19.7%	11.0%	19.6%	25.0%	24.7%
Improve lighting and security	17.9%	15.2%	34.7%	23.1%	9.1%
Improve environmental sustainability and resiliency (e.g. protection from flooding and sea level rise)	10.8%	8.4%	14.3%	35.6%	31.0%

Online Survey – E. Blithedale Ave/Tiburon Blvd (SR 131)

A total of 307 participants provided additional input:

- Traffic operations (i.e., traffic lane designation and turn lane storage)
- Provide separate bike/pedestrian structure to provide additional bridge width for lane reassignments on overpass
- Traffic signal timing (coordination of timing between different jurisdictions)
- Traffic capacity on overpass (eastbound)
- Widen existing bridge for additional lanes
- Bike lane continuity on overpass
- Provide safe bike facility
- Provide a separate bike facility
- Access to bus stops by pedestrians and bicyclists

Improvement Opportunities – Near and Long-Term

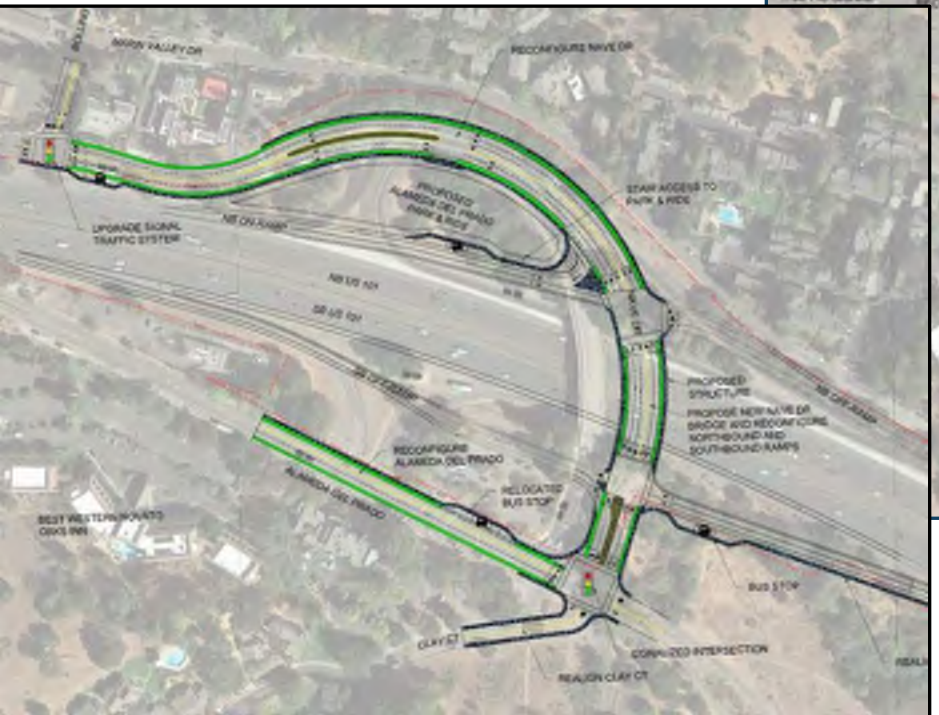
Sample project components:

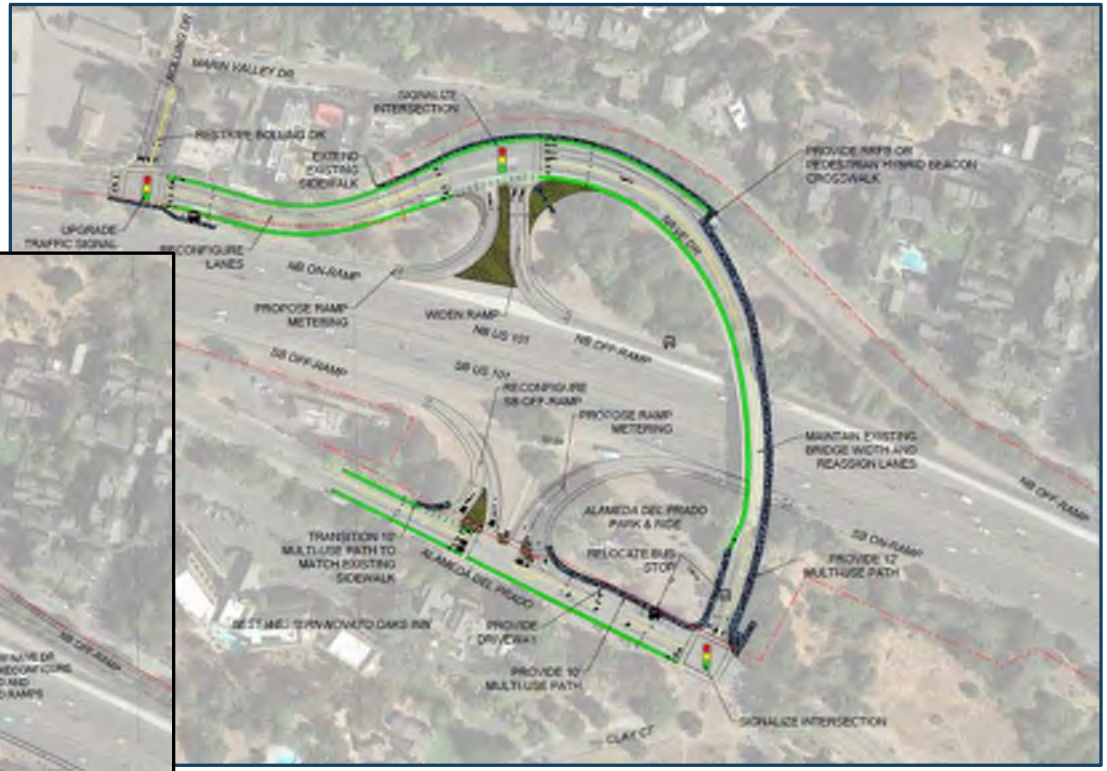
Near-Term	Long-Term
Lane reconfiguration & reassignments	Separated bike/ped paths
Resolve discontinuities in bike lanes	Separate bike/ped overcrossings
Resolve paths of travel & ADA	Structure widening
Signalization and crossing protections	Roundabouts
Tighten curb returns/shorten crosswalks	New interchange configuration
Ramp metering	Significant ROW acquisitions
Access to transit & interconnectivity	Significant environmental impacts

Improvement Opportunities – Alameda Del Prado/Nave Dr.

DRAFT

Long-Term





Near-Term

Identified Goals and Objectives

- Goal 1: Enhance Health and Safety
- Goal 2: Relieve Local Traffic Congestion
- Goal 3: Improve Multimodal Access to/from and across Highway 101
- Goal 4: Promote Economic Vitality
- Goal 5: Implementability

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 1: Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions
		Provides separation of transportation modes
	Enhances emergency response and evacuation	Population served by interchange
		Availability of alternative routes to Hwy 101
	Promotes active transportation	Improved pedestrian connectivity/ADA
		Improved bicycle infrastructure and gap closure, level of comfort
	Reduces greenhouse gas emissions and improves air quality	Reduction in delay

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 2: Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Level of Service
		Vehicle hours of delay

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 3: Improve Multimodal Access to/from and across Highway 101	Enhances intermodal connectivity and removes access barriers	Improved connectivity for transit
		Improved pedestrian connectivity and ADA
		Improved bicycle infrastructure & gap closure, level of comfort

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 4: Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth
	Cost effectiveness	Cost-benefit ratio
	Reduces transportation costs	Cost of delay
	Social Equity	Benefit to EJ communities

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Implementability	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)
	Ease of regulatory approval	Ability to gain project approvals

Sample Scoring – Generic Project

Goals & Objectives	Evaluation Criteria	Performance Measures	Score (1-5)	Average Score	Weight (1-5)	Weighted Score
Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions	2	3.5	5	18
		Provides separation of transportation modes	3			
	Enhances emergency response and evacuation	Population served by interchange	4			
		Availability of alternative routes to Hwy 101	3			
		Improved pedestrian connectivity/ADA	3			
	Promotes active transportation	Improved pedestrian connectivity/ADA	4			
		Improved bicycle infrastructure and gap closure, level of comfort	4			
	Reduces greenhouse gas emissions and improves air quality	Reduction in delay	5			
Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current	Level of Service	4	4.5	3	14
		Vehicle hours of delay	5			
Improve Multimodal Access to/ from and across Highway 101	Enhances intermodal connectivity and removes access barriers	Improved connectivity for transit	1	2.8	1	3
		Improved pedestrian connectivity and ADA	3			
		Improved bicycle infrastructure & gap closure, level of comfort	3			
		Accommodates future land use changes and growth	4			
Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth	4	3.3	2	7
	Cost effectiveness	Cost-benefit ratio	2			
	Reduces transportation costs	Cost of delay	4			
	Social Equity	Benefit to EJ communities	3			
Implementability	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)	3	2.5	4	10
	Ease of regulatory approval	Ability to gain project approvals	2			
		TOTALS				50

Q & A

Appendix D

Evaluation Methodology Confirmation: TAM Board Action February 2022

DATE: February 24, 2022

TO: Transportation Authority of Marin Board of Commissioners

FROM: Anne Richman, Executive Director
Bill Whitney, Principal Project Delivery Manager

SUBJECT: Approval of the Highway 101 Interchange and Approaching Roadway Study Evaluation Methodology (Action), Agenda Item No. 6d

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RECOMMENDATION

The TAM Board reviews and approves the Highway 101 Interchange and Approaching Study Evaluation Methodology. At its meeting on February 14, 2022, the Administration, Projects and Planning (AP&P) Executive Committee heard the Highway 101 Interchange and Approaching Roadway Study status update, confirmed the evaluation methodology, and voted unanimously to refer the methodology to the Board for approval. The Committee also requested that staff test the methodology to determine if it is working as intended and return for further discussion if significant adjustments are needed.

BACKGROUND

The Highway 101 Interchange and Approaching Roadway Study is included in the Measure AA ½-Cent Transportation Sales Tax Expenditure Plan. The Expenditure Plan allocates 3% of the revenue from the sales tax to the Study, estimated at $24.8 million over the 30-year period of the Measure.

The Expenditure Plan states the following:

> "Accessing Highway 101 in Marin is a major source of congestion on local roads, which reduces the connectivity of communities across Marin. These funds would be used to attract regional, state, and federal funds for a program of improvements to interchanges and local roads. These improvements would improve the operation and safety of these interchanges for all users, allowing smoother travel to and from Highway 101. These funds provide seed money to perform the planning, the public outreach, and to develop the scope of improvements needed at these interchanges."

DISCUSSION

The overall approach of the study is to identify operational and safety improvements for all users of an interchange and approaching roadways including adjacent intersections. Many of the Highway 101 interchanges were built years ago when Marin's traffic was much different than today and are considered to have numerous operational deficiencies and non-standard features as compared to current design practices. They were also built during an era that was auto centric and did not accommodate or equally consider other users such as pedestrians, cyclists, and transit riders.

TAM staff and consultants are well underway with developing the study. We have collected a lot of data about users of the Interchanges, including vehicles, transit ridership, and pedestrian travel patterns. We have also documented the existing conditions and constraints (i.e., environmental, potential flooding, and right-of-way) and prepared models that provide a forecast for future travel conditions as land use changes. This information will be included in an Existing Conditions, Constraints, and Opportunities Report.

TAM staff and consultants have hosted meetings with member agency staff, including the Public Works Departments and Community Development Departments, as well as staff from Golden Gate Bridge, Highway, and Transportation District (GGBHTD), Marin Transit, and Caltrans. These meetings have helped the team develop a baseline understanding of the geometry and operations of the interchanges and approaching roadways. Based on the input, the team has developed improvement concepts for each interchange. We are grouping the improvement concepts in a manner that allows us to propose sets of near-term and long-term improvements that can then be assessed using the evaluation methodology. The team has circled back multiple times to confirm agency support after reviewing the improvement concepts in detail.

In July 2021, staff presented the Goals and Objectives, Evaluation Criteria & Performance Measures including the draft Prioritization/Weighting. The AP&P Executive Committee provided valuable feedback to staff and the consulting team on the draft evaluation process. The team has since refined the evaluation process to incorporate Commissioner comments. A table outlining the goals and objectives with draft Evaluation Criteria, Performance Measures, and Scoring Criteria is attached to this report (Attachment A). It should be noted that a VMT analysis is embedded in this process.

Establishing a clear and concise evaluation methodology is a critical step to help guide priorities and benefits of proposed improvements to an interchange.

FISCAL IMPACTS

None.

NEXT STEPS

Staff will incorporate the input received from both the Board and the AP&P Executive Committee into the evaluation methodology and begin the evaluation process.

The study is expected to be completed this Summer and the results will be brought back to the Board for review and acceptance.

ATTACHMENT

Attachment A – PowerPoint Presentation




Preparation of Studies for Improvements to Highway 101 Interchanges and Approaching Roadways in Marin County

Evaluation Criteria, Performance Metrics & Scoring Matrix

Transportation Authority of Marin

Board of Commissioners

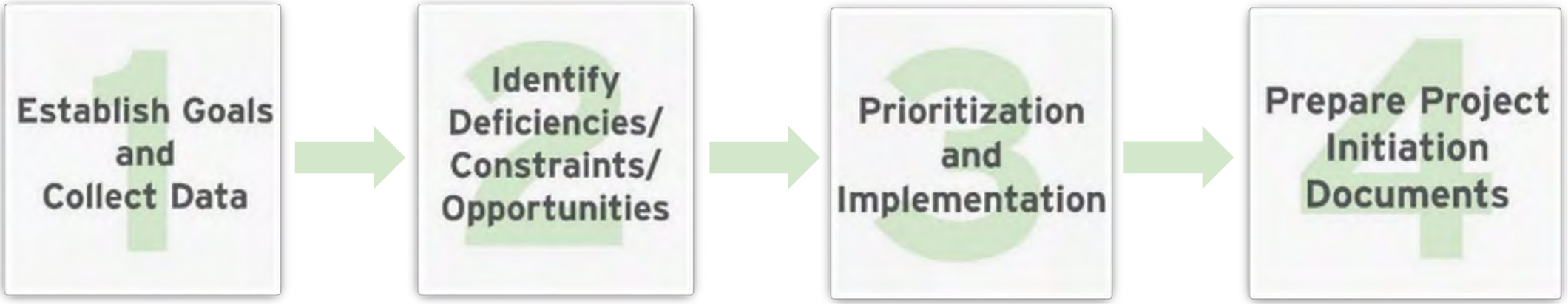
February 24, 2022

Agenda

- Project Overview & Status
- Improvement Concepts
- Evaluation Criteria & Performance Measure
- Performance Measure Scoring Metrics
- Concurrence on Weighting of Goals and Objectives
- Next Steps

Project Overview & Status

Study Process



Future Phase

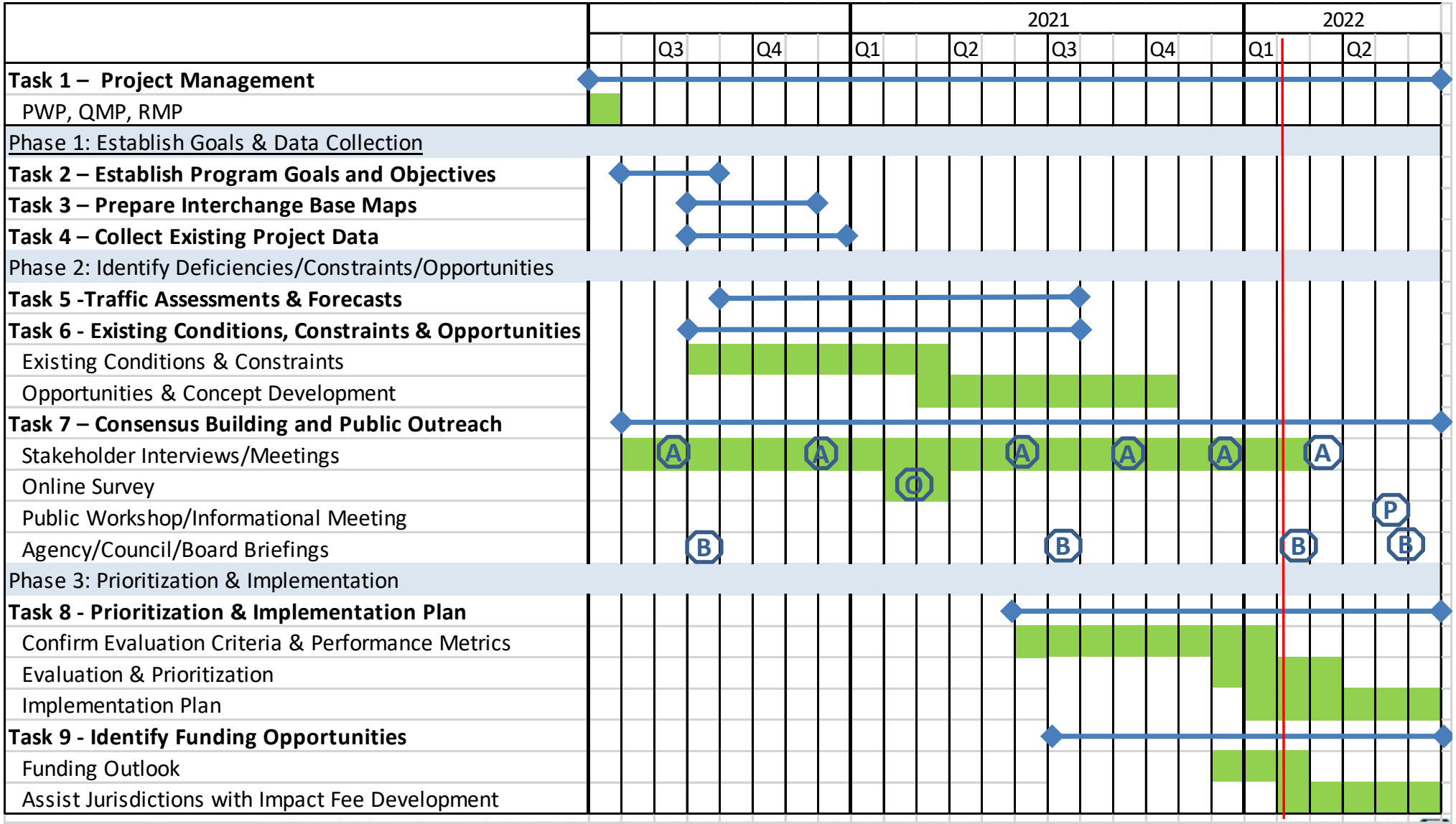
12 Interchanges in Study

1. Alexander Avenue
2. Sausalito/Marin City
3. Tiburon Blvd./East Blithedale Avenue
4. Paradise Drive/Tamalpais Drive
5. Sir Francis Drake Boulevard
6. San Rafael On-Ramp at 2nd Street/Hetherton Avenue
7. Merrydale Road/North San Pedro Road
8. Manuel T. Freitas Parkway
9. Lucas Valley Road/Smith Ranch Road
10. Alameda Del Prado/ Nave Drive
11. Ignacio Boulevard
12. San Marin Drive/ Atherton Avenue

Project Status

- Completed
  - Existing Conditions Assessments
  - Online Survey
  - Opportunities & Concept Development
  - Cost Estimates
- Current Activities
  - Preliminary Evaluation
- Upcoming Activities
  - Existing Conditions, Constraints & Opportunities Report
  - Public Outreach Activities
  - Prioritization & Implementation Plan

Project Timeline/Review Points



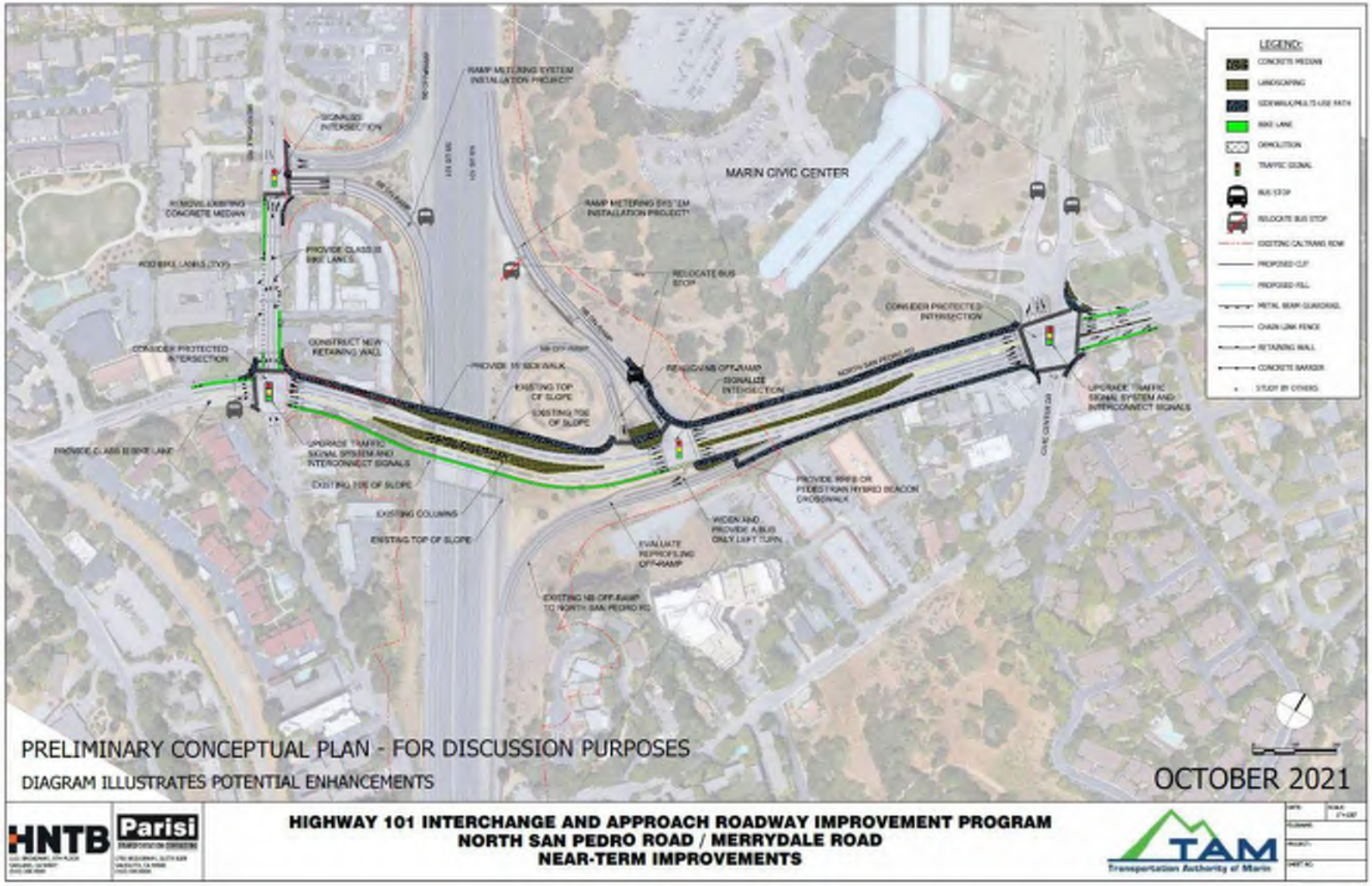
Improvement Concepts

Improvement Opportunities – Near and Long-Term

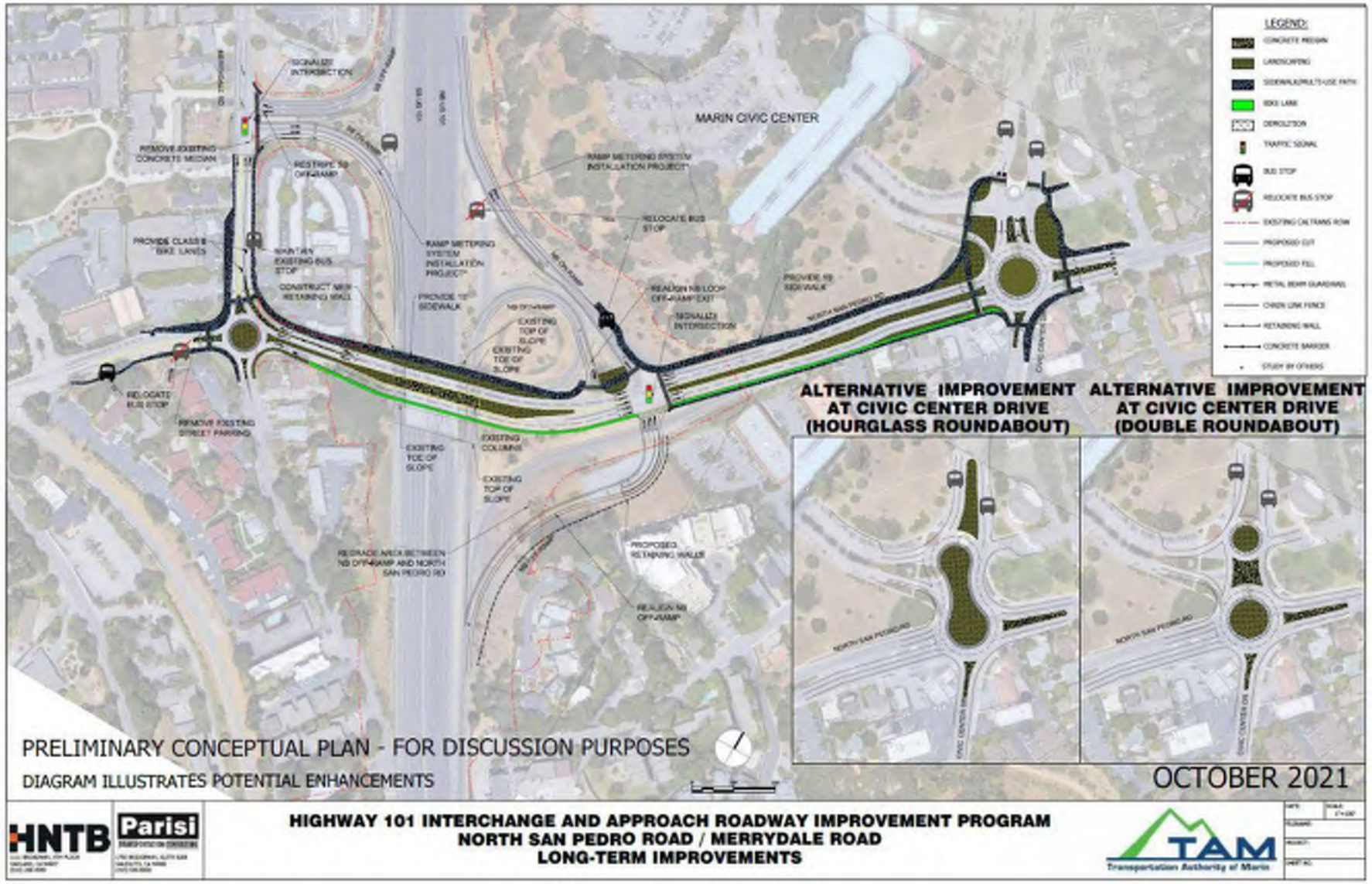
Sample project components:

Near-Term	Long-Term
Lane reconfiguration & reassignments	Separated bike/ped paths
Resolve discontinuities in bike lanes	Separate bike/ped overcrossings
Resolve paths of travel & ADA	Structure widening
Signalization and crossing protections	Roundabouts
Tighten curb returns/shorten crosswalks	New interchange configuration
Ramp metering	Significant ROW acquisitions
Access to transit & interconnectivity	Significant environmental impacts

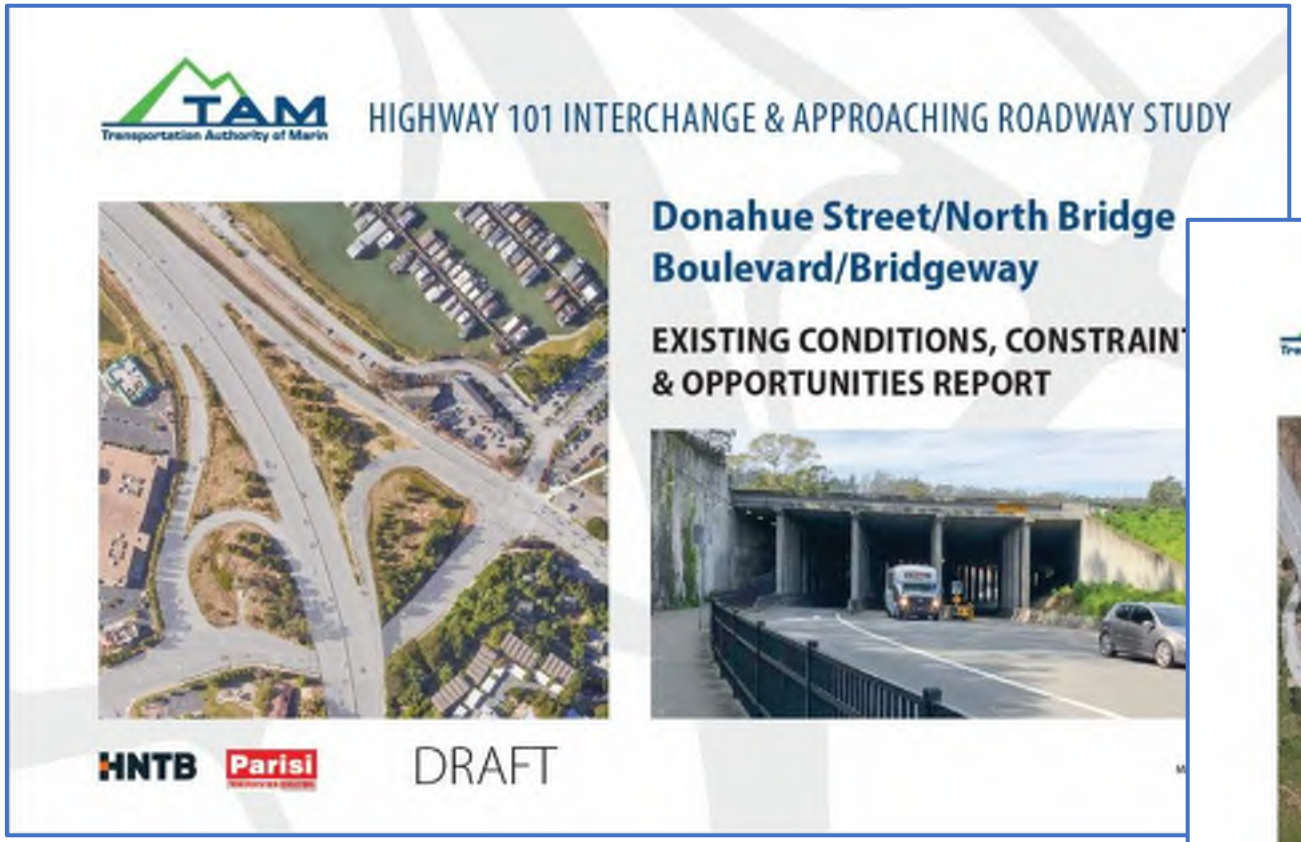
Improvement Concepts: N. San Pedro Rd. – Near-Term

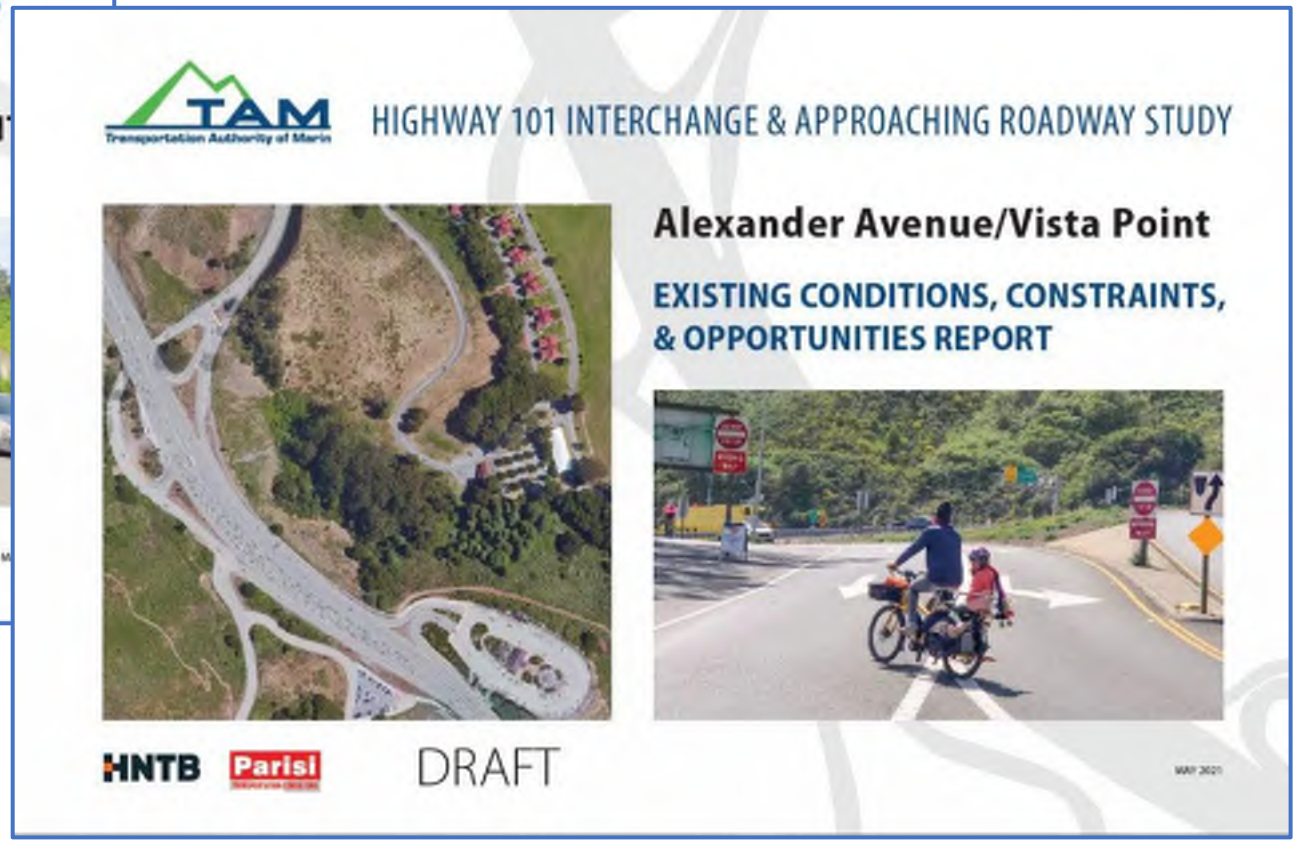


Improvement Concepts: N. San Pedro Rd. – Long-Term



Finalizing Existing Conditions, Constraints & Opportunities Report





Goals, Objectives, Evaluation Criteria & Performance Measures

Prior Feedback from Executive Committee

- Consider goals that are in line with TAM's values, such as multi-modal and transit projects
- Prioritize short-term deliverable projects
- Incorporate social equity as a criterion
- Traffic congestion and safety are also important criteria
- Access to jobs, emergency access, climate change/resiliency also noted

Feedback from MPWA on Performance Measures

- Supportive of process and established measures
- Capture secondary effect such as travel diversion
- Consider evaluating person delay in addition to vehicle delay
- Evaluate Transit connectivity between local and regional transit users
- Social Equity may not be best fitted for Economic Vitality
- Consider users

Largely captured within the scoring, but can also be addressed in narrative

Identified Goals and Objectives

- Goal 1: Enhance Health and Safety
- Goal 2: Relieve Local Traffic Congestion
- Goal 3: Improve Multimodal Access to/from and across Highway 101
- Goal 4: Promote Economic Vitality
- Goal 5: Implementability

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 1: Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions that contribute to collisions
		Provides separation of transportation modes
	Enhances emergency response and evacuation	Population served by interchange
		Availability of alternative routes to Hwy 101
	Promotes active transportation	Improved pedestrian connectivity/ADA
		Improved bicycle infrastructure and gap closure, level of comfort
	Reduces greenhouse gas emissions and improves air quality	Reduction in delay

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 2: Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Vehicle hours of delay

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 3: Improve Multimodal Access to/from and across Highway 101	Enhances intermodal connectivity and removes access barriers	Improved connectivity for transit
		Improved pedestrian connectivity and ADA
		Improved bicycle infrastructure & gap closure, level of comfort

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goal 4: Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth
	Reduces transportation costs	Cost of delay
	Social Equity	Benefit to Equity communities

Evaluation Criteria & Performance Measures

Goals & Objectives	Evaluation Criteria	Performance Measures
Goals 5: Implementability	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)
	Ease of regulatory approval	Ability to gain project approvals
	Benefit to costs	Delivers high benefit for project cost

Performance Measure Scoring Metrics

Evaluation Criteria Summary Table

Goals & Objectives	Evaluation Criteria	Performance Measures	Scoring Metric
1. Enhance Health and Safety	Improves safety for all modes	Removes/improves nonstandard conditions	Remedy of non-standard design features or operating conditions that potentially contribute to incidence of collisions
		Provides separation of active transportation modes	Provision of separated pedestrian and/or bike facilities (qualitative)
	Enhances emergency response and evacuation	Population served by interchange	ADT on arterial crossing Highway 101, factored by percent reduction in delay
		Availability of alternative routes to Hwy 101	Level of access and proximity to full interchange
	Promotes active transportation	Improved pedestrian connectivity/ADA	Level of connectivity improvement provided (qualitative)
		Improved bicycle infrastructure and gap closure, level of comfort	Level of connectivity improvement provided (qualitative)
	Reduces greenhouse gas emissions and improves air quality	Reduction in congestion	Percentage reduction in GHG emissions (existing PM peak)
2. Relieve Local Traffic Congestion	Alleviates congestion and improves traffic flow for current and future traffic	Vehicle hours of delay	Reduction in VHD (average of AM and PM peak hour delay)
3. Improve Multimodal Access to/ from and across Highway 101	Enhances connectivity and removes access barriers	Improved connectivity for transit	Level of increased connectivity & reduction in regional travel time provided (qualitative)
		Improved intermodal pedestrian connectivity and ADA access	Level of connectivity improvement provided (qualitative)
		Improved bicycle infrastructure & gap closure, level of comfort	Level of connectivity improvement provided, improved level of stress (qualitative)
4. Promote Economic Vitality	Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth	Ability to accommodate future traffic demand (qualitative) based on reduction in delay and proximity to PDA
	Reduces transportation costs	Cost of delay	Reduction in VHD (PM peak) * value of time ($)
	Social Equity	Benefit to Equity Communities	Incidence (presence of Equity Communities within the interchange vicinity) with improved mobility options
5. Implementability	Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)	Appeal to potential funding sources (qualitative)
	Ease of regulatory approval	Ability to gain project approvals	Project development, right-of-way and/or permitting complexity (qualitative)
	Benefit to costs	Delivers high benefit for project cost	Project benefit as evaluated against goals compared to project cost

Concurrence on DRAFT Goals and Objectives Weighting

False Goals & Objectives	Goal Weight (1 - 100% of Total)	Evaluation Criteria
1. Enhance Health and Safety	23%	Improves safety for all modes
		Enhances emergency response and evacuation
		Promotes active transportation
		Reduces greenhouse gas emissions and improves air quality
2. Relieve Local Traffic Congestion	22%	Alleviates congestion and improves traffic flow for current and future traffic
3. Improve Multimodal Access to/from and across Highway 101	20%	Enhances connectivity and removes access barriers
4. Promote Economic Vitality	15%	Accommodates future land use changes and growth
		Reduces transportation costs
		Social equity
5. Implementability	20%	Attractiveness to funding sources
		Ease of regulatory approval
		Benefit to costs

Next Steps

- Evaluate Near-Term and Long-Term Improvement Concepts Using Evaluation Process Presented Today
- Public Outreach on Improvement Concepts and Findings
- Present Evaluation Results and Preliminary Prioritization Recommendations

Public Outreach Process

- Materials to be Presented:
  - Improvement Concepts
  - Evaluation Results
  - Draft Implementation Plan
- Three Meetings: North, Central & South County
- Workshops in Spring

Questions?

Thank you!

Bill Whitney

Transportation Authority of Marin

bwhitney@tam.ca.gov

415-226-0823

Appendix E

Evaluation Methodology Changes Memo

Memorandum

Date: March 15, 2022
To: Bill Whitney, TAM
From: Kim Franchi, HNTB
David Parisi, Parisi Transportation Consulting
Subject: Highway 101 Interchanges and Approaching Roadways Study: Response to Evaluation Methodology Comments from the Marin Public Works Association and the Transportation Authority of Marin Executive Committee

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Introduction

This memorandum addresses minor changes made to the Highway 101 Interchanges and Approaching Roadways Project goals and objectives, evaluation criteria, and/or performance measures based on input from members of the Marin Public Works Association (January 20, 2022) and from commissioners on the Transportation Authority of Marin's Executive Committee (February 14, 2022).

Marin Public Works Association

The Marin Public Works Association (MPWA) was asked for input on the evaluation criteria and performance measures. Members concurred on the criteria and the majority of performance measures, but a member requested that person-hours of delay be used as a metric in lieu of vehicle-hours of delay, where applicable. In addition, a member requested confirmation that transit connectivity be included as a metric.

Person hours of Delay: Goal 2, "Relieve Local Traffic Congestion," and the "Accommodates Future Land Use Changes and Growth" evaluation criteria under Goal 4 "Promote Economic Vitality," were revised to use person-hours of delay. Person-hours of delay estimates were developed based on the modeled vehicle hours of delay results but factored to account for vehicle occupancy rates, including passenger vehicles and buses. Census data from the most recent American Community Survey provided vehicle ridership and carpool statistics for Marin County that yielded a base vehicle occupancy rate for passenger vehicles. While this base rate was used for all the interchange locations, each location was categorized into various bus occupancy rates, based on the available public transit data, such as the number of routes served, frequency of buses, and volume of rider on- and off-boardings. A combined, overall occupancy rate, varying by interchange location, plus the modeled vehicle-hours of delay, determined the person-hours of delay reductions for each interchange concept.

Transit Connectivity: Transit connectivity between local and regional transit users is incorporated into the evaluation criteria as part of the "Improved Connectivity for Transit" performance measure under Goal 3. This performance measure considers travel time, bus stop locations, and ridership levels, among other elements.

Transportation Authority of Marin's Executive Committee

During the Transportation Authority of Marin (TAM) Executive Committee meeting, Commissioners were asked for their input on initial weightings to use for the Goals and Objectives scores, which were derived based on input from a previous Executive Committee meeting on July 12, 2021. The commissioners concurred with the following weights:

- Goal & Objective 1: Enhance Health and Safety: 23%
- Goal & Objective 2: Relieve Local Traffic Congestion: 22%
- Goal & Objective 3: Improve Multimodal Access to/from and across Highway 101: 20%
- Goal & Objective 4: Promote Economic Vitality: 15%
- Goal & Objective 5: Implementability: 20%

The project team will also be able to perform sensitivity testing of these weights, where an alternate set of weights, with various goals and objectives being weighted higher or lower, can be applied. This could assist in understanding how the total weighted scores for each interchange could vary depending on the which goals are given more influence. Interchange locations that perform well under several different tailored perspectives are more likely to earn a recommendation.

A number of comments were received on the evaluation methodology and performance metrics:

Prioritize Social Equity: Social Equity is included as a specific evaluation criterion under Goal 4 "Promote Economic Vitality". However, social equity elements are embedded indirectly into the first three goals that have higher weightings.

VMT: The inclusion of Vehicle Miles Traveled (VMT) as part of the analysis was also inquired about. The concepts do not significantly alter the land use characteristics of each interchange or substantially increase vehicle capacity. While land use is being considered in the projected 2040 traffic volumes, the same land use assumptions were used for No Build and Build models, with the interchange improvements not fundamentally changing trip origins or destinations. More focus was placed on the traffic operation of each interchange itself, comprised of a small collection of ramp intersection and local intersections, compared to the overall network. For these reasons, there would be minimal difference in VMT between the 2040 Build and No Build scenarios and VMT is not directly considered in the analysis.

Include transit in Goal 4 "Promote Economic Vitality": Transit is considered directly under Goal 3 "Improve Multimodal Access to/from and across Highway 101.

Reduction in Delay as a criterion for reducing GHG: The performance measure was listed incorrectly and should have reflected "reduction in CO2 emissions", based on the delta of total gallons of fuel consumed during the AM/PM peak hours.

Other Items

- A number of comments supported prioritization of health and safety.
- A request was made to include geographic location within the evaluation results - i.e., by North, Central, or South county - with the objective of providing for an equitable distribution of improvements across the county.
- A further comment asked how feedback can be shared with staff. Draft reports and evaluation findings will be made available to the ExCom, jurisdictions, and the public, with provisions to provide input and feedback.

Appendix F

Evaluation Tables and Graphs

- Evaluation Goal 1 Rubric Summary
- Evaluation Goal 2 Rubric Summary
- Evaluation Goal 3 Rubric Summary
- Evaluation Goal 4 Rubric Summary
- Evaluation Goal 5 Rubric Summary
- Active Transportation and Transit Focus Sensitivity Graph
- Equity-focused Sensitivity Graph

Evaluation Summary

Goals & Objectives	Goal Weight (1-100% of Total)	Evaluation Criteria	Criteria Weight (1-100% of Goal)	Performance Measures	Measure Weight (1-100% of Criteria)
1. Enhance Health and Safety	23%	Improves safety for all modes	30%	Removes/improves nonstandard conditions that potentially contribute to incidence of collisions	60%
				Provides separation of active transportation modes	40%
		Enhances emergency response and evacuation	22%	Population served by interchange	60%
				Availability of alternative routes to Hwy 101	40%
		Promotes active transportation	30%	Improved pedestrian connectivity/ADA	80%
				Improved bicycle infrastructure and gap closure, level of comfort	20%
		Reduces greenhouse gas emissions and improves air quality	17%	Reduction in CO2 emissions	100%
2. Relieve Local Traffic Congestion	22%	Alleviates congestion and improves traffic flow for current and future traffic	100%	Person hours of delay	100%
3. Improve Multimodal Access to/from and across Highway 101	20%	Enhances connectivity and removes access barriers	100%	Improved connectivity for transit	30%
				Improved intermodal pedestrian connectivity and ADA access	30%
				Improved bicycle infrastructure and gap closure, level of comfort	40%
4. Promote Economic Vitality	15%	Accommodates future land use changes and growth	33%	Assessment of future operating conditions with forecast growth	100%
		Reduces transportation costs	33%	Cost of delay	100%
		Social equity	34%	Benefit to Equity Communities	100%
5. Implementability	20%	Attractiveness to funding sources	25%	Funding criteria/potential (removes barriers, improves safety, leveragability)	100%
		Ease of regulatory approval	25%	Ability to gain project approvals	100%
		Benefit to costs	50%	Delivers high benefit for project cost	100%

Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Improves safety for all modes	Removes/improves nonstandard conditions	Remedies or improves non-standard design features or operating conditions that potentially contribute to the incidence of collisions, with reference to existing collision data. Improved features (Per HDM): -Separated bike lanes or buffer bike lanes -6' sidewalk -12' travel lanes -Provide standard merge or improve existing merge distance -Ramp deceleration distance improved -Provide standard acceleration length or improve existing distance -ADA ramps -Tighten up curb return (slow vehicles down when making a turn movement) -Distance of crossing reduced with median refuge for pedestrians -Removal of pedestrian crossing at ramps to bus stops (or making pedestrian crossing more visible to drivers) (Utilize collision data and compare against existing and proposed features. Higher scoring will be based on higher overall potential to reduce the incidence of collisions.	1 (Low)	Improvements to existing non-standard conditions and/or operating deficiencies that have minimal potential to reduce the incidence of collisions.
			2 (Medium-Low)	Improvements to existing non-standard conditions and/or operating deficiencies that have minimal to moderate potential to reduce the incidence of collisions.
			3 (Medium)	Improvements to existing non-standard conditions and/or operating deficiences that have a moderate potential to reduce the incidence of collisions.
			4 (Medium-High)	Improvements to existing non-standard conditions and/or operating deficiences that have a moderate to high potential to reduce the incidence of collisions.
			5 (High)	Improvements to existing non-standard conditions and/or operating deficiencies have a high potential to reduce the incidence of collisions.
	Provides separation of active transportation modes	The proposed project provides extra safety benefits to the existing active transportation modes by separation compared to the existing interchange configuration. Projects that provide additional separation benefits to more than one mode (i.e, pedestrians and bicycles) will receive additional points. **Pedestrians Improvements Rubric:** (1) - No improvement to existing conditions (2) - Some improvements that provide separation of pedestrians from travel way - upgrading sidewalk width to 6' (3) - Improvements that provide separation of pedestrians from travel way and reduce conflict points with other modes (4) - (5) - Improvements that provide separated pathways, signalized and high visibility crossings throughout the interchange **Bicycles Improvements Rubric:** (1) - No change to existing bike facilities but provides safer intersection movements. No change in level of stress (2) - Improvement provides a new bicycle lane (to minimum standards) and provide safer bike movement through areas of existing conflict (3) - Improvement provides a new buffered bicycle lane (to minimum standards) and reduces areas of existing conflict. Medium change in level of stress (4) - Improvement provides a Class 1 facility that meets minimum standards (5) - Improvement provides a Separated bikeway on one of both sides of the interchange. High change in level of stress TAKE AVERAGE - MAXIMUM POINTS IS 5 THIS IS A COMPARISON TO EXISTING CONDITIONS AT THAT INTERCHANGE	1 (Low)	No improvements
			2 (Medium-Low)	Some improvements
			3 (Medium)	Moderate improvements
			4 (Medium-High)	Moderate to significant improvements
			5 (High)	Significant improvements

Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Enhances emergency response and evacuation	Population served by interchange	The proposed project occurs at an interchange that serves a high volume of daily vehicles, factored by percent reduction in Total AM/PM delay, compared to other interchange locations. Daily volumes calculated by total entry/exit of vehicles from the designated interchange study area.	1 (Low)	Project serves a low volume of traffic (<100 factored vehicles)
			2 (Medium-Low)	(100- <750 factored vehicles)
			3 (Medium)	Project serves a moderate volume of traffic (750 - <2,000 factored vehicles)
			4 (Medium-High)	(2,000 - <6,000 factored vehicles)
			5 (High)	Project serves a significant volume of traffic (6,000+ factored vehicles)
	Availability of alternative routes to Hwy 101	Considers the proposed project in context to its level of access and proximity to high capacity interchange and nearby frontage roads compared to other interchange locations. A high capacity interchange is defined to be a full interchange which has a crossing of 101 and serves all directions on 101 (NB off/on, SB off/on).	1 (Low)	High level of access and high proximity (within 0.5 miles) to a full interchange
			2 (Medium-Low)	Medium to high level of access and medium to high proximity (within 0.75 miles) to a full interchange
			3 (Medium)	Medium level of access and medium proximity (within 1 mile) to a full interchange
			4 (Medium-High)	Medium to low level of access and medium to low proximity (within 1.25 mile) to a full interchange
			5 (High)	Less level of access and low proximity to a full interchange (1.25+ mile or no access to an alternative route)
Promotes active transportation	Improved pedestrian connectivity/ADA compliance	The proposed project improves pedestrian connectivity by filling sidewalk gaps and adding ADA-compliant facilities compared to the existing interchange configuration. Projects that provide maximum separation from vehicles or that add sidewalks where none currently exist will be given additional points.	1 (Low)	No pedestrian improvements or improvement where 6' sidewalks exist and ADA compliance exists throughout the interchange
			2 (Medium-Low)	Some pedestrian improvements or improvements where 6' sidewalks exist and ADA compliance exists and is somewhat upgraded throughout the interchange
			3 (Medium)	Improvements that changes existing deficient sidewalks to 6' and provide ADA compliance throughout the interchange
			4 (Medium-High)	Improvements that changes existing deficient sidewalks to 6'+ and provide ADA compliance throughout the interchange with more connectivity
			5 (High)	Improvements that provide a new, ADA-compliant sidewalks or provides a separated pathway where a sidewalk currently exists, and where a sidewalk gap is filled
	Improved bicycle infrastructure and gap closure, level of comfort	The proposed project improves bicycle connectivity by filling gaps in the bicycle network or upgrading existing bicycle facilities to improve safety and level of stress compared to the existing interchange configuration. Additional points are awarded for facilities with the highest level of separation from vehicular traffic. The positive comparison of existing level of stress to the improved level of stress will allow for additional points. Level of stress depends on width and separation of bike lanes provided.	1 (Low)	No change to existing bike facilities but provides safer intersection movements. No improvement in level of stress.
			2 (Medium-Low)	Improvement provides a new bicycle lane (to minimum standards)
			3 (Medium)	Improvement provides a new buffered bicycle lane (to minimum standards). Medium improvement in level of stress.
			4 (Medium-High)	Improvement provides a Class 1 facility that meets minimum standards
			5 (High)	Improvement provides a Separated bikeway on one of both sides of the interchange. High improvement in level of stress.
Reduces greenhouse gas emissions and improves air quality	Reduction in CO_2 emissions	The proposed project reduces greenhouse gas emissions and improves air quality by modifying intersection and lane configurations to reduce vehicle congestion compared to other interchange locations. Absolute delta in greenhouse gas emissions calculated, following EPA guidelines, as reductions in kg CO_2 equivalents based on total gallons of fuel consumed during the AM/PM peak hours.	1 (Low)	No or minimal absolute reduction in CO_2 emissions (<20kg CO_2 reduction)
			2 (Medium-Low)	(20-<100 kg CO_2 reduction)
			3 (Medium)	Moderate absolute reduction in CO_2 emissions (100 - 200 kg CO_2 reduction)
			4 (Medium-High)	(200-<400kg CO_2 reduction)
			5 (High)	Significant absolute reduction in CO_2 emissions (400+ kg CO_2 reduction)

Goal 2. Relieve Local Traffic Congestion

Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Alleviates congestion and improves traffic flow for current and future traffic	Person hours of delay	The proposed project relieves congestion and improves traffic flow, by modifying intersection and lane configurations, to reduce total person hours of delay compared to other interchange locations. Delta in person hours of delay calculated as the total of AM/PM peak hour delay reductions.	1 (Low)	No or minimal absolute reduction in total person hours of delay (<15 hr reduction)
			2 (Medium-Low)	(15 - <30 hr reduction)
			3 (Medium)	Moderate absolute reduction in total person hours of delay (30 - <45 hr reduction)
			4 (Medium-High)	(45 - <60 hr reduction)
			5 (High)	Significant absolute reduction in total person hours of delay (60+ hr reduction)

Goal 3. Improve Multimodal Access to/ from and across Highway 101

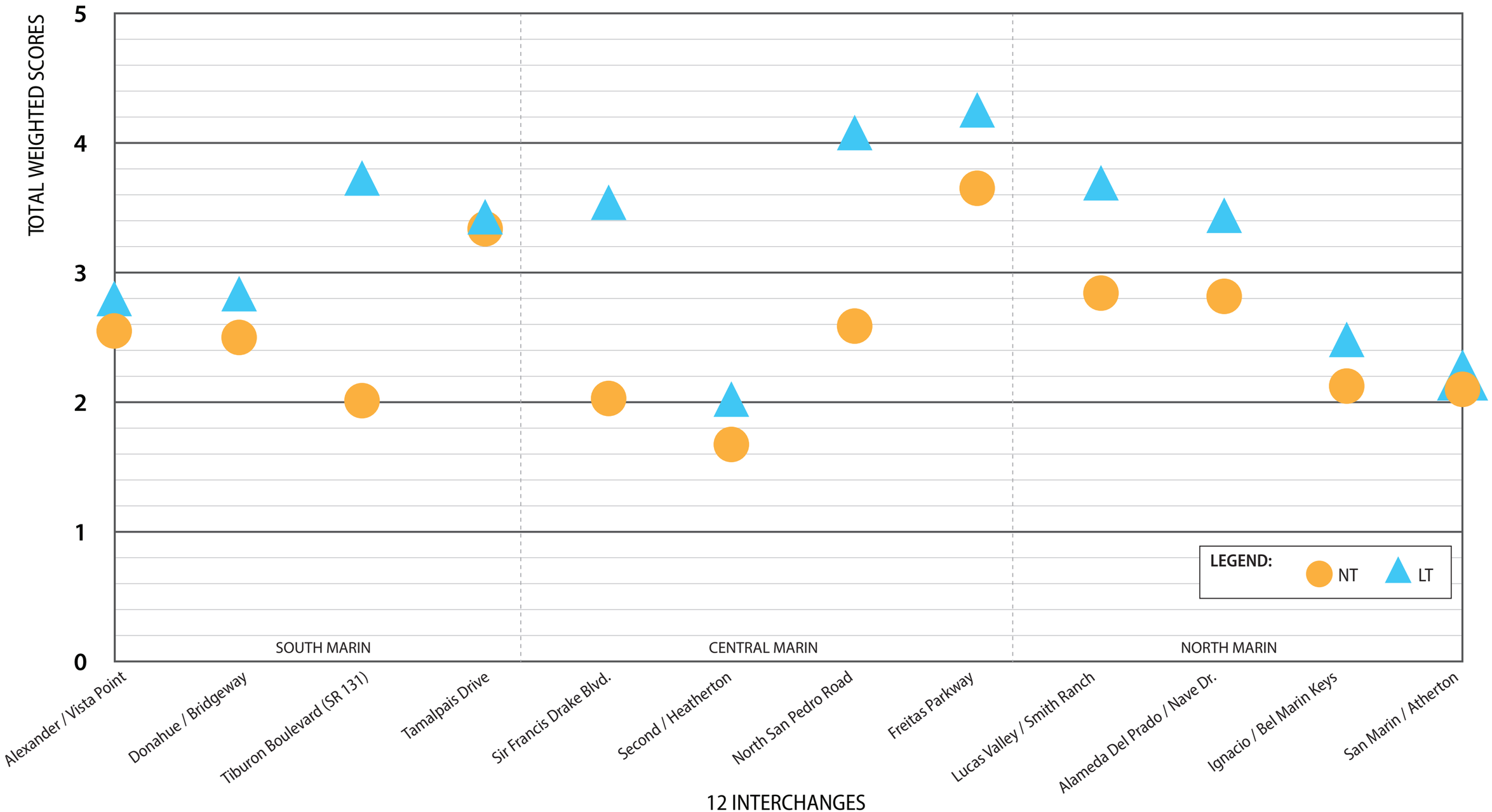
Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Enhances connectivity, access to jobs and removes access barriers	Improved connectivity for transit	The proposed project provides a positive impact by reducing regional travel time, making transfers more convenient for high ridership stops, and improving bus stop connectivity for regional and local connections compared to the existing interchange configuration. Ridership levels are compared across interchanges and are categorized as low, medium, and high.	1 (Low)	No improved bus stop relocation, retaining existing travel time, low ridership.
			2 (Medium-Low)	Some improvement to existing bus stop
			3 (Medium)	Bus stop relocation(s), impacted travel time, medium ridership.
			4 (Medium-High)	Bus stio relocations(s), impacted travel time, medium to high ridership
			5 (High)	Bus stop relocation(s), marginally impacted travel time, high ridership.
	Improved intermodal pedestrian connectivity and ADA access	The proposed project improves pedestrian intermodal connectivity by filling sidewalk gaps, adding ADA-compliant facilities, and removing crossing from ramps compared to the existing interchange configuration. Projects that remove multiple ramp crossings and improves pedestrian access to transit will be given additional points.	1 (Low)	No pedestrian improvements or where 6' sidewalks exist and ADA compliance exists throughout the interchange.
			2 (Medium-Low)	Some pedestrian improvements or improvements where 6' sidewalks exist and ADA compliance exists and is somewhat upgraded throught the interchange
			3 (Medium)	Improvements that upgrade existing deficient sidewalks to 6', provide ADA compliance throughout the interchange, and remove some ramp crossings.
			4 (Medium-High)	Improvements that change existing deficient sidewalk to 6"+ and provide ADA compliance throughout the interchange with more connectivity
			5 (High)	Improvements that provide a new, ADA-compliant sidewalks or provides a separated pathway where a sidewalk currently exists, fills a sidewalk gap, and removes all crossings from ramps.
	Improved bicycle infrastructure and gap closure, level of comfort	The proposed project improves bicycle connectivity by filling gaps in the bicycle network or upgrading existing bicycle facilities to improve level of stress compared to the existing interchange configuration. Additional points are awarded for facilities with the highest level of separation from vehicular traffic. As well the positive comparison of existing level of stress to the improved level of stress will allow for additional points. Level of stress depends on width and separation of bike lanes provided. **Caltrans Std Bike Lanes Minimum Dimensions:** Minimum Bike Lane: 4' Minimum Buffered Bike Lane: 2', 5'	1 (Low)	No change to existing bike facilities but provides safer intersection movements. No change in level of stress.
			2 (Medium-Low)	Improvement provides a new bicycle lane (to minimum standards).
			3 (Medium)	Improvement provides a new buffered bicycle lane (to minimum standards). Medium change in level of stress.
			4 (Medium-High)	Improvement provides a Class 1 facility that meets minimum standards.
			5 (High)	Improvement provides a Separated bikeway on one of both sides of the interchange. High changes in level of stress.

Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Accommodates future land use changes and growth	Assessment of future operating conditions with forecast growth	The proposed project accommodates future land use change and growth by reducing delay of forecasted vehicular traffic compared to the no-build baseline interchange configuration, through the modification of intersections and lane configurations. Additional points will be given for improvements near Priority Development Areas (PDA).	1 (Low)	No or minimal percent reduction in total person hours of delay compared to existing conditions (<10% reduction). Project is not near a PDA community.
			2 (Medium-Low)	Moderate percent reduction in total person hours of delay compared to existing conditions (10- <20% reduction). Project not near PDA community.
			3 (Medium)	Significant percent reduction in total person hours of delay compared to existing conditions (20+% reduction). Project is not near PDA community.
			4 (Medium-High)	Moderate percent reduction in total person hours of delay compared to existing conditions (<20% reduction). Project is near a PDA community.
			5 (High)	Significant percent reduction in total person hours of delay compared to existing conditions (20+% reduction). Project near a PDA community.
Reduces transportation costs	Cost of delay	The proposed project reduces transportation costs by providing improvements that reduce total travel time during the AM and PM peak hours compared to the existing interchange configurations. The cost reduction could be estimated by multiplying the travel time savings by the number of vehicles and a value of time - taken as 50% of the average hourly wage in Marin County, though the percent reduction will not change based on factors applied uniformly.	1 (Low)	No or minimal percent reduction in total vehicle travel time cost (<2.5% reduction)
			2 (Medium-Low)	(2.5 - <7.5% reduction)
			3 (Medium)	Moderate percent reduction in total vehicle travel time cost (7.5- <15% reduction)
			4 (Medium-High)	(15 - <25% reduction)
			5 (High)	Significant percent reduction in total vehicle travel time cost (25+% reduction)
Social equity	Benefit to Equity Communities	Higher scoring for relative incidence (presence of equity communities within the interchange vicinity) with improved mobility options. Assumptions that related to scoring are described below: • It was generally assumed that there would be no disproportionately high and adverse impacts to Equity Communities. No residences or businesses would be displaced under any near- or long-term improvements. However, this assumption would need to be formally evaluated as project design progresses. • If no Equity Communities were present, the proposed improvements were scored as having the lowest potential benefit to these communities. • Improvements that included multiple alternative modes of transportation scored higher. For example, improvements that only involved bike facilities scored lower than improvements that included bicycle, pedestrian, and transit improvements. In addition, the scope of the improvements were considered. For example, relocating one ramp transit stop under a near-term improvement would score lower than relocating multiple transit stops from ramps under the long-term improvement. • The locations of proposed improvements also played a role. If improvements were centered within Environmental Justice Census tracts, they scored higher than improvements largely focused within non-Environmental Justice Census tracts. • If a Metropolitan Transportation Commission (MTC) Equity Priority Community (EPC) was identified within the project area, the metric scored higher as compared to improvement without an EPC. MTC's definition includes additional equity communities that would benefit from near- and long-term improvements (seniors, disabled persons, etc.).	1 (Low)	Interchange is not within proximity to equity communities
			2 (Medium-Low)	Presence of equity communities within interchange vicinity minor improvements to alternative modes of transportation
			3 (Medium)	Presence of equity communities within interchange vicinity with limited improvements to alternative modes of transportation (eg. only improvements to bike facilities).
			4 (Medium-High)	Presence of equity communities within interchange vicinity with limited improvements to multiple alternative modes of transportation
			5 (High)	Presence of equity communities within interchange vicinity and improvements to multiple modes of transportation (eg. bike, pedestrian, transit).

Evaluation Criteria	Performance Measures	Definition	Scoring (1-5)	Rubric (Scoring Guidelines)
Attractiveness to funding sources	Funding criteria/potential (removes barriers, improves safety, leveragability)	Higher scoring for projects that meet funding criteria/appear competitive to likely funding sources or could be substantially funded by multiple sources, including: Measure AA - Funding criteria/categories include: reduce traffic congestion, improve pedestrian/bike infrastructure, remove barriers to mobility, and expand transit service RAISE - Criteria include: safety, environmental sustainability, quality of life, economic competitiveness, state of good repair, innovation, and partnership, with prioritization for projects that can demonstrate improvements to racial equity, reduce impacts of climate change and create good-paying jobs. SB1 "Fix it First" - Funds various programs (ATP, SCCP, SHOPP, STIP) that promote: reduced traffic delays, efficient movement of goods, safe active transportation facilities, reduced climate impact, improved equity of access.	1 (Low)	Project improvements have low potential for funding
			2 (Medium-Low)	Project improvements have low moderate potential for funding
			3 (Medium)	Project improvements have moderate potential for funding (meet funding criteria/appear competitive for one or more potential funding sources)
			4 (Medium-High)	Project improvements have moderate to high potential for funding (meet funding criteria/appear competitive for one or more potential funding sources)
			5 (High)	Project improvements have high potential for funding (meet funding criteria/appear competitive for several potential funding sources)

Ease of regulatory approval	Ability to gain project approvals	Higher scoring for projects that involve a less complex project development process, limited right-of-way and/or permitting needs (qualitative)
		
		Project Development: Can the project be implemented by a local jurisdiction or combined with another planned project, as opposed to the formal Caltrans project development process (PID, PA/ED, PS&E)
		
		Ease of Regulatory Approvals (Environmental)
		- Impacts to known (or undiscovered) buried cultural resources
		- Risk of encountering hazardous waste contamination in groundwater.
		- Impact to biological resources, including special-status species and waterways (streams, wetlands, etc.).
		- Susceptibility to Sea level rise (SLR)
		- Jurisdictional Permitting:
		  - Section 4(f) impacts
		  - Location within the San Francisco Bay Conservation and Development Commission's (BCDC) jurisdiction.
			1 (Low)	Interchange improvements are complex and require implementation through Caltrans Project Development process (ie. bridge replacement, highway/ramp improvements, right of way or environmental impacts).

			2 (Medium-Low)	Interchange improvements that can be implemented by local jurisdiction or can be included with another planned project; some potential for some right of way and environmental impacts but require Caltrans support
			3 (Medium)	Interchange improvements that can be implemented by local jurisdiction or can be included with another planned project; some potential for some right of way and environmental impacts.
			4 (Medium-High)	Interchange improvements that can be implemented by local jurisdiction or can be included with another planned project; with either minimal potential for right of way or minimal environmental impacts.
			5 (High)	Interchange improvements that can be implemented by local jurisdiction or can be included with another planned project; minimal right of way or environmental impacts.
Cost Effectiveness	Delivers high benefit to cost ratio	Overall project benefit as evaluated against goals compared to project cost. Ratio of weighted goal score to project cost. Projects are evaluated against each other to determined the scale of low to high benefit/cost ratios.	1 (Low)	Low benefit to cost ratio, weighted subtotal score divided by cost in Millions of dollars (<0.02)
			2 (Medium-Low)	(0.02 - <0.075)
			3 (Medium)	Moderate benefit to cost ratio (0.075 - <0.1)
			4 (Medium-High)	(0.1 - <0.25)
			5 (High)	High benefit to cost ratio (0.25+)

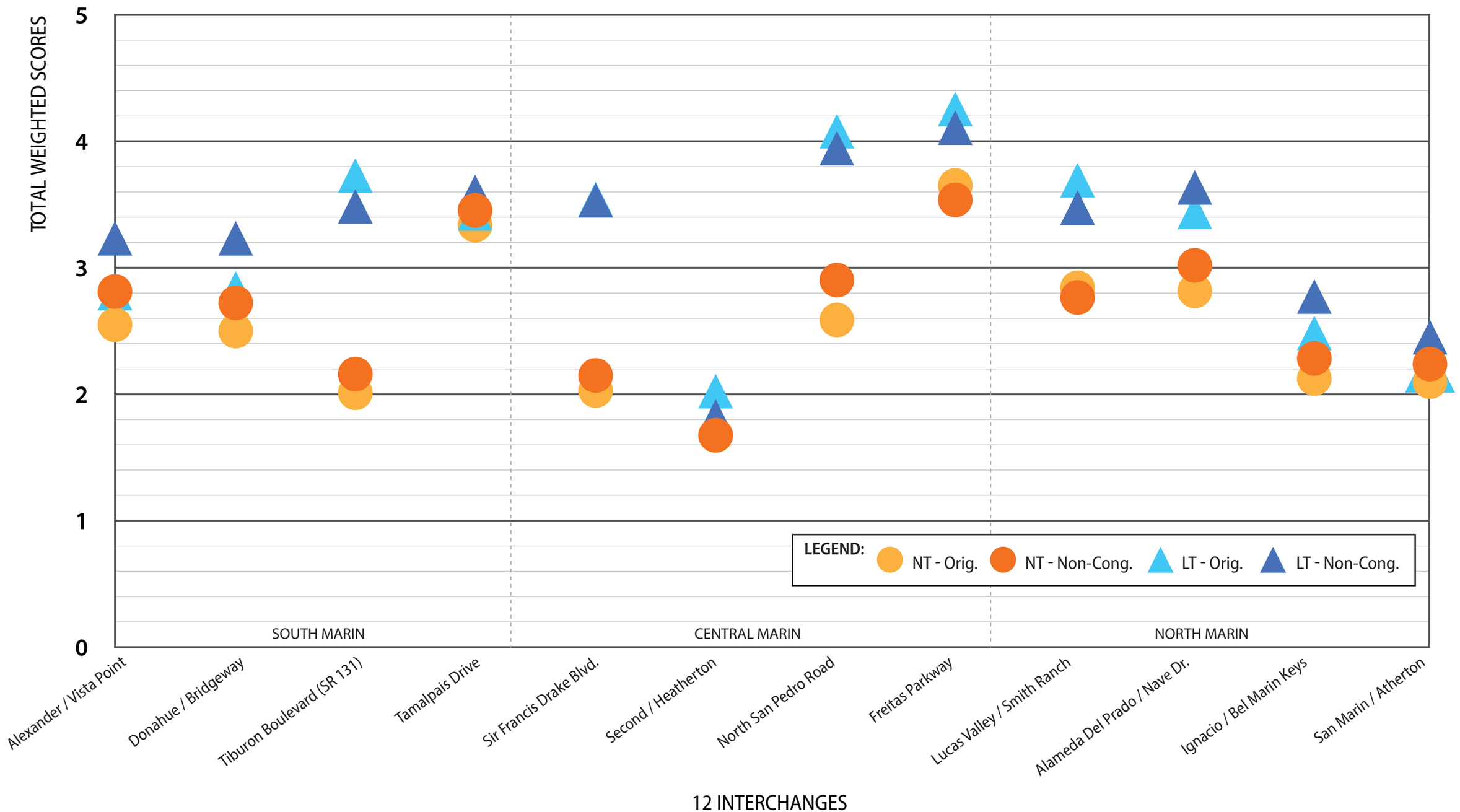


Total Weighted Scores

Highway 101 Interchange & Approaching Roadways Study

DRAFT

Transportation Authority of Marin



Total Weighted Scores Comparison: Original vs Non-Congestion Focus

Highway 101 Interchange & Approaching Roadways Study

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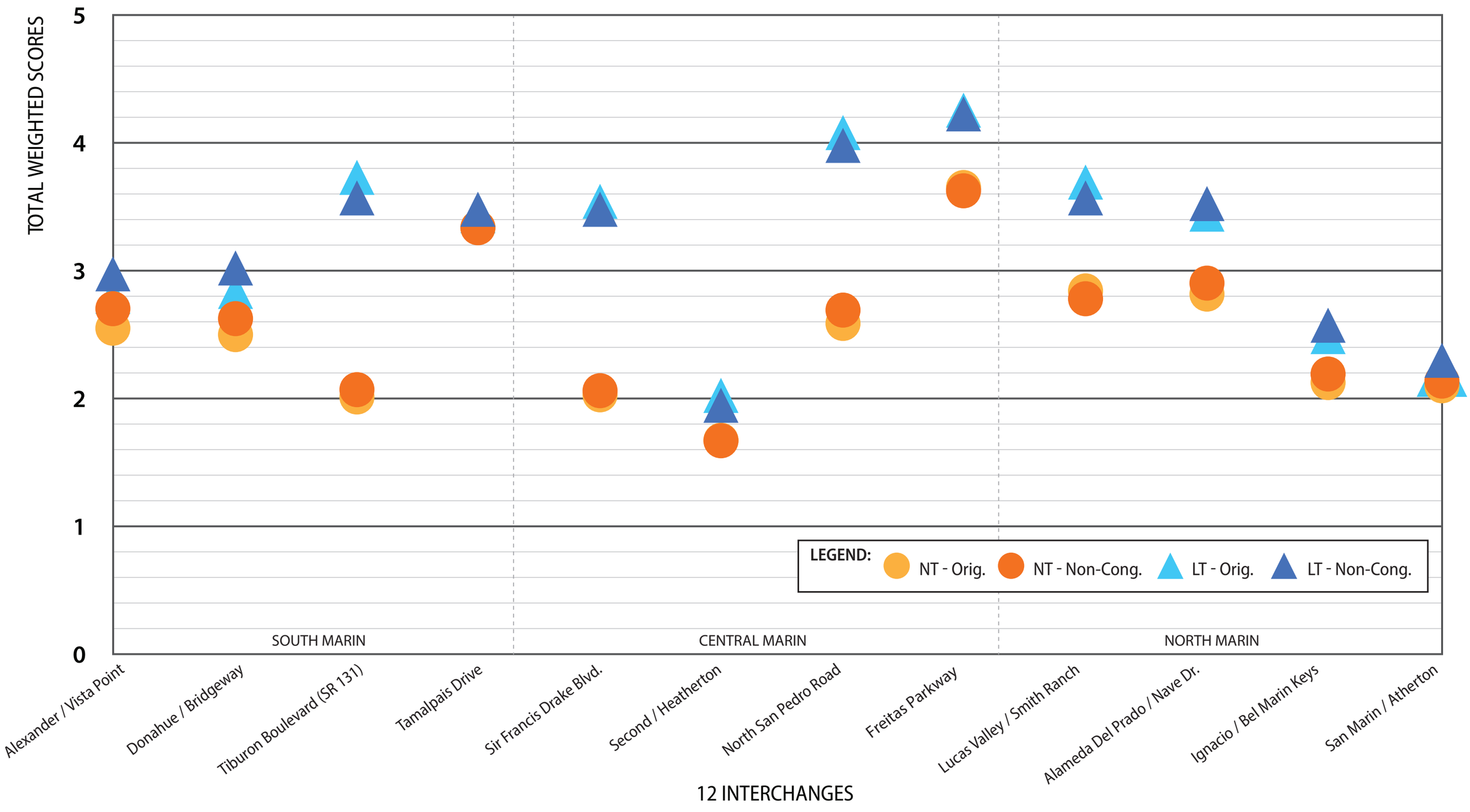
Transportation Authority of Marin



Total Weighted Scores Comparison: Original vs Equity Focus

Highway 101 Interchange & Approaching Roadways Study

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TAM Transportation Authority of Marin

Appendix G

Funding Outlook Table

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
Low Carbon Transit Operations Program (LCTOP)	California	Formula	Caltrans	Transportation planning agencies, transit operators	Transit-related greenhouse gas emissions reductions that improve mobility	Construction, operations, maintenance	N/A	Formula	Formula	50%	2020	Formula	Formula	Formula	Annual calls	2022	Start project within 6 months	-Enhance or expand transit OR -Increase operations OR -Purchase zero-emission infrastructure
Highway Safety Improvement Program (HSIP)	California	Competitive	Caltrans	Public agencies	Safety improvements to roadways. must have completed their Local Roadway Safety Plan (LRSP) or an equivalent of the LRSP, such as Systemic Safety Analysis Report (SSAR) or Vision Zero Action Plan.	Engineering, ROW, Construction	N/A	$0.10	$10	Based on Benefit-Cost Analysis	2021	$0.10	$8.80	$0.80	Every other year	2022	Complete project within 3 years	-Reduced crashes -Safety countermeasures
Office of Traffic Safety Grants (OTS)	California	Competitive	California Office of Traffic Safety	Public entities	Improvements to road safety, including pedestrian and bicycle safety	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Annual calls	2022	Start project within 6 months	N/A
Solutions for Congested Corridors Program (SCCP)	California	Competitive	California Transportation Commission	Regional transportation planning agencies and Caltrans	Congestion management projects in highly traveled corridors that are included in an approved Comprehensive Multimodal Corridor Plan	Construction	$500	None	None	None	2020	$25	$150	$71	Biennial calls	2022/23-2024/25	Start construction within 2 years; complete project according to submitted schedule	-Safety -Congestion -Accessibility -Economic development -Air pollution and greenhouse gas emission reductions -Efficient land use -Level of matching funds -Timely project completion
Sustainable Transportation Equity Project (STEP)	California	Competitive	Strategic Growth Council	Public agencies and non-profits	Improvements that address community transportation needs	Planning and construction, with majority of funds for construction	$19.50	None	None	None	NA	NA	NA	NA	TBD	TBD	N/A	-Located in state priority population -Consistent with existing plans -Workforce development -Displacement avoidance -Affordable housing and land use
Transit and Intercity Rail Capital Program (TIRCP)	California	Competitive	California State Transportation Agency (CalSTA)	Transit operators	Rail and transit improvements that decrease GHG emissions	Planning, environmental, design, ROW, construction, operations, maintenance	$500	None	None	None	2020	$1	$107	$29	Biennial calls	2022/23-2026/27	Complete preconstruction within 2 years; complete construction according to project schedule	-Reduce GHGs -Increase transit ridership -Integrate rail service -Improve transit safety
Strategic Partnerships	Caltrans	Competitive	Caltrans	Metropolitan Planning Organizations, Regional Transportation Planning Agencies	Transportation planning studies in partnership with Caltrans that address the regional, interregional and statewide needs of the State highway system	Planning	$1.50	$0.10	$0.50	20%	2021	$0.40	$0.50	$0.50	Annual calls	2022	N/A	-Support the economic vitality -Increase safety -Increase security -Increase accessibility and mobility of people and freight -Protect and enhance the environment -Promote energy conservation -Improve the quality of life -Promote consistency between transportation improvements and planned growth -Enhance the integration and connectivity of the transportation system -Promote efficient system management and operation -Emphasize the preservation of the existing transportation system -Improve the resiliency and reliability of the transportation system -Reduce or mitigate stormwater impacts of surface transportation -Enhance travel and tourism
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Distributed through OBAG			Distributed through	Projects must meet all program requirements of OBAG 3, not just CMAQ requirements. Eligible project categories include: Transportation Control Measures (TCMS) in an approved State Implementation Plan (SIP), transit expansion projects, transit vehicles and equipment, bicycle and pedestrian facilities and programs, travel demand management, public education and outreach activities, congestion reduction and traffic flow improvements, carpool, vanpool, and carshare programs, travel demand management, outreach and rideshare activities, telecommuting programs, and intermodal freight projects		Distributed through OBAG			11.47%	Distributed through OBAG				Distributed through OBAG			- Transportation projects that generate emissions reductions that benefit a nonattainment or maintenance for ozone, carbon monoxide, or particulate matter
Surface Transportation Block Grant Program	Distributed through OBAG			Distributed through	Projects must meet all program requirements of OBAG 3, not just STBG requirements. STBG Eligible projects include roadway and bridge improvements (construction, reconstruction, rehabilitation, resurfacing, restoration), public transit capital improvements, pedestrian and bicycle facilities and programs, highway and transit safety projects, transportation demand management, and transportation planning activities.		Distributed through OBAG			11.47%	Distributed through OBAG				Distributed through OBAG			Distributed through OBAG
Rebuilding American Infrastructure with Sustainability and Equity-Capital Awards (RAISE)	Federal	Competitive	U.S. Department of Transportation	Public agencies	Surface transportation projects	Construction	$1,000	$5	$25	20%	2021	$6.50	$24	$11	Annual calls	2022	Expended within eight years	-Safety -Environmental sustainability -Quality of life -Economic competitiveness -State of good repair
Infrastructure for Rebuilding America (INFRA)	Federal	Competitive	U.S. Department of Transportation	Public agencies	Improvements to freight system	ROW, construction	$889	Sub-program	Sub-program	40%	2021	$5	$92	$37	Annual calls	2022	In alignment with submitted schedule	-Support the economic vitality -Climate change and environmental justice impacts -Racial equity and barriers to opportunity -Leveraging funding -Potential for innovation -Performance and accountability

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
Lifeline Transportation Program	Local	Formula	Transportation Authority of Marin	Transit Operators that are FTA grantees	New and existing services. Eligible job access and reverse commute projects must provide for the development or maintenance of eligible job access and reverse commute services. Recipients may not reclassify existing public transportation services that have not received funding under the former Section 5316 program as job access and reverse commute services in order to qualify for operating assistance. In order to be eligible as a job access and reverse commute project, a proposed project must qualify as either a “development project” or a “maintenance project”. Capital and Operating projects. Projects that comply with the requirements above may include, but are not limited to: -Late-night & weekend service; - Guaranteed ride home service; - Shuttle service; - Expanding fixed route public transit routes, including hours of service or coverage; - Demand-responsive van service; - Ridesharing and carpooling activities; - Transit-related aspects of bicycling; - Administration and expenses for voucher programs; - Local car loan programs; - Intelligent Transportation Systems (ITS); - Marketing; and - Mobility management.							FY2018-19 through FY2019-20	$12,674	$1,647,290	$355,056				-Prioritizes projects identified in community-based transportation plan - Funding for FTA Section 5307 is apportioned to urbanized areas. The Cycle 6 distribution assigns funding to transit operators first on urbanized area eligibility, and then based on a 50/50 distribution formula of: (1) Fifty percent (50%) low-income ridership estimates. A transit agency’s estimated low-income ridership is calculated by the transit agency’s total ridership (FTA National Transit Data, 2018) multiplied by the percent of ridership that is lowincome (from the 2012-2017 MTC On-Board Transit Passenger Demographic Surveys). (2) Fifty percent (50%) Community of Concern (CoC) population shares. Total population for transit service area (FTA National Transit Data, 2018) and percent of full transit service area that is within a Community of Concern (MTC Resolution No. 4217, 2012-2016 ACS, 5-year tract level data. MTC will assign funds to eligible projects to transit operators.
One Bay Area Grant Program (OBAG) 3	County and Local	Competitive, programmatic	Metropolitan Transportation Commission	Public agencies	Wide range of project types including bicycle and pedestrian improvements and projects in Priority Development Areas (PDAs). RTP consistency and air quality conformity required.	Sub-program	$375 million	0.25	Sub-program	Sub-program	Sub-program	Sub-program	Sub-program	Sub-program	Every 5 years	2022/23-2026/27	Sub-program	- Screening of all projects for consistency with Plan Bay Area 2050, federal fund eligibility, and OBAG 3 programming policy requirements. • Alignment with Plan Bay Area 2050 strategies and federal performance management targets. • Consistency with adopted regional plans and policies, such as Regional Safety/Vision Zero policy, Equity Platform, Regional Active Transportation Plan (AT Plan), Complete Streets Policy (update pending), Transit Oriented Communities (TOC) Policy (update pending), and priority actions from the Blue Ribbon Transit Transformation Action Plan. • Projects located within PDAs, or select new growth geographies, and EPCs. • Projects identified in completed CBTPs or PBs • Project deliverability within program deadlines. • Emissions reductions benefit and cost effectiveness calculation (for projects eligible for CMAQ).
Transportation Funds for Clean Air (TFCA)	County		BAAQMD	Public agencies within BAAQMD	1. The implementation of ridesharing programs; 2. The purchase or lease of clean fuel buses for school districts and transit operators; 3. The provision of local feeder bus or shuttle service to rail and ferry stations and to airports; 4. Implementation and maintenance of local arterial traffic management, including, but not limited to, signal timing, transit signal preemption, bus stop relocation and "smart streets”; 5. Implementation of rail-bus integration and regional transit information systems; 6. Implementation of demonstration projects in telecommuting and in congestion pricing of highways, bridges, and public transit; 7. Implementation of vehicle-based projects to reduce mobile source emissions, including, but not limited to, engine repowers, engine retrofits, fleet modernization, alternative fuels, and advanced technology demonstrations; 8. Implementation of a smoking vehicles program; 9. Implementation of an automobile buy-back scrappage program operated by a governmental agency; 10. Implementation of bicycle facility improvement projects that are included in an adopted countywide bicycle plan or congestion management program; and 11. The design and construction by local public agencies of physical improvements that support development projects and that achieve motor vehicle emission reductions. The projects and the physical improvements shall be identified in an approved area-specific plan, redevelopment plan, general plan, or other similar plan.		~$8.8 million	0.001					Annual calls, late winter-spring	FYE 2022-2023	Within 2 years	- Cost effectiveness - Readiness Additional info: https://www.baaqmd.gov/~/media/files/strategic-incentives/tfca/fye-2023-tfca-county-program-manager-guidance_clean-pdf.pdf?la=en
Active Transportation Program	Regional	Competitive	Metropolitan Transportation Commission	Public agencies	Infrastructure projects that improve biking and walking; non-infrastructure projects that promote walking and bicycling; active transportation plan development	Planning, environmental, design, ROW, construction	$37	None	None	11.47%	2021	$1.00	$12	$4.50	Every 4 years	2023/24 through 2026/27	Complete project within 3 years	-Need

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
One Bay Area Grant Program (OBAG) 3	Regional	Competitive; programmatic	Metropolitan Transportation Commission	Public agencies	RTP consistency and air quality conformity. Projects include: - Climate Initiatives - Transformational Transit Action Plan near-term investments - Near-term multimodal operational improvements, such as Bay Bridge Forward - Priority Development Areas (PDAs), Priority Conservation Areas (PCAs), and other new growth geographies planning and implementation - Complete Streets Policy and Regional Active Transportation Plan - Regional Safety/Vision Zero Policy - Pavement Management Program	Planning, environmental, design, ROW, construction, operations, maintenance	$375 million	Sub-program	Sub-program	Sub-program	NA	Sub-program	Sub-program	Sub-program	Every 5 years	2022/23-2026/27	Sub-program	Sub-program
Transit Capital Priorities	Regional	Competitive	Metropolitan Transportation Commission	Public agencies	Transit network improvements	Construction	$1,600	None	None	20.00%	2021	NA	NA	NA	Every 5 years	2025	Use funds within 5 years	
Transportation Funds for Clean Air (TFCA)	Regional	Competitive	Bay Area Air Quality Management District	Public agencies and non-public entities	Projects that result in the reduction of motor vehicle emissions	Planning, environmental, design, ROW, construction	$13	$0.01	$5.50	10%	2021	N/A	N/A	N/A	Annual calls	2022	Complete project within 2 years	-TFCA cost-effectiveness -Consistency with existing plans and programs -Located in Highly Impacted Communities or Priority Development Areas
State Transportation Improvement Program (STIP)	Regional	Formula	Metropolitan Transportation Commission	Public agencies	Transportation improvements included Regional Transportation Improvement Program	Planning, environmental, design, ROW, construction	NA	NA	NA	11.47%	NA	NA	NA	NA	Programmed every 2 years	2022	Complete project within 3 years	NA
Regional Measure 3 (RM3) - San Francisco Bay Trail / Safe Routes to Transit (SR2T)	Regional	Competitive	Bike East Bay and Transform		Under RM2, SR2T projects must provide connections to regional transit that reduces traffic across SF Bay Area bridges.		$150 million (SR2T)				2014 (SR2T)	0.1 (SR2T)	0.75 (SR2T)	0.35 (SR2T)				Previous cycle of Safe Routes to Transit were from RM2. No information available online with regards to grant program under RM3. Under RM2, SR2T projects are given higher priority if they provide benefits to low-income and minority households and incorporate innovative design features that can be replicated regionally.
Transportation Development Act Article 3 (TDA 3)	Regional	Competitive	Metropolitan Transportation Commission	Public agencies	bicycle and pedestrian projects	Planning					2022	NA	NA	NA	Annual calls	2022	NA	Distributed through VTA
Active Transportation Program	State	Competitive	Caltrans, California Transportation Commission	Public agencies	Small, medium and large infrastructure projects that improve walking and biking; non-infrastructure projects that promote walking and bicycling; active transportation plan development	Planning, environmental, design, ROW, construction	$440	$0.25	None	None	2021	N/A	N/A	N/A	Every 4 years	2022	Complete project within 3 years	-Need
Affordable Housing and Sustainable Communities Program (AHSC)	State	Competitive	Strategic Growth Council, California Department of Housing and Community Development	Public agencies and real estate developers	Transit and housing improvements that support infill development	Construction; 50% of funds for affordable housing; operations and maintenance may by covered if there is expanded transit service	$405	$1	$30	Based on AHSC formula	2020	$8	$30	$21	Annual calls	2022/23	None	-GHG reductions -Active transportation improvements -Green buildings and renewable energy -Housing and transportation collaboration
Local Partnership Program (LPP)	State	Competitive	California Transportation Commission	Agencies with voter-approved taxes, tolls, or fees	Transportation improvements	Construction	$200	$5	$25	25%	2020	Sub-program	Sub-program	Sub-program	Biennial calls	2022/23-2024/25	Complete project within 3 years	-Cost effectiveness -Deliverability -Leveraged funding -GHG and air quality -VMT reduction -Regional/community support -Safety -System preservation -Regional/local transportation/land use/housing goals
Local Partnership Program (LPP)	State	Formula	California Transportation Commission	Jurisdictions with voter approved transportation taxes, tolls, and fees	Transportation improvements in jurisdictions with voter approved taxes, tolls, or fees, which are dedicated solely to transportation improvements	Planning, environmental, design, ROW, construction	$108	Formula	Formula	100%	2020	Formula	Formula	Formula	Biennial calls	2022/23-2024/25	Complete project within 3 years	NA
Trade Corridor Enhancement Program	State	Competitive	California Transportation Commission	Public agencies	Congested freight corridor improvements	planning, environmental, design, ROW, construction	$1,000	None	None	30%	2020	$1	$217	$27	Calls every 3 years	2022	Complete project within 3 years	-Throughput -Velocity -Reliability -Safety -Congestion -Bottleneck relief -Multi-modal strategy -Interregional benefits -Advanced technology -Air quality -Community impact mitigation -Economic growth

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
Strategic Partnerships-Transit	State	Competitive	Caltrans	Metropolitan Planning Organizations, Regional Transportation Planning Agencies	Multi-modal planning studies, with a focus on transit, in partnership with Caltrans, of regional, interregional and statewide significance	Planning	$3.00	$0.10	$0.50	11%	2021	$0.30	$0.50	$0.40	Annual calls	2022	N/A	-Support the economic vitality -Increase safety -Increase security -Increase accessibility and mobility of people and freight -Protect and enhance the environment -Promote energy conservation -Improve the quality of life -Promote consistency between transportation improvements and planned growth -Enhance the integration and connectivity of the transportation system -Promote efficient system management and operation -Emphasize the preservation of the existing transportation system -Improve the resiliency and reliability of the transportation system -Reduce or mitigate stormwater impacts of surface transportation -Enhance travel and tourism
Sustainable Communities Grant	State	Competitive	Caltrans	Public agencies	Multimodal transportation and land use planning projects that further the region's RTP SCS and GHG reductions	Planning	$17	$0.10	$0.70	11.47%	2021	$0.10	$0.70	$0.40	Annual calls	2022	N/A	-Encourage local and regional multimodal transportation and land use planning that furthers the region's RTP SCS -Contribute to the State's GHG reduction targets and other State goals -Address the needs of disadvantaged communities -Assist in achieving the Caltrans Mission and Grant Program Objectives
Sustainable Communities Grant	State	Formula	Caltrans	Metropolitan Planning Organizations	Multimodal transportation and land use planning projects that further the region's RTP SCS and GHG reductions	Planning	$12.50	NA	NA	11.47%	2021	NA	NA	NA	Annual calls	2022	N/A	-Encourage local and regional multimodal transportation and land use planning that furthers the region's RTP SCS -Contribute to the State's GHG reduction targets and other State goals -Address the needs of disadvantaged communities -Assist in achieving the Caltrans Mission and Grant Program Objectives
Sustainable Transportation Planning (STP)	State	Formula	Caltrans	Public agencies	Disadvantaged Community; mode-shift; trail master plans and feasibility studies	Planning	34	100k	700k		2022			NA	Annual calls	Fall 2022	NA	
Section 11404 Congestion Relief (IIJA)	Federal	Competitive		MPO or local government	Planning, design, implementation, and construction activities to achieve the program goals, including: o deployment and operation of integrated congestion management systems, systems that implement or enforce HOV toll lanes or pricing strategies, or mobility services; and o incentive programs that encourage carpooling, nonhighway travel during peak periods, or travel during nonpeak periods.	Planning, design, implementation, and construction	$50 million	10		20%	N/A				Annual			- urban areas with high degree of recurrent congestion • Improve intermodal integration with highways; • Reduce or shift highway users to off-peak travel times or to non-highway travel modes during F38peak travel times; and/or • Manage congestion through the pricing of: o Parking; o Use of roadways, including in designated geographic zones; or o Congestion
Stopping threats on pedestrians (Sec. 11502 of IIJA)	Federal			DOT and local governments	Eligible projects are "bollard installation projects," which install raised concrete or metal posts on a sidewalk adjacent to a roadway that are designed to slow or stop a motor vehicle.		$25 million			0%						2022-2026		
Safe Streets and Roads for All Grant Program (Sec. 24112 of IIJA)	Federal			MPO or local government	Eligible projects are those to develop a comprehensive safety action plan; to conduct planning, design, and development activities for projects and strategies identified in a comprehensive safety action plan; or to carry out projects and strategies identified in a comprehensive safety action plan.		$1 billion			20%						2022-2026		
Innovative Technology to Enhance Arterials (IDEA)	Federal	Metropolitan Transportation Commission		Public agencies	Support the core goals: 1) Improve travel time and travel time reliability along arterials for autos and transit vehicles; 2) Improve safety of motorists, transit riders, bicyclists, and pedestrians; 3) Decreasing motor vehicle emissions and fuel consumption; and 4) Improve knowledge of and proficiency in the use of advanced technologies for arterial operations.						2018	0.276	2.3	0.722				• Project Concept (25 points) - Clarity of project or project concept, i.e., deployment project or project concept addresses demonstrated needs - Plan utilizes innovative technologies in an appropriate fashion (for Category 2 projects) • Implementation (30 points) - Ability to implement project within two to three years upon receipt of grant funding - Commitment of specific and sufficient staff - Demonstrated project management capacity - Demonstration of support from relevant stakeholders, partners or decision-makers • Project Impact (30 points) - Potential to reduce GHG and other types of emissions (this could be through mode shift, decreased travel time, reduced vehicle idling/braking, reduced VMT, etc.) - Potential to provide regional or corridor-level benefits - Potential to provide benefits to a large number of users (outreach area) • Match (10-15 points) - 10 points will be given for meeting minimum match requirements (cash and in-kind) - Up to 5 additional points will be given for any match over the minimum

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
Active Transportation Infrastructure Investment Program (Section 11529 of IIJA)	Federal				Active transportation investments to provide safe and connected active transportation facilities in an active transportation network or active transportation spine		500 million			0-20								(1) Likelihood of providing substantial additional opportunities for walking and bicycling, including effective plans to create an active transportation network connecting destinations within or between communities, including schools, workplaces, residences, businesses, recreation areas, and other community areas, or create an active transportation spine connecting two or more communities, metropolitan regions, or States; and to integrate active transportation facilities with transit services. (2) Whether the eligible organization demonstrates broad community support through the use of public input in the development of transportation plans; and the commitment of community leaders to the success and timely implementation. (3) Whether the eligible organization provides evidence of commitment to traffic safety, regulations, financial incentives, or community design policies that facilitate significant increases in walking and bicycling. (4) The extent to which the eligible organization demonstrates commitment of State, local, or eligible Federal matching funds, and land or in-kind contributions, in addition to the local match required (5) The extent to which the eligible organization demonstrates that the grant will address existing disparities in bicyclist and pedestrian fatality rates based on race or income level or provide access to jobs and services for low-income communities and disadvantaged communities. (6) Whether the eligible organization demonstrates how investment in active transportation will advance safety for pedestrians and cyclists, accessibility to jobs and key destinations, economic competitiveness, environmental protection, and quality of life.
State of Good Repair Grants Program	Federal	Formula	FTA	Transit agencies	Capital projects that maintain a fixed guideway or a high intensity motorbus system in a state of good repair, including projects to replace and rehabilitate: - rolling stock -track -line equipment and structures signals and communications power equipment and substations -passenger stations and terminals -security equipment and systems -maintenance facilities and equipment -operational support equipment, including computer hardware and software; -as well as implement transit asset management plans.					20%								
MTC Lifeline Program					Projects which are developed through a collaborative process between public agencies, transit operators, community-based organizations, and other community stakeholders, including outreach to under-represented stakeholders. Lifeline funds are earmarked for projects that address transportation gaps and/or barriers identified through a Community-Based Transportation Plan (CBTP), countywide or regional Welfare-to-Work Transportation Plan or are otherwise documented as a need within the community and that improve a range of transportation choice by adding new or expanded services. Capital projects that do not require ongoing funding are encouraged and may include the purchase of vehicles, the provision of bus shelters, benches, lighting, sidewalk improvements or other enhancements to improve transportation access for residents of low-income communities.	Capital or operating		20%								
JARC (administered thorugh MTC Lifeline Program)	Federal	MTC			Eligible projects include: • New or expanded transportation projects or services that provide access to transportation;					20% local match for capital projects and 50% local match for operating expenses								
Hazard Elimination Safety Program (HES)	Federal	Caltrans	Local agency		Safety improvements on any public road, public surface transportation facility, publicly-owned bicycle or pedestrian pathway or trail, or traffic calming measure	Preliminary engineering, right-of-way costs, and construction expenses				10%								
Safe Routes to School Program	State	Caltrans			Projects must be on a route to school and must improve bicycle and pedestrian travel. Eligible projects are rehabilitation, new bikeways and sidewalks, and traffic calming. Grants are allocated competitively.					10%					Annual, in May or June			
Bicycle Transportation Account (BTA)	State	Caltrans	Local agency		Adopted Bicycle Transportation Plan (BTP) that meets the requirements of Section 891.2 of the Streets and Highways Code, complies with the regional transportation plan and has been adopted by the local agency's Regional Transportation Planning Agency no earlier than four years prior to July 1st of the fiscal year in which BTA funds are granted.					10%								
State Highway Operations and Protection Program (SHOPP)		Caltrans			Highway operations and maintenance improvements.													

Background				Eligibility		Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
Bridge Investment Program (IIJA)				State, MPOs over 200K persons, lcoal government, special purpose district or public authority with a transportation function	Improve bridge (and culvert) condition, safety, efficiency, and reliability. - Project to replace, rehabilitate, preserve or protect one or more bridges on the National Bridge Inventory - Project to replace or rehabilitate culverts to improve flood control and improve habitat connectivity for aquatic species		$12.5 billion	0.25								FY 2022-2026		
Healthy Streets Program Section 11406 (IIJA)		Competitive		State, MPO, local government	To deploy cool pavements and porous pavements and to expand tree cover. The goals of the program are to mitigate urban heat islands, improve air quality, and reduce the extent of impervious surfaces, storm water runoff and flood risks, and heat impacts to infrastructure and road users.		$100 million annually		15	20								Priority given to eligible entity— (1) proposing to carry out an activity or project in a low-income community or a disadvantaged com21 munity; (2) that has entered into a community benefits agreement with representatives of the community; or (3) that is partnering with a qualified youth or conservation corps
Nationally Significant Multimodal Freight and Highway Program (INFRA) (IIJA)		Competitive			Adds freight resilience to natural hazards as considerations, as well as wildlife crossings.		$8 billion									FY 2022-2026		
Promoting Resilient Operations for Transformative, Efficient and Cost-saving Transportation (PROTECT) Grant Program (IIJA)		Competitive; Formula					$7.3 billion (~$631 million to CA, ~$121.3 estimated for FY 22									FY 2022-2026		
Reconnecting Communities (IIJA)					May include planning funds to study the feasibility and impacts of removing, retrofitting, or mitigating existing transportation facilities that create barriers to mobility, access, or economic development, and for construction funds to carry out a project to remove, retrofit or mitigate an eligible facility and, if appropriate, replace it with a new facility. An eligible facility includes a limited access highway, viaduct, or any other principal arterial facility that creates a barrier to community connectivity, including barriers to mobility, access, or economic development, due to high speeds, grade separations, or other design factors.		$1 billion (~$195 million in FY 22)		2 (planning), 5 (construction)	20 (planning) 50 (construction)						FY 2022-2026		
National Infrastructure Project Assistance (IIJA)		Competitive			Projects generating national or regional economic, mobility, or safety benefits, including highway or bridge projects, freight intermodal or freight rail projects, railway-highway grade separation or elimination projects, intercity passenger rail projects, and certain public transportation projects.		$15 billion											
Measure AA					Category 1 Reduce Congestion on Hwy 101 & Adjacent Roadways. Category 2 Maintain, Improve, and Manage Marin's Local Transportation Infrastructure. Category 3 Reduce School-Related Congestion and Provide Safer Access to Schools. Category 4 Maintain and Expand Local Transit Services													
Measure B	County	Programmatic, project specific	Marin County		Element 1: Maintain Local Streets and Pathways • Road maintenance, rehabilitation and congestion relief on local and residential streets. New facilities are also eligible for maintenance funds • Safety improvements for all modes • Emergency pothole repair on residential streets, sidewalks and pathways • Crosswalk and accessibility enhancements • Intersection control, pavement, and drainage improvements • Streetscape improvements to better manage stormwater runoff • Maintenance and improvement of Class I (exclusively) bicycle and pedestrian pathways, including new facilities Element 2: Improve Transit for Seniors and Persons with Disabilities • Implementing a Mobility Management Program that identifies and implements mobility options for Seniors and Persons with Disabilities • Support and Enhance paratransit (e.g. Whistlestop Wheels) and other local services focused on this population • Create a "Paratransit Plus" program to serve older seniors who may not qualify for service under the Americans With Disabilities Act • Implement other innovative programs to provide mobility to seniors as an alternative to driving Element 3: Reduce Congestion and Pollution 3.1. School Safety and Congestion Reduction, including: o Provide matching funds for Safe Routes to Schools programs o Enhance/expand programs designed to reduce congestion and improve safety around schools including Street Smarts and School Pool programs 3.2. Local Marin County Commute Alternatives 3.3. Alternative Fuels Infrastructure and Promotion		~2 million								Annual - every three years depending on element.		Fund division: Element 1 (35% to local streets, 5% to Class I bike paths), Element 2 (35%), Element 3 (25%). Element 1 local streets: population (50%) and lane miles (50%). Funding priorities will be determined by local public works directors working in concert with local residents and councils. Funds will be made available only to municipalities that have adopted a Complete Streets policy. Element 1 Class 1 bike paths: based on a publicly available, published inventory, adopted by TAM, of pathways constructed after January 1, 2008. Requires adoption of a Complete Streets policy. Funds will be first applied to total costs of pathway maintenance. Element 2: Funds go to Marin Transit. Element 3: TAM to distribute funds every two years based on grant opportunities and funding needs.

Background				Eligibility			Current or Upcoming Funding Cycle				Previous Funding Cycle				Funding Cycles			Evaluation
Source Name	Geography	Source Type	Sponsor	Applicants	Projects	Phases	Total Funds	Min Request (millions)	Max Request (millions)	Match	Award Year	Low Award	High Award	Average Award	Frequency	Next Cycle	Timely Use of Funds	Key Evaluation Metrics
SB1 Local Streets and Roads Program (LSRP)	State	Formula	California Transportation Commission	City, county	Projects need to be adopted by resolution at regular council or board of supervisors meetings. □ These funds are intended to be prioritized for expenditure on basic road maintenance and rehabilitation projects, and on critical safety projects. □ Eligible projects include: - Road Maintenance and Rehabilitation - Safety Projects - Railroad Grade Separations - Complete Streets Components (including active transportation purposes, pedestrian and bicycle safety projects, transit facilities, and drainage and stormwater capture projects in conjunction with any other allowable project) - Traffic Control Devices - Funds made available by the program may also be used to satisfy a match requirement in order to obtain state or federal funds for projects authorized by this subdivision. - Pursuant to Article XIX Section 2(a) of the constitution: "The research, planning, construction, improvement, maintenance, and operation of public streets and highways (and their related public facilities for nonmotorized traffic), including the mitigation of their environmental effects, the payment for property taken or damaged for such purposes, and the administrative costs necessarily incurred in the foregoing purposes."		$1.5 billion				FY 2021-22				Annualy, July 1st.	FY 2022-23		SHC Section 2103(a)(3)(C)(i) and (ii): (i) Fifty percent shall be apportioned by the Controller to cities, including a city and county, in the proportion that the total population of the city bears to the total population of all the cities in the state. (ii) Fifty percent shall be apportioned by the Controller to counties, including a city and county, in accordance with the following formulas: (I) Seventy-five percent shall be apportioned among the counties in the proportion that the number of fee-paid and exempt vehicles that are registered in the county bear to the number of fee-paid and exempt vehicles registered in the state. (II) Twenty-five percent shall be apportioned among the counties in the proportion that the number of miles of maintained county roads in each county bear to the total number of miles of maintained county roads in the state. For the purposes of apportioning funds under this subparagraph, any roads within the boundaries of a city and county that are not state highways shall be deemed to be county roads.
Marin Transit Property Tax	County		County		Marin Transit, for • Transit operations and maintenance • Transit capital		$2.3 million								Annual			
Local Sales Tax			Municipality		• Funding availability varies by jurisdiction, often used for local road maintenance													
Local Parcel Tax/Fee			Municipality		• Funding availability varies by jurisdiction, typically used for local road maintenance or local transportation projects													
Bridge tolls			Regional		• Projects that provide a nexus to improvements in bridge toll corridors													
Local Transportation Funds																		
State Transit Assistance (STA)	State	Formula	State	Congestion Management Agency (population-based), Transit Operators (revenue-based)	Revenue-based: fixed route and paratransit operations, for inter-operator coordination, including the cost of interoperator transfers, joint fare subsidies, integrated fares etc., and for capital projects consistent with the adopted long-range plan.		~269 million								Revenue based: annually May 15th.			Distributed by the State to MTC based on population and to transit operators based on revenue. Marin receives 5.71% of the STA popuilation-based County Block Grant. MTC's priorities are as follows: 1. Clipper 2. Zero emission busses

Key

NA	*Not applicable*
N/A	*Not available*
Subprogram	*Information dependent on which grant subprogram is relevant*
Formula	Information dependent on grant program formulas

Note: All $ are in millions

Appendix H

Project Development and Approval Process

Project Development and Approval Process

All projects on the state highway system follow the Caltrans project development process as outlined in the Project Development Procedures Manual, and they require coordination with the Caltrans Systems Planning and Advance Planning groups, local jurisdictions, MTC, and CTC. MTC is the transportation planning, financing, and coordinating agency for the nine-county San Francisco Bay Area, and CTC is responsible for programming and allocating funds for the construction of highway, passenger rail, transit, and active transportation improvements throughout California. This coordination effort ensures there is consensus on the proposed improvement projects that are adopted into the financially constrained Regional Transportation Plan, and that they are compatible with regional and statewide goals and objectives for mobility and connectivity.

PROJECT DEVELOPMENT

Project development involves the following:

Planning: The Existing Conditions, Constraints, and Opportunities Reports prepared under this study serve as feasibility studies to define the planning concepts and scope of the proposed improvement. Namely, they identify and clarify the specific transportation system problem, establish goals and objectives, and look for practical solutions.

Project Initiation: The next step is preparation of a Project Initiation Document (PID), which is used to obtain approval for inclusion of a project into a programming document or to get conceptual approval of a project-funded-by-others (i.e., projects that are sponsored by a local agency and do not use any State or federal funds).

The PID, typically a Project Study Report-Project Development Support (PSR-PDS), establishes a well-defined purpose and need statement, proposed project scope and schedule, and estimated support costs and resources necessary to advance the project to the Project Approval and Environmental Document (PA&ED) phase. However, the level of engineering detail and effort for developing a PSR-PDS is limited to the effort needed to develop the work plan for the PA&ED phase and to develop a “ballpark” estimate of the construction cost. A full PSR provides conceptual approval and is used to program all support, right of way acquisition, and construction costs. For projects to be programmed into the STIP, a project programming request (PPR), as described in the STIP Guidelines, must be included as an attachment to the PID. An approved PID is required for any major work on the state highway system regardless of how it is funded.

Project Approval and Environmental Document: When an environmental document is prepared for a project, it is a key project approval document. The environmental document is prepared to assure that the project complies with State and federal environmental laws. All project activities, such as the development of project alternatives, public input, and selection of the preferred alternative, are discussed in the final environmental document. Projects with draft environmental documents require the preparation of a draft project report (DPR) prior to finalizing the project report (PR). The DPR documents the need for the transportation project and summarizes the studies of the cost, scope, and overall impact of project alternatives so that an informed decision can be made on whether or not to proceed to the public hearing phase of project development. After a public hearing and the selection of a preferred alternative, the DPR is updated to become the PR.

When a project is statutorily or categorically exempt under the California Environmental Quality Act of 1970 (CEQA) and categorically excluded under the National Environmental Policy Act of 1969 (NEPA), there is no environmental document so all information must be provided in the PR.

The PR documents approval by Caltrans for most types of state highway projects. This includes new facilities, as well as improvements, modifications, or repairs to existing facilities — whether done by Caltrans or by others under an encroachment permit.

When a PSR-PDS is used to initiate the project, a PR will be used to program the remaining support, right of way, and construction costs.

Project Design: Once the preferred alternative has been chosen and the project has been approved, project design (preparation of plans, specifications, and estimate [PS&E]) can be initiated. Typical steps involve 35%, 65%, 95%, draft 100%, and final PS&E with reviews by Caltrans District and Headquarters Division of Engineering Services. An environmental reevaluation should be conducted to confirm the project design is within the framework of the project approval document, which includes the environmental document.

Prepare and Advertise Project Contract: At the completion of design work, some additional details need to be completed prior to advertising the contract. Right of way certification and a CTC funds request approval must be obtained. The final project documents and bid package are then assembled to prepare the project for advertising.

Conduct and Complete Construction Project: Contract approval authorizes construction of the project. The project is constructed, and the contract is administered according to the PS&E that was developed by the project engineer. The resident engineer for the project prepares the final construction project records when the project is complete, including any

design changes during construction. The final contract estimate, project history file, and the as-built plans for the project are completed before the project is complete.

A cooperative agreement with Caltrans is required if the phase, will involve the exchange of funds, effort, or materials between Caltrans and another public entity for each phase of the project development process.

Other Reports that Approve Projects

Project Study Report-Project Report (PSR-PR): For certain projects with limited potential for impact, the District Director can authorize use of a combined PSR-PR.

If a project has any of the following features, the project cannot use the PSR-PR:

- New or modified Interstate access, as the Federal Highway Administration (FHWA) approval process is a two-step process.
- Approval of a route adoption by the CTC.
- An environmental impact report to comply with CEQA, an environmental impact statement to comply with NEPA, or both. It is permissible to use a PSR-PR to program and approve a project that requires federal approval but does not involve federal funding. A supplemental PSR-PR will be needed to obtain final environmental approval to comply with NEPA and to obtain federal approval.
- Clean Water Act, Section 404 Individual Permit
- Coastal Development Permit
- San Francisco Bay Conservation and Development Commission (BCDC) Permit
- Tahoe Regional Planning Agency Permit
- Formal consultation under the Federal Endangered Species Act

Design Engineering Evaluation Report for Projects-Funded-by-Others: Projects that meet required evaluation criteria can utilize the design engineering evaluation report (DEER). The DEER will document both project initiation and project approval, eliminating the need for separate processing of a PID. The DEER process is intended to streamline the processing of projects-funded-by-others by reducing the steps in the project development process. This is not intended to relieve the project sponsor from meeting all other Caltrans policies, standards, and practices. Caltrans may increase the level of documentation and processing for those projects that are deemed complex.

The project sponsor is responsible for the preparation of the DEER and providing all supporting documentation.

For a project that is sponsored, financed, and its project development work is administered by external entities, a DEER can be used in lieu of a PSR-PDS, PSR-PR, and PR if the project meets all the following conditions:

- Project has approved environmental document (Categorical Exemption [CE], Negative Declaration [ND], Environmental Impact Report [EIR], Environmental Impact Statement [EIS], etc.) or project is CE by CEQA and/or NEPA and has completed studies or public outreach.
- Project only has a single-build alternative.
- Project does not require CTC action.
- Project does not involve any right of way conveyances from Caltrans to the local agencies (e.g., dedications, relinquishments, modifications to State right of way limits, etc.).
- Project does not require FHWA approval for relinquishments or NPRCs involving a modification to access control.
- Project does not involve construction of new structures or bridge widenings.

Encroachment Permits Office Projects

Based on the complexity of the project, impacts, need for CTC action, need for approval by the FHWA, and the scope of work on the state highway system, all projects that require an encroachment permit are processed through one of two processes: the encroachment permits office process (EPOP) or the quality management assessment process (QMAP). The EPOP will require a permit application review. The QMAP will require either a DEER or a PSR-PDS, as outlined above.

Eligibility to proceed under the EPOP and submit an Encroachment Permit Application Package (EPAP) is determined by the Form TR0416 checklist, which includes the following conditions:

- Project's total construction costs within the existing or future state highway right of way is
  $1 million or less.
- Project has an approved environmental document (CE, ND, EIR, EIS, etc.) or project is CE by CEQA and/or NEPA and has completed studies or public outreach.
- Project design and submittal is complete (at 100%) and the EPAP includes all required supporting documents, reports, etc.
- Project does not involve any right of way conveyances (e.g., dedications, relinquishments, modifications to right of way limits, etc.).

- Project does not propose constructing new structures (e.g., earth retaining structures, such as retaining walls, tie backs, soil nails, sound walls, culverts, etc.) that are not per Caltrans Standard Plans.
- Project does not propose conduits greater than 60 inches in diameter to be installed by trenchless methods or tunneling (diameter 30 inches and above) with depth of cover less than 15 feet.
- Project does not propose high priority utilities, liquid, and gas carrier pipes on or through bridges/structures.
- Project does not propose structural modifications of a Caltrans structures (certain superficial attachments are not considered structural modifications).
- Project does not propose new permanent stormwater treatment facilities, create 5000 square feet or more of new non-highway impervious surface or create 1 acre or more of newer highway impervious surface.
- Project is not proposed in known slip/slide prone areas, and proposed work will not adversely impact geological stability.
- Project does not require agreements to be executed with Caltrans, or an agreement is required but Caltrans standard templates can be used (e.g., maintenance, lease, Joint Use Agreements, etc.).
- Project does not propose nonstandard roadway design features (lane widths, super elevation, etc.) requiring a Design Standard Decision Document (not applicable to utility-only projects).
- Project does not require CTC action for anything other than funding approval (e.g., relinquishments, new public road connections, etc.).
- Project does not propose new sound walls on bridges or modifications to existing sound walls on bridges.
- Project does not propose increasing highway capacity or converting operational nature of highway lanes (e.g., converting to high-occupancy toll [HOT] or toll lanes, etc.).

ENVIRONMENTAL REVIEW

The CEQA review process can result in three different determination/document types — an exemption, an Initial Study with ND or Mitigated Negative Declaration (IS/ND or IS/MND), or an EIR. The level of environmental determination required by a specific project will be dependent on the nature and complexity of the project to be implemented, and whether significant impacts are anticipated.

The following are extracted from the Caltrans Fact Sheet on CEQA document types.

Statutory Exemptions

The Legislature has the ability to determine that certain types of projects are exempt from CEQA (or portions thereof). These are known as statutory exemptions and are generally specific in nature. Projects subject to a statutory exemption do not require further analysis under CEQA.

Note that under SB 288, certain pedestrian and bicycle projects are exempt from CEQA review until January 1, 2030. The exemption applies to active transportation plans; feasibility studies for active transportation; and bicycle, pedestrian, and transit projects. They include bicycle parking; signal timing; wayfinding; transit prioritization projects; pedestrian and bicycle facilities; or bus rapid transit, bus, or light rail services, including dedicated transit lanes, transit queue jump lanes, high-occupancy vehicle (HOV) lanes, transit stop boarding islands, and pedestrian improvements (e.g., widening sidewalks and adding pedestrian refuge islands). Additionally, SB 299, which is currently working its way through the legislature, would make the exemptions allowed under SB 288 permanent.

Categorical Exemptions

The most common exemption under CEQA is the CE. The CEQA Guidelines (§§ 15301-15333) list 33 categories (or classes) of projects that qualify for exemption. These classes are project types that are common and typically have no significant impacts associated with them. If a project fits within any of these classes, it can be considered categorically exempt and generally needs no further CEQA analysis.

The following classes may apply to the types of projects or project elements anticipated under the Highway 101 Interchange project.

Class 1 - Existing Facilities consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features that involve negligible or no expansion of existing use at the time of the lead agency's determination. The types of "existing facilities"

itemized below are not intended to be all inclusive of the types of projects that might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use.

Class 1 (c): Existing highways and streets, sidewalks, gutters, bicycle and pedestrian trails, and similar facilities (this includes road grading for the purpose of public safety).

Class 1 (c), in combination with Class 1(d) and Class 2, includes the following:

1. Cleaning and other maintenance of all facilities.
2. Resurfacing and patching of streets.
3. Street reconstruction within existing curb lines.
4. Replacement of existing drainage facilities.
5. All work on sidewalks, curbs, and gutters without changes in curb lines, including lowering of curbs for driveways and additions of sidewalk bulbs when not in conjunction with a program for extensive replacement or installation.
6. Replacement of stairways using similar materials.
7. Repair and replacement of bikeways, pedestrian trails, and dog exercise areas, and signs so designating, where to do so will not involve the removal of a scenic resource (creation of bike lanes is covered under Class 4(h) below).
8. Replacement of light standards and fixtures, not including a program for extensive replacement throughout a district or along an entire thoroughfare.
9. Changes in traffic and parking regulations, including installation and replacement of signs in connection therewith, where such changes do not establish a higher speed limit along a significant portion of the street and will not result in more than a negligible increase in use of the street.
10. Installation and replacement of guide rails and rockfall barriers.
11. Installation and removal of parking meters.
12. Painting of curbs, crosswalks, bus stops, parking spaces, and lane markings, not including traffic rechannelization.
13. Installation, modification, and replacement of traffic signals where no more than a negligible increase in use of the street will result.
14. Replacement of transit vehicle tracks and cable car cables with no alteration of the grade or alignment.
15. Rechannelization or change of traffic direction where no more than a negligible increase in use of the street will result.
16. Installation of security fencing and gates.

Class 1 (d): Restoration or rehabilitation of deteriorated or damaged structures, facilities, or mechanical equipment to meet current standards of public health and safety, unless it is determined that the damage was substantial and resulted from an environmental hazard, such as an earthquake, landslide, or flood.

Class 2 - Replacement or Reconstruction consists of the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

Class 4 –Minor Alterations to Land consists of minor public or private alterations in the condition of land, water, and/or vegetation that do not involve removal of healthy, mature, scenic trees, except for forestry and agricultural purposes.

Class 4(h): The creation of bike lanes on existing rights of way.

Exceptions to the Categorical Exemptions

There are instances, however, where a project may not qualify for an exemption even if it fits into one of the 33 exempt classes. These are called exceptions to the categorical exemptions. These exceptions apply to projects that:

- Are located in certain specified sensitive environments (applies only to Classes 3, 4, 5, 6, and 11);
- Are located on a site included on any list compiled pursuant to California Government Code § 65962.5 ("Cortese List");
- May damage scenic resources within an officially designated state scenic highway;
- May cause a substantial adverse change in the significance of a historical resource;
- May have a significant effect on the environment due to unusual circumstances; or
- May contribute to significant cumulative impacts (CEQA Guidelines § 15300.2).

Other Exemptions

The "General Rule" exemption (CEQA Guidelines § 15061(b)(3)) is often used if a project does not fit into one of the classes of categorical exemptions. The "General Rule" exemption means that CEQA only applies to projects that have the potential to cause a significant impact. If there is no possibility that the activity in question may have a significant impact, the activity is not covered by CEQA.

Note, that for all categorical and general rule exemptions, the question is whether or not the project has the potential to cause a significant impact. A project with impacts can be exempted from CEQA, so long as those impacts are not significant and will not require mitigation.

Initial Studies/Negative Declarations/Mitigated Negative Declarations

If the project does not qualify for an exemption or if the impacts of a project are not known or if any anticipated significant impacts of the project can be mitigated to "less-than-significant," an IS will be prepared. Note that an IS will sometimes be prepared at the request of a responsible agency under CEQA. The CEQA checklist is commonly used as a first screening for potential impacts to individual resources. After technical studies are performed, if it is shown that none of the impacts are significant, an ND is prepared for the project. If it is determined that there are potentially significant impacts, but these impacts can be mitigated to "less-than- significant," an MND is prepared for the project. CEQA requires that the IS with a proposed ND or MND be circulated to the public for a 30-day review and comment period prior to final adoption (CEQA Guidelines § 15105(b)). If the IS identifies significant impacts from the project that cannot be mitigated to "less-than-significant," an EIR must be prepared.

Environmental Impact Reports

An EIR is prepared for projects that will, or may, have significant impacts to any one resource area that cannot be mitigated to "less-than-significant." An EIR can also be prepared for greater defensibility when there is known opposition to a project (see "Judicial Standards" below). The EIR differs from the IS as it contains all the analysis that the IS contains, but it also includes a range of reasonable alternatives, a cumulative impact analysis, a growth-related impact discussion, the significant effects of the proposed project, the significant effects of the proposed project that cannot be avoided if the proposed project is implemented, the significant irreversible environmental changes that would be involved if the proposed project is implemented, and the mitigation measures proposed to minimize the significant effects (CEQA Guidelines § 15126 et seq.).

A draft EIR is circulated to the public for a 45-day review and comment period (CEQA Guidelines § 15105(a)). Relevant comments received during the public review period (and responses to those comments) are incorporated into the Final Environmental Impact Report (FEIR). If the FEIR identifies impacts that cannot be mitigated to a level of "less-than-significant," specific Findings (CEQA Guidelines § 15091) and a Statement of Overriding Considerations (SOC) are prepared (CEQA Guidelines § 15093). The Findings and the SOC are not included in the FEIR but are kept in the project file.

In order to keep open the option for federal funds, it is customary to obtain environmental clearance under NEPA as well as CEQA. The comparable NEPA documents are the Categorical Exclusion, Environmental Assessment, and EIS.

Appendix I

List of Potential Local Projects

TAM HIGHWAY 101 IMPROVEMENTS
Potential Local Sponsorship Projects

No.	Location	Potential Improvements	
		Local Project	**Encroachment Permit Project**
1	Alexander Ave / Vista Point	1. Construct portions of multiuse path outside of CT ROW 2. Construct Alexander Ave/ramps intersection improvements 3. Add near-term bike lanes	1. Improve multiuse path between Vista Point and Alexander Ave under Near-term
2	Donahue St / North Bridgeway Road / Bridgeway	1. Construct portions of multiuse path and intersection improvements outside of CT ROW	1. Upgrade & interconnect traffic signals on Donahue St
3	East Blithedale Ave / Tiburon Blvd (SR 131)		1. Improve transit walkways to be ADA compliant 2. Add bike lanes and sidewalk segments
4	Tamalpais Drive / Paradise Drive	Assume implementation by Caltrans	
5	Sir Francis Drake / Fifer Ave / Industrial Way	-	1. Add bus stops and access pathways at Sir Francis Drake
6	Second Street / Heatherton St	-	-
7	North San Pedro / Merrydale Road	1. Construct Near-term Merrydale Road improvements 2. Improve Civic Center Drive intersection (Near- or Long-Term) 2. Improve North San Pedro Road sidewalks and bike facilities	-
8	Manuel T. Freitas / Civic Center Drive	1. Improve Northgate Drive intersection & pedestrian crossing (remove small pork chop islands), upgrade signal	1. Tighten SB off ramp to remove free flow 2. Upgrade west side signals & interconnect
9	Lucas Valley Road / Smith Ranch Road	1. Provide new bus stops on Lucas Valley & Smith Ranch Rds 2. Provide sidewalks on Redwood Hwy	1. Improve transit walkways to be ADA compliant 2. Provide multi-use path on south side of Lucas Valley Road
10	Alameda Del Prado / Nave Drive	1. Add bike lanes to Alameda Del Prado	-
11	Ignacio Blvd / Bel Marin Keys / Nave Dr	1. Add bike lanes to Ignacio Blvd & Bel Marin Keys 2. Add bike lanes to Nave Dr under Near-term 3. reconfigure Nave Dr under Long-term	1. Add bike lanes between Enfrente Rd and Nave Dr
12	San Marin Dr / Atherton Ave	1. Add bike lanes to San Marin Dr, Redwood Blvd under Near-Term 2. Reconfigure San Marin Dr & Redwood Blvd under Long-Term	1. Provide ADA compliant pathway to Park & Ride 2. Add bike lanes on Overhead & Overcrossing 3. Signal upgrades & interconnect

Appendix J

Caltrans 3-Year PID List

Workload Info	Project Information									SHOPP		Non-SHOPP							Status		Programming		Document		Comments
Workload ID	District	County	Route	Begin Postmile	End Postmile	Purpose & Need	Improvement Description	K-Phase EA	Project ID Number	SHOPP Program Category	SHOPP Program Code (20.10.201.xxx)	SHA or Reimbursement (SHA, R)	Lead/IQA	Project Sponsor	Implementing Agency	Cooperative Agreement Status (Executed, Under Development, NA)	Cooperative Agreement #	Federal/State/Local/Mix	PID Status	% Complete	Estimated Project Cost ($M) (Capital + Support Costs)	Target Programming Cycle	PID Type	Refresher/Supplemental PID (R/S/NA)?	
1	4	MRN	US 101/ I580	US 101 8.5/ I580 2.5	US101 10.0 / I580 4.0	Address congestion to the Richmond San Rafael Bridge including traffic management Elements	Construct freeway to freeway direct connector from NB US101 to EB I580	2AA10K	04-042000003	TBD	R for K phase	R	IQA	TAM	TAM	Executed	CA 04-2760	State/Regional	TAM Initiated Preliminary Studies - Need to initiate PID	0	$135M-255M	FY 22	PSR/PDS	NA	
2	4	MRN	US 101	1	21	Improve operational capacity of 12 Interchanges on US101 and address complete streets elements including improved access to transit	Operational improvements to 12 Interchanges an approaching roadways, including safety improvements for bicycle/pedestrian access through the interchange, and circulation and signal improvements to nearby intersections	TBD	TBD	TBD	TBD		IQA	TAM/ Caltrans/ Local Juridictions	TBD	NA	NA	Mix	Pending Study Results	0%	$20M+	FY22	PSR/PDS	NA	TAM currently studying 12 Interchanges and approaching Roadways. Interchanges will be priorized and three will be selected for PID development
3	4	MRN	SR37	11.2	14.6	Address current flood impact to roadway and future effects of Sea Level Rise	Potential drainage and roadway elevation change	TBD	TBD	TBD	TBD	SHA	IQA	TAM/ Caltrans	TBD	NA	NA	Mix	-	5%	TBD	TBD	PSR/PDS	NA	Short/mid term flood and SLR mitigation projects are being developed through current Caltrans and MTC planning studies
4	4	MRN	US101	VAR	VAR	Improve local arterials parallel to US101 an I-580/ Aux Lanes	TBD (five locations)	TBD	240660	TBD	TBD	R	IQA	TAM/ County/ City	TAM/ County/ City	NA	NA	Mix	-	0%	TBD	TBD	PSR/PDS	NA	
5	4	MRN	US101	VAR	VAR	Address complete streets elements an access to Transit	TBD (ten locations)	TBD	TBD	TBD	TBD	R	IQA	TAM/ Golden Gate Transit	TAM/ County/ City	NA	NA	Mix	-	0%	TBD	TBD	PSR/PDS	NA	
6	4	MRN	I580	2.9	3.1	Improve turn movement and safety at Andersen Dr/E. Sir Francis Drake Intersection	Improve I580 off-ramp to ESFD and signalize Andersen Dr/E. Sir Francis Drake Intersection	TBD	230422	TBD	TBD	R	IQA	TAM	TAM/ City of San Rafae	NA	NA	Mix	-	0%	TBD	TBD	PSR/PDS	NA	
7	4	MRN	US101	19	19.2	Improve US 101 and SR37 I/C, including SLR impact	Modernize interchange to include sea level ri adaptation	TBD	TBD	TBD	TBD		IQA	TAM/ Caltrans	TBD	NA	NA	Mix			$150M	TBD	PSR/PDS	N/A	
8	4	MRN	US101	12	21	Reduce Transit travel time during congested periods of the day	Add part time transit lane using the south bound outside shoulder	TBD	TBD	TBD	TBD		IQA	TAM/ Caltrans	TBD	NA	NA	Mix			$8M	TBD	PSR/PDS	N/A	TAM is currently preparing a Part Time Transit Lane Feasibility Study with funding provided by Caltrans Planning Grant.
9	4	MRN	SR1	16.7	17.2	Improve the function of Lewis Gulch Creek and Wilkins Gulch Creek, alleviate chronic flooding, and improve roadways to protect access to the towns of Bolinas and Stinson Beach	Reconfigure the SR 1/Olema Bolinas Road intersection. Upgrade the existing Lewis Gulch Creek/SR 1 culvert	TBD	TBD	TBD	TBD			County / Caltrans	County	NA	NA	Mix			TBD	TBD	PSR/PDS	N/A	
10	4	MRN	US101	4.1	4.7	Address current flood impact to roadwa and future effects of Sea Level Rise through Marin City and Manzanita area	Reconfigure drainage flow, redesign detention system and reconfigure roadway	TBD	TBD	TBD	TBD		IQA	TAM/ Caltrans/County	TBD	NA	NA	Mix			TBD	TBD	PSR/PDS	N/A	