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Authority
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Los Angeles, CA

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PLANNING AND PROGRAMMING COMMITTEE
APRIL 17, 2024

SUBJECT: PILOT VEHICLE MILES TRAVELED (VMT) MITIGATION PROGRAM

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

APPROVE the Pilot VMT Mitigation Program (Attachment A).

ISSUE

In September 2020, Caltrans released statewide guidance for analyzing transportation impacts under the California Environmental Quality Act (CEQA). Succinctly, the guidance directs project sponsors, such as Metro, to use vehicle miles traveled (VMT) as the transportation impact analysis metric to measure and mitigate induced travel impacts on the state highway system (SHS).

In 2021, Metro was awarded funds through the Caltrans Sustainable Transportation Planning Grant program to develop a Metro Pilot VMT Mitigation Program. The Pilot VMT Mitigation Program is a set of four tools to measure and mitigate the potential induced travel impacts of Metro highway and ExpressLanes projects on the SHS. The pilot term is not temporal but will instead be based on the application of the tools to a minimum of one highway project and one ExpressLanes project.

Per the requirements of the Caltrans grant, the Board must take formal action on the Pilot VMT Mitigation Program.

BACKGROUND

Under CEQA, public agencies must analyze transportation projects to determine whether they may have a significant impact on the environment. Senate Bill (SB) 743, signed into law in 2013, initiated an update to the CEQA guidelines to change how lead agencies evaluate transportation impacts to promote greenhouse gas (GHG) reduction.

Induced travel impacts are most commonly associated with the addition of new lane miles in essence additional roadway capacity. Added roadway capacity increases speed of travel in the short term, which results in more trips and more travel over time, therefore resulting in increased VMT and corresponding GHGs.

In response to these Caltrans rule changes, Metro pursued and was awarded Fiscal Year (FY) 2021-22 Caltrans Sustainable Transportation Planning Grant Program funds to develop a Pilot VMT

Mitigation Program, which would measure and mitigate the VMT impacts attributable to Metro projects on the SHS.

DISCUSSION

The premise of the Pilot VMT Mitigation Program is that Metro can mitigate the potential VMT-inducing impacts of highway and ExpressLanes projects by investing in Metro VMT-reducing projects and programs or the VMT-reducing projects and programs of our public agency partners. This is accomplished through the development of tools that comprise an evaluative framework to anticipate future mitigation needs and to streamline the process for estimating the VMT reduction capacity of a discrete set of mitigations. Of note, the Metro ExpressLanes on the 110 and 10 were developed as multimodal ExpressLanes with the focus of increasing person throughput -- moving more people, not more cars.

The specific tools developed through this VMT Mitigation Program study include: 1) a quantification methodology to measure induced travel impacts resulting from Metro highway or ExpressLanes projects; 2) a discrete list of mitigations pre-analyzed for their VMT reducing potential; 3) a VMT Calculator populated with the aforementioned mitigations to estimate the VMT reduction potential of a mix of mitigations; and, 4) a VMT Mitigation Bank that establishes a monetary value for a specific set of VMT-reducing projects such that a project sponsor can buy credits to mitigate induced travel impacts.

The first tool is described under the Quantification Methodology below. The remaining three tools are described in the Mitigation and Mitigation Tools section in addition to the Evaluation Criteria, Pilot Term, and Stakeholder Engagement sections for the proposed Pilot VMT Mitigation Program.

1 - Quantification Methodology

At the September 20, 2023 Planning & Programming Committee meeting, staff presented Metro's LA County-Specific Quantification approach and noted that Caltrans did not concur with Metro's approach. Since that time, common ground has been found in several key areas, and some disagreement remains:

- Caltrans agreed to explore a hybrid approach, with a number of cautions and further suggested that working through the approach on a project-by-project basis could be an appropriate means to conduct that exploration.
- Caltrans agreed to reductions in the default elasticity to account for the presence of trucks consistent with the California Environmental Quality Act (CEQA).
- Caltrans rejected the elasticities developed through Metro's quantification methodology analysis.

At the September meeting, staff also included rough order of magnitude (ROM) estimates of mitigation costs for the State Route (SR) 14 Traffic Safety Improvement Project comparing the Metro LA County-Specific Quantification Methodology to Caltrans' preferred methodology, the California Induced Travel Calculator. Mitigation costs for this example were derived from two projects undergoing environmental review at that time: I-680 Northbound ExpressLanes project in Contra

Costa County and I-5 Managed Lanes Project in Orange County. The comparison is included below in Table 1.

TABLE 1: SR-14 Traffic Safety Improvement Project-Potential Mitigation Obligation

Project Cost	**LA County-Specific Quantification Methodology**	**California Induced Travel Calculator**
Estimated Capital Cost	$168 million	
*Mitigation Cost**	$97.7 million	$252.6 million
Total Project Cost with Mitigation	$265.7 million	$420.6 million

**Based on I-680 Northbound ExpressLanes project in Contra Costa County and I-5 Managed Lanes Project in Orange County*

Staff have new ROM mitigation cost estimates based on Caltrans' concurrence on the use of a hybrid methodology as noted above, using Metrolink service expansion as the mitigation strategy. As you can see in Table 2 below, even if Caltrans agreed to the use of the Metro LA County-Specific Quantification Methodology, cost estimates have increased from the original estimates reported in September 2023 (Table 1). Conversely, the use of the hybrid methodology reduces total mitigation costs when compared to the California Induced Travel Calculator.

TABLE 2: SR-14 Traffic Safety Improvement Project-Revised Potential Mitigation Obligation

Project Cost	**LA County-Specific Quantification Methodology**	**Hybrid Methodology**
Estimated Capital Cost	$168 million	
*Mitigation Cost**	$107.4 million	$196.2 million
Total Project Cost with Mitigation	$275.4 million	$364.2 million

**Based on Metrolink service expansion of lines serving Los Angeles County*

Metro staff believe that the technical analysis in developing our quantification methodology is valid, although staff have not received concurrence from Caltrans. Nevertheless, it is important to note that Caltrans is the owner, operator, and CEQA lead for all projects on the SHS. By definition, Metro cannot deviate from the rules prescribed by Caltrans without their agreement. So, while Metro staff see merit in using the quantification approach on a project-by-project basis, staff do not have the authority to unilaterally impose our quantification methodology without Caltrans' approval.

Mitigations and Mitigation Tools

A mitigation program that applies a consistent approach across a set of projects requires more work upfront but can be advantageous over an ad hoc approach to project mitigation. Project-by-project mitigation requires that each project individually identify, analyze, negotiate, and coordinate the implementation of mitigation actions and does not guarantee any consistency in the analysis

approach to determine how much VMT reduction can be achieved from mitigation action investments. A mitigation program, on the other hand, provides advanced planning to ensure consistency and to intentionally pre-plan mitigations with implementers to ensure better outcomes.

Three major tasks were completed to develop this mitigation program approach: 1) a discrete list of VMT mitigations pre-analyzed for their VMT-reducing potential; 2) a Metro VMT Calculator to estimate the VMT reduction potential of a discrete list of projects and programs applied to specific subregions in Los Angeles County; and, 3) a VMT Mitigation Bank that establishes a monetary value for a specific set of VMT-reducing projects such that a project sponsor can buy credits to mitigate induced travel impacts.

2- Mitigations

For a mitigation to be considered eligible under this program it must meet two eligibility criteria. First, the mitigation must effectively reduce VMT. Mitigations that reduce GHGs alone are insufficient. Per CEQA, to mitigate induced travel, a mitigation must be effective at reducing VMT. Second, the VMT-reducing potential of a mitigation must be supported by substantial evidence. That means there must be an established evidentiary basis of the VMT-reducing potential of a given applied mitigation. For purposes of this study, Metro relied largely on the evidentiary basis provided by the California Air Pollution Control Officers Association (CAPCOA) 2021 Handbook, which is the most extensively documented compendium of VMT quantification methodologies based on peer-reviewed industry research available for California planning agencies to date. Finally, for this initial pilot program, Metro placed a premium on mitigations that were directly enforceable by Metro to ensure that mitigations are delivered.

Based on the eligibility criteria, the list of mitigations in Table 3 has been identified for the initial pilot phase.

TABLE 3: Mitigation Actions Identified for the Pilot VMT Mitigation Program

MITIGATION ACTIONS
Increase Metro Bus Service Frequency
Provide Bus-Only Lanes
Extend Transit Network Coverage or Hours
Provide Bus Rapid Transit
Expand Metro Micro Service to New Zones
Expand Subsidized or Discounted Transit Program (U-Pass)
Implement Subsidized or Discounted Transit Program (Employer Pass)
Support Employer Commute Trip Reduction Program
Implement Affordable Housing on Metro Joint Development Sites
Implement Community-Based Travel Program (Metro TDM Master Plan)
Implement Electric Bikeshare Program
Implement Non-Electric Bikeshare Program
PARTNER MITIGATION ACTIONS

Metrolink Service Expansion
Implement South Bay Cities Council of Governments Local Travel Network
PENDING IMPLEMENTING AGENCY
Implement Electric Bike Voucher Program

The list of mitigations above is not exhaustive and could be expanded over time with additional resources to include mitigations such as Metro light or heavy rail service frequency improvements and more. However, for this pilot phase, these mitigation measures were determined to have a high degree of confidence in terms of effectiveness, enforceability, and evidentiary support. The electric bike voucher program is the only mitigation on this list that does not currently have an implementing agency but could be deployed as a mitigation for a Metro highway or ExpressLanes project at the municipal, subregional, or county scale.

Evaluation Criteria

Staff also developed evaluation criteria to analyze the efficacy of mitigations across a set of key indicators. This exercise did not result in the elimination of any mitigation but rather was used to qualitatively assess opportunities and challenges with each individual mitigation.

The key evaluation criteria used in this exercise were:

- Metro Direct Enforceability - the degree to which a mitigation is directly implemented and enforced by Metro.
- Expansion of Existing Programs - this generally correlates with lower implementation costs attributable to having administrative and organizational infrastructure in place.
- Cost Effectiveness - assess on cost per VMT reduced.
- Scalability - can the mitigation be easily scaled up or expanded?
- Incorporation into a Highway or ExpressLanes Project - mitigations that can easily and directly be incorporated into the project are more efficient by avoiding separate implementation efforts, cost, and time.
- Speed of Delivery Timeframe - how quickly the mitigation can be delivered, with shorter implementation times more desirable than longer ones.
- Benefits to Equity Focus Communities (EFC) - does the mitigation provide direct benefits or otherwise better serve EFCs comparatively?
- Benefits to Populations Affected by VMT/Pollution Burdens - the degree to which a mitigation may provide relief to burdened communities.
- Ease of Implementation - the degree of difficulty associated with inter-jurisdictional coordination required and infrastructure challenges like right-of-way acquisition.

As mentioned above, no mitigations were screened out through this evaluation process, but the review was critical to identify which mitigations were best suited for inclusion in a VMT Mitigation Bank and which mitigations remain eligible outside of a VMT Mitigation Bank.

3- Metro VMT Calculator

The Metro VMT Calculator is an Excel-based spreadsheet that estimates reductions in VMT resulting from the actual application or implementation of the fifteen mitigation actions listed in the Mitigation Action Table 3 above. This tool is intended to serve as a resource for identifying and evaluating the VMT-reducing potential of a mitigation action or combinations of mitigation actions for projects on the SHS.

The tool was developed in partnership with Caltrans. The tool is modular and flexible and designed to be relatively easy to modify as new estimation methodologies are developed or new mitigations are added. The intended users of the Calculator are Metro and Caltrans staff or their respective consultant teams responsible for the delivery of highway or ExpressLanes projects determined to have a significant induced VMT impact.

The Calculator's underlying prepopulated data relating to travel behavior in each Metro subregion derive from the Southern California Association of Governments (SCAG) 2020 activity-based model (ABM), which is the adopted regional model for the six-county SCAG area. The SCAG model is programmed with demographic data at the transportation analysis zone (TAZ) level and outputs data on vehicle trip length, VMT, and mode split. This baseline data is combined with CAPCOA VMT reduction formulas to estimate VMT reduced in a given subregion for a given mitigation action.

The Metro VMT Mitigation Calculator also permits the user to focus the implementation of any mitigation action to EFCs exclusively. This option is not related to any CEQA statute or guidelines but rather supports Metro's work by allowing the user to select a suite of implementable mitigation actions that may benefit EFCs specifically.

4- **VMT Mitigation Bank**

The primary goal of the VMT Mitigation Bank is to provide a streamlined and CEQA-defensible approach to mitigating the induced travel impacts of projects on the SHS through the development and sale of mitigation credits to offset increases in VMT.

A Bank achieves this by obviating the work of interfacing with project implementers to assess available mitigations and their corresponding VMT-reducing potential by pre-analyzing a set of mitigations, estimating the total VMT-reducing potential and total cost, including annual escalation factors, and then establishing a cost credit per VMT reduced. This means that project sponsors do not buy mitigations, they buy credits.

Based on the list in Table 3, the following four pilot mitigation actions were identified for the VMT Mitigation Bank: Metro Bus Service Frequency Improvements, Metro Bus-Only Lanes, Metro Joint Development, and Metrolink Service Expansion. These four actions have been converted into implementation packages with associated VMT credit values, costs, and minimum units of purchase as described in Attachment A. This approach ensures that mitigation dollars can be invested more expediently in an incremental manner, rather than waiting for full funding to accrue for the totality of

the mitigation. By converting the mitigation actions into implementation packages, there is an assurance that with a single transaction (e.g. a credit purchase by a sponsor of a project on the SHS), sufficient funding will be deposited in the Bank such that mitigation actions can be funded.

To be clear, a CEQA-defensible mitigation is not predicated on a mitigation action being completely funded or implemented; but the use of implementation packages as a minimum unit of sale will reduce the risk that a mitigation action will be partially funded but not implemented.

Projects on the SHS often take four or more years to construct once the Project Approval & Environmental Document phase (PA&ED) is complete. Mitigation credits should be purchased at the close of PA&ED, to ensure credit availability. Studies show that full VMT impact occurs in year 10 of a project opening; therefore, mitigation credits would need to be in place within approximately 14 years of the close of PA&ED, which is expected to be ample time for a mitigation action to be fully funded and implemented.

Future mitigation actions can be added to the Bank based on the success of the pilot program. It is envisioned that once 50% of the credits have been sold and the mitigation actions are meeting interim success standards, the Mitigation Bank Manager will identify additional mitigation actions, based on future SHS project needs to ensure that mitigation credits will be available. Similarly, depending on the success of the pilot program, Metro may elect to expand the VMT Mitigation Bank program to include transactions beyond the narrow application to highway and ExpressLanes projects.

Annual audits and reports to the Board will necessarily be part of the VMT Mitigation Bank administrative functions. Staff will provide the Board with annual reporting on VMT Mitigation Bank transactions, mitigation status, investments in EFCs, successes and challenges, and any forthcoming projects that may require mitigation. The VMT Mitigation Bank Plan (Attachment A) includes additional detail on the administrative and functional elements of the VMT Mitigation Bank.

The concept of applying a mitigation bank as a tool to mitigate CEQA to transportation projects is novel. Metro is poised to be the first agency in the state to successfully stand up this innovative mitigation structure.

Pilot Term

The initial pilot term of this effort will not be temporal but instead be based on the application of the Program to a minimum of one highway project and one ExpressLanes project. The earliest available projects with induced travel impacts to mitigate will be selected for the pilot. This pilot term should not be construed to impose any mandate to deliver a single project on the SHS. Such decisions are exclusively the province of the Board of Directors. The intention of aligning a pilot term to the delivery of two distinct project types is simply due to the fact that ExpressLanes generate ongoing revenues, which may or may not affect the selection and delivery of mitigation actions.

In terms of specific performance metrics, staff will measure success according to:

- How mitigations meet stakeholder expectations and needs (particularly in EFCs),

- Local public agency satisfaction with process and outcomes,
- Project Manager satisfaction with process and outcomes,
- VMT Mitigation Bank Administrator satisfaction with process and outcomes,
- Timeliness of delivery of mitigations,
- Administrative cost to operate and maintain the Bank,
- Consistent and reliable feedback from our CEQA lead in Caltrans, and
- Potential to apply the Bank concept to additional Metro goals.

Staff will evaluate and report the effectiveness of the Program in annual updates to the Board, which will also include VMT Mitigation Bank transactions, mitigation status, investments in EFCs, successes and challenges, and any forthcoming projects on the SHS that may require mitigation. These annual reports will document the effectiveness of the Program for both Metro Highway and ExpressLane projects including documenting any new research and published literature on the subject.

Stakeholder Engagement

Great care was taken from the outset of our engagement process to ensure that our project team used accessible language and commonplace analogies to explain highly technical concepts whenever possible. The material was presented in an accessible and iterative fashion where each engagement session was recapped and then built on prior discussion. The initial engagement began with simple framing questions, such as the type of mitigation actions Metro should consider, which was followed with engagement on how best to evaluate mitigations, and finally moved into more complex questions about the best program framework to deliver these mitigations.

Stakeholder engagement was undertaken across a variety of forums: virtual community engagement meetings, Metro advisory bodies, Policy Working Group meetings, which included Council of Government Executive Directors and/or staff, transit operators, local public agency staff, staff from Caltrans and the California Air Resources Board, as well as several focused meetings with Caltrans and SCAG on very technical aspects of the program development. Engagement began in June 2022 and concluded in February 2024 with 26 stakeholder meetings held.

Feedback from stakeholders was received and incorporated through each stage of the project. Thematically, respondents supported mitigations that had the highest cost-effectiveness and near-term implementation. Most respondents indicated that prioritizing mitigations that benefit communities impacted by transportation burdens should be a priority. Delivering mitigations in proximity to the project was also a key consideration for stakeholders. Lastly, the use of a VMT Mitigation Bank as a tool to mitigate induced travel impacts received broad support and received no objections. The full outreach summary is included as Attachment B to this report.

DETERMINATION OF SAFETY IMPACT

The proposed action has no adverse impact on the safety of Metro’s patrons or employees.

FINANCIAL IMPACT

The approval and implementation of the Pilot VMT Mitigation Program will have no immediate financial impact. Existing staff resources will be utilized in this initial pilot phase of initiating the program. Caltrans' new requirements to analyze and mitigate induced travel impacts of Metro highway and ExpressLanes projects will ultimately increase costs to those projects that add new road capacity, but those costs will be borne by individual projects, not by this program.

Impact to Budget

The approval of the Pilot VMT Mitigation Program is not anticipated to have any impact on the budget.

EQUITY PLATFORM

Staff has worked closely with the Metro Office of Equity and Race (OER) from the inception of the Program to understand and address the equity implications of the Program. This critical analysis has been conducted using OER's Pilot Equity Planning and Evaluation Tool (EPET) as the guide. Staff seeks to balance the economic, access, and mobility benefits of increased VMT with the intended Program outcome of reducing VMT burdens, including emission of air pollutants, collisions, and a built environment that can feel hostile for people traveling by non-auto modes.

The development of the Program aims to prioritize the ways in which Metro can influence people traveling to reduce their VMT but with the goal of ensuring that the Program does not create new inequities in who bears the burden of VMT reduction and who benefits from VMT-reducing mobility investments. Due to the built environment in LA County and the high cost of housing, vehicles greatly improve mobility for low-income individuals who cannot afford to live near their daily destinations. While the American Community Survey (ACS) year 2019 estimates indicate that most transit riders are low-income (80%), the ACS also shows that most low-income individuals drive (81% of low-income workers drive versus 7% who take transit), with highway improvements benefiting both automobile and transit users.

As a reminder, the tools created through this Pilot VMT Mitigation Program in no way usurp existing Metro stakeholder engagement practices. In fact, because Metro will be both a client and administrator of the VMT Mitigation Bank, Metro has the ability to exercise more discretion in the deployment of mitigations than is typically offered in a traditional VMT Bank structure. In terms of equity, this not only means more flexibility in the deployment of mitigations that meet community needs but also establishing as policy and practice that Equity Focus Communities will be priority recipients of mitigations whenever feasible and available. These mitigation decisions will not be done in a vacuum but in close collaboration with OER and community stakeholders.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The Pilot VMT Mitigation Program supports the implementation of the following Strategic Plan Goals:

GOAL #1: Provide high-quality mobility options that enable people to spend less time traveling

The mitigation actions available through this program focus on transit and active transportation improvements that potentially expand and improve existing services and/or existing infrastructure. Improvements to these services and infrastructure have the potential to enhance trip quality across networks as a result.

GOAL #4: Transform LA County through regional collaboration and national leadership

The research resulting from the Program expands local and regional knowledge of VMT measurement and mitigation. By initiating this effort, Metro not only stands to derive benefits from this innovative approach but also sets an example for other regional and local partners to learn, iterate, and improve upon. Throughout the development of this program Metro has and continues to engage in collaborative information sharing with Caltrans and peer agencies throughout the state.

ALTERNATIVES CONSIDERED

The Board may reject approval of the Pilot VMT Mitigation Program. This is not recommended as it may place in jeopardy the Caltrans Sustainable Transportation Planning Grant funds that made this project possible and would leave project managers without the requisite tools to streamline the analysis and delivery of potential VMT mitigations, thereby increasing the cost of analysis. Further, Caltrans, which has been a supportive partner in this program development, has taken a strong interest in the VMT Mitigation Bank as an opportunity to assess the potential for other regional agencies to undertake similar efforts. As the first agency in the State of California to stand up a VMT Mitigation Bank, Metro's initiative would offer learning opportunities for our public agency partners throughout the state who aspire to pursue similar work.

NEXT STEPS

Staff will begin the process of establishing the administrative functions, oversight, and annual reporting necessary to fully implement the VMT Mitigation Program. This will necessarily include continued engagement across Metro departments to ensure consistency in the application of agency best practices and close coordination with Caltrans to ensure continued concurrence on assumptions and methodologies utilized across mitigation tools. Staff will also continue to work with Caltrans to resolve differences related to VMT quantification methodologies. Annual updates will be provided to the Board on VMT Mitigation Bank transactions, mitigation status, investments in EFCs, successes and challenges, and any forthcoming projects that may require mitigation.

ATTACHMENTS

Attachment A - VMT Mitigation Bank Plan
Attachment B - Outreach Summary

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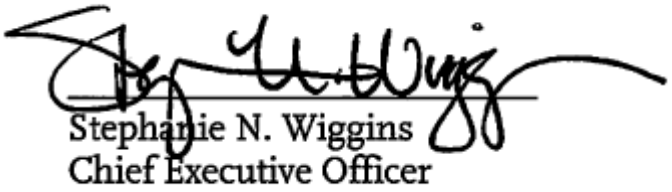

Stephanie N. Wiggins
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VMT Mitigation Bank Pilot Program

March 2024

Metro

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Executive Summary

Executive Summary

This Vehicle Miles Traveled (VMT) Mitigation Bank Plan (Bank Plan) is the final, implementation-focused deliverable resulting from a two-year effort to develop a VMT Mitigation Program (Program) for projects on the State Highway System (SHS) in Los Angeles County. The primary goal of the VMT Mitigation Bank is to provide a streamlined and defensible approach to mitigating the induced travel impacts of projects on the SHS through the development and sale of mitigation credits to offset increases in VMT. The premise of the Program, and by extension the Bank Plan, is that Metro can mitigate the potential induced travel impacts of Metro Highway and ExpressLanes projects by investing in Metro projects and programs that reduce VMT by a commensurate amount. Metro could also invest in VMT-reducing projects and programs implemented by public agency partners.

The concept of a mitigation bank as a tool to mitigate California Environmental Quality Act (CEQA) impacts is not new. But, to date, such banks have primarily focused on wetlands, habitat, or other natural resource restoration. The application to transportation projects, while rich in academic literature, is novel. So, while Metro is not the first agency in California to conduct a VMT Mitigation Bank study. Metro is poised to be the first agency to successfully launch this innovative mitigation structure.

In contrast to project-by-project VMT mitigation, the Bank Plan includes a structured and streamlined approach to quantify VMT reduction, estimate implementation costs, and offer packages of VMT reduction "credits" for purchase and implementation by project applicants. This creates an efficient pathway to invest VMT mitigation dollars directly into actions that reduce VMT, provide increased access to low-cost mobility options, and reduce local exposure to negative impacts of VMT such as air pollution and noise. In short, the Bank Plan creates a pathway to invest VMT mitigation dollars directly into Metro VMT-reducing projects and programs or those of Metro's public agency partners.

Stakeholder engagement was undertaken across a variety of forums: virtual community engagement meetings, Metro advisory bodies, and Policy Working Group meetings, which included Council of Government Executive Directors and/or staff, transit operators, staff from local agencies, Caltrans and the California Air Resources Board (CARB). Several focused meetings were also held with Caltrans and the Southern California Association of Governments (SCAG) on technical aspects of the program development. Engagement followed an iterative rubric: it focused first on the types of mitigations Metro should consider, then explored evaluation methodologies, and finally focused on how to design and implement a program that most effectively links and delivers mitigation measures.

For a mitigation to be considered eligible under this Program it must meet two eligibility criteria:

1. The mitigation must effectively reduce VMT. Mitigations that reduce greenhouse gases (GHG) alone are insufficient. Per CEQA, to mitigate induced travel, a mitigation must be effective at reducing VMT.

2. The VMT-reducing potential of a mitigation must be supported by substantial evidence. That means there must be an established evidentiary basis of the VMT-reducing potential of a given applied mitigation.

For the purpose of this study, Metro relied largely on the evidentiary basis provided by the California Air Pollution Control Officers Association (CAPCOA) 2021 Handbook, which is the most extensively documented compendium of VMT quantification methodologies based on peer-reviewed industry research available for California planning agencies to date. Finally, for this pilot, Metro focused on mitigations that were directly enforceable by Metro to ensure that mitigations are delivered. The pilot term is not temporal but will instead be based on the application of the tools to a minimum of one highway project and one ExpressLanes project.

A set of 15 Mitigation Actions were identified as suitable to be included in the Program based on the criteria of demonstrated effectiveness and enforceability by Metro, as well as additional criteria established through stakeholder engagement. These 15 actions were incorporated into the Metro VMT Mitigation Calculator, which is an Excel-based spreadsheet tool that estimates reductions in VMT resulting from the implementation of actions and is responsive to user-input parameters reflecting the specifics of the proposed

implementation.

From the full set of 15 actions, four Mitigation Actions were selected as pilot actions for the VMT Mitigation Bank:

> Metro Bus Service Frequency Improvements

> Metro Bus-Only Lanes

> Metro Joint Development

> Metrolink Service Expansion.

These four actions have been organized into implementation packages with associated VMT credit values, costs and "implementation packages"– or minimum units of purchase designed to ensure implementation of Mitigation Actions is possible with each purchase of VMT credits. Under this program framework, SHS project managers can purchase credits from the Bank to mitigate the VMT induced by their project without the need to conduct a lengthy VMT analysis for each discrete project. This streamlined process simplifies and standardizes VMT mitigation efforts, reduces redundancies of VMT mitigation analysis, and saves projects time and effort. This approach ensures mitigation dollars can be invested more expediently and in an incremental yet effective manner. By converting the mitigation actions into implementation packages, there is an assurance that with a single transaction (e.g. a credit purchase by a project sponsor of a project on the SHS) sufficient funding will be deposited in the Bank such that mitigation actions can be funded at a level that ensures implementation.

Introduction

This Report provides substantial evidence to support the creation of a VMT Mitigation Bank, including administration and structure, VMT crediting, monitoring and reporting.

Senate Bill 743, which was codified in Public Resources Code section 21099, required changes to the guidelines implementing CEQA regarding the analysis of transportation impacts (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.). Per the adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, generally no longer constitutes a significant environmental effect under CEQA (Pub. Resources Code, § 21099, subd. (b)(3).). Instead, projects are evaluated in terms of how much VMT they will induce. Mitigation of induced VMT attributable to highway capacity expansion projects on the SHS in Los Angeles County, in compliance with Caltrans' CEQA determinations led Los Angeles County Metropolitan Transit Authority (Metro) to explore a more efficient and effective method for reducing VMT. CEQA requires mitigation of induced VMT to the extent feasible, and mandates that mitigation actions be effective and enforceable[1]. Metro's Pilot VMT Mitigation Program (Program) offers a set of actions that are enforceable by Metro or a partner agency and designed with the local context in mind, and by extension are more likely to mitigate VMT.

Metro has spent the last 24 months working with Caltrans and other stakeholders to evaluate various VMT quantification tools, mitigation options, and program structures to assess the best fit for defensibly and consistently offering a mitigation approach to projects on the SHS. Through this collaborative effort, the following key decisions have helped shape the direction of this pilot Program.

 [1] CEQA Guidelines, § 15041

Key Program Framework Decisions

A voluntary Program is preferable to the current approach of project-by-project mitigation, which requires each project to individually identify, analyze, negotiate and coordinate implementation of mitigation actions and does not guarantee any consistency in the analysis of VMT reduction.

A Bank Program is preferred over a Mitigation Exchange Program for maximum effectiveness and flexibility. This allows SHS projects to purchase credits that contribute to a larger mitigation project rather than requiring a SHS project to rely solely on VMT reduction strategies that would be feasible to implement on an ad-hoc basis.

Equity is an important agency-wide goal and was extensively considered during the development of the Program. The project team considered a number of ways to encourage and/or require investment into equity-serving Mitigation Actions through this Program. The selection of Mitigation Actions was an important first step to ensuring equitable outcomes from this Program. The priority Mitigation Actions themselves are equity focused and therefore incentives to invest in Metro's Equity Focus Communities (EFCs) are inherent in the Mitigation Bank Program.

The Service Area for the Mitigation Bank Program should cover the entire County. Within the County, Subregional Planning Areas (SPA) as defined in Metro's Long Range Transportation Plan (LRTP) will serve as a basis for further geographic connection between the SHS project and the various Mitigation Actions.

A 20-year horizon for Mitigation Actions has been established.

VMT Mitigation Bank Overview & Goals

This VMT Mitigation Bank Crediting Plan has been prepared for Metro. The purpose of this document is to govern the activities required to establish mitigation credits for induced VMT impacts resulting from highway capacity projects on the SHS in Los Angeles County that are determined to induce VMT.


N I O N
S T A T I O N

The Goals of the Bank

- ***Provide a streamlined, effective and enforceable approach*** to mitigate VMT impacts from highway capacity projects on the SHS

- ***Develop and offer VMT mitigation credits*** to SHS projects

- ***Establish the credit values*** of mitigation projects and programs

- ***Identify procedures*** for the sale of credits, including debiting the credit table

- ***Establish oversight procedures*** to regularly evaluate the Program

The current approach of project-by-project mitigation requires each project to individually identify, analyze, negotiate and coordinate implementation of mitigation actions runs the risk of inconsistently analyzing how much VMT reduction can be achieved from mitigation action investments. The Banking model allows Metro to pre-plan mitigation efforts. In this structure, Metro can reduce project delays and risks associated with inconsistent VMT analysis, while ensuring that mitigation efforts are more aligned with Metro policy goals. The Mitigation Bank solution offers a menu of mitigation options to ensure a defensible and enforceable approach to VMT reduction.

The Mitigation Bank solution offers a menu of mitigation options to ensure a defensible and enforceable approach to VMT reduction.

Legal & Administrative Framework


EAST LA
1008

Legal Framework

The legal framework for a VMT Mitigation Bank relies on CEQA statutes and guidelines and, when relevant, the refinement of these statutes and guidelines through court cases. This Program was designed to meet the most up-to-date understanding of CEQA guidelines. Specifically, it was designed to be effective and enforceable.

Current legal expectations for developing, operating, and administering mitigation credit programs are defined by statutes, regulations, and past court decisions. As an example, the U.S. Army Corps of Engineers 2008 Mitigation Rule, published in the Code of Federal Regulations, lays out the framework for the national waters/wetlands Mitigation Bank program. The State of California passed Senate Bill 1148 (2012), which provides the legal foundation and regulatory framework for the State to participate in waters/wetlands mitigation banking. SB 1148 mirrors the documentation requirements of the federal 2008 rule. While a similar combination of federal and state laws does not yet exist for VMT mitigation programs, the proposed program has relied upon analogous laws and regulations in its development.

Only mitigation actions backed by evidence of effectiveness were included in this Program. Section 5 of this report provides the research basis supporting the effectiveness of each mitigation action included in the Pilot Program.

Because the Program is voluntary, there may be enforceability concerns surrounding a mitigation action which does not accrue sufficient funds to move into the implementation phase. To address this problem, VMT credits can only be purchased in quantities associated with "implementation packages" which are designed to ensure that the amount of funding received by any one purchase is sufficient to implement a Mitigation Action from the Bank. Packaging VMT credits and standardizing the implementing agency ensures that the actions in the bank are enforceable as well as being effective.

Administrative Framework

This section establishes the administrative framework and key roles for implementing the Program. Following the adoption of this Report, additional details may be necessary to move the Program concept to implementation.

Bank Sponsor

Metro is the Bank Sponsor and will be responsible for the planning, management and operation of the Program, as well as administration of credits to ensure sufficient funds are accumulated to implement Mitigation Actions. As Mitigation Actions are funded, the corresponding VMT credits are subtracted from the Bank ("debited") and assigned to the SHS project that purchased them ("credited"). Remaining available credits are updated accordingly. Metro will also be responsible for managing mitigation bank funds, which will require coordination with Mitigation Action implementers to align withdrawal and use of mitigation funds with geographic and equity goals of the Program.

Bank Service Areas

The Pilot Program will use the LA County boundary as the Bank Service Area. In other mitigation bank examples, Service Areas are based on other types of geographic boundaries. During the development of this Mitigation Bank, the project team deliberated the use of Metro's Subregional Planning Areas as Service Areas, based on their diversity of context, anticipated use of the Mitigation Bank based on SHS projects in the pipeline, and availability of various Mitigation Actions. Figure 1 shows the Subregional Planning Areas with EFCs identified. To preserve maximum flexibility during this pilot phase, the County will serve as the Service Area and the Bank Sponsor will work with both SHS project teams and Mitigation Action implementers to align geographies of the VMT impacts and the implementation of the Mitigation Actions. This allows local sponsors to choose which Mitigation Action credits to purchase with maximum flexibility (and therefore maximum investment in Mitigation Actions) while retaining some influence over the location where the Mitigation Actions are implemented.

Staffing

It is estimated that one project manager, one senior level planner or accountant and one administrative assistant with approximately 50% allocation to the Program's administration could maintain the Program. The duties of the Project Manager would include:

> Maintaining the Mitigation Credit table (described further below) to ensure no "double-dipping" across multiple SHS projects or other projects attempting to claim VMT mitigation credit

> Providing information to Metro staff on the program, including coordination with staff responsible for implementing Mitigation Actions

> Preparing and presenting Annual Program Reports

> Monitoring Mitigation Actions for consistency with the Program

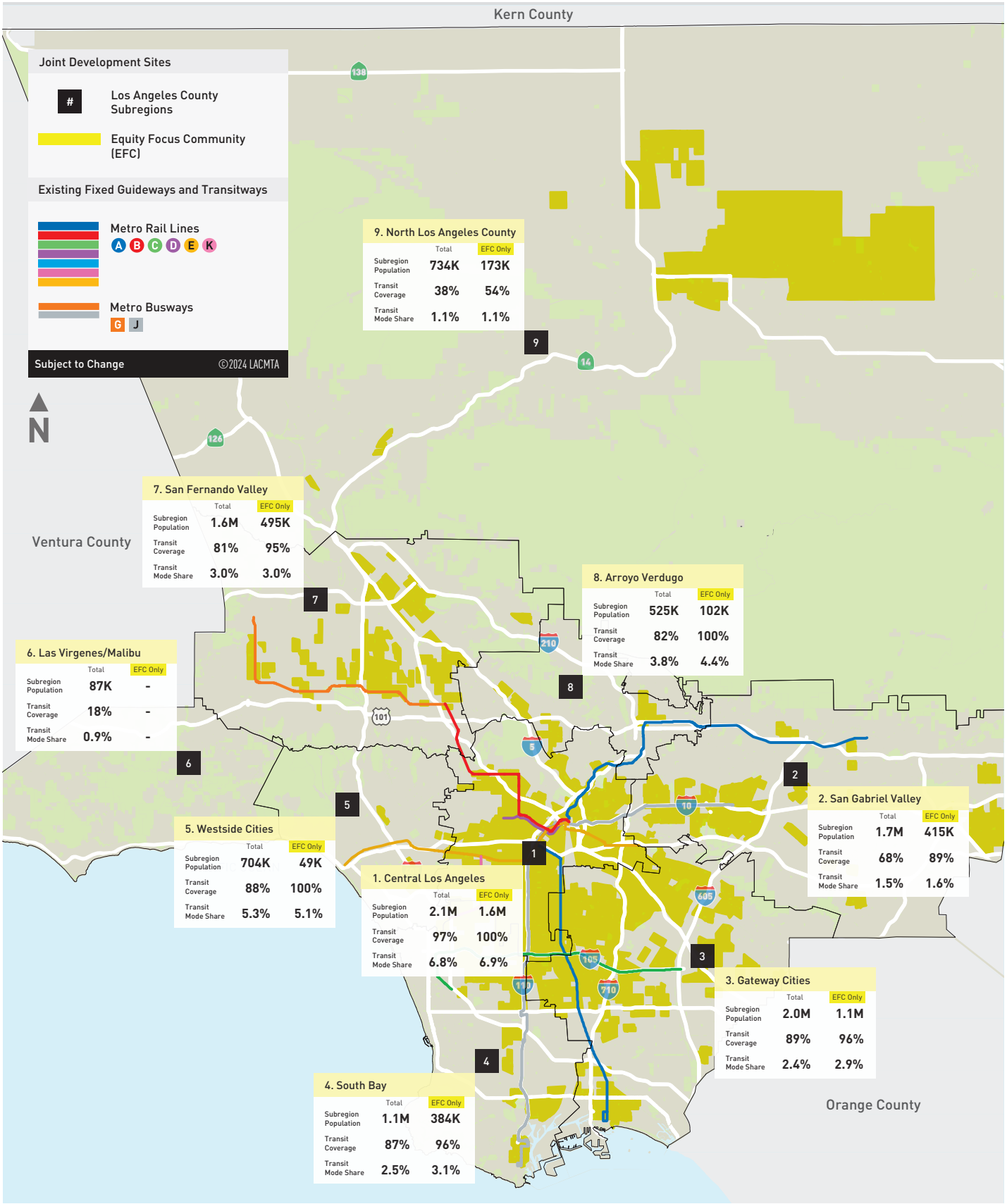
> Evaluating new Mitigation Actions

Estimated Costs For Administering The Program

Based on Metro salary and benefits information, the staffing described above is estimated to cost approximately $404,000 per year to administer the VMT Mitigation Banking Plan (2024 dollars). This cost includes salaries and benefits. This cost will be included in the cost calculation for each Mitigation Action. Administrative costs are estimated at 15% plus a 15% contingency, which should cover the staffing costs. If needed, the Administrative percentage can be adjusted if needed based on actual staffing costs and other administrative costs.

Additionally, planning, outreach and infrastructure costs are identified as one-time costs and would also be included in the Mitigation Action cost. Staff and as-needed consulting costs to create necessary Metro programming infrastructure for cost controls, mitigation credit payments, reporting templates and communication to member agencies about the program shall also be included in the one-time cost.

Figure 1. **Subregional Planning Areas**



"Transit coverage" is percent of households within 1/4 mile of a transit stop or in a Metro Micro service area. Transit mode share is from the SCAG activity-based model.

Monitoring & Reporting

The VMT Mitigation Bank Manager will monitor the timing of initiation of the Mitigation Actions as well as annual monitoring of the progress of each Mitigation Action. Development of performance metrics will be an initial responsibility of the Bank Manager.

Program data will be collected to support the development of an Annual Report that can include the following topics:

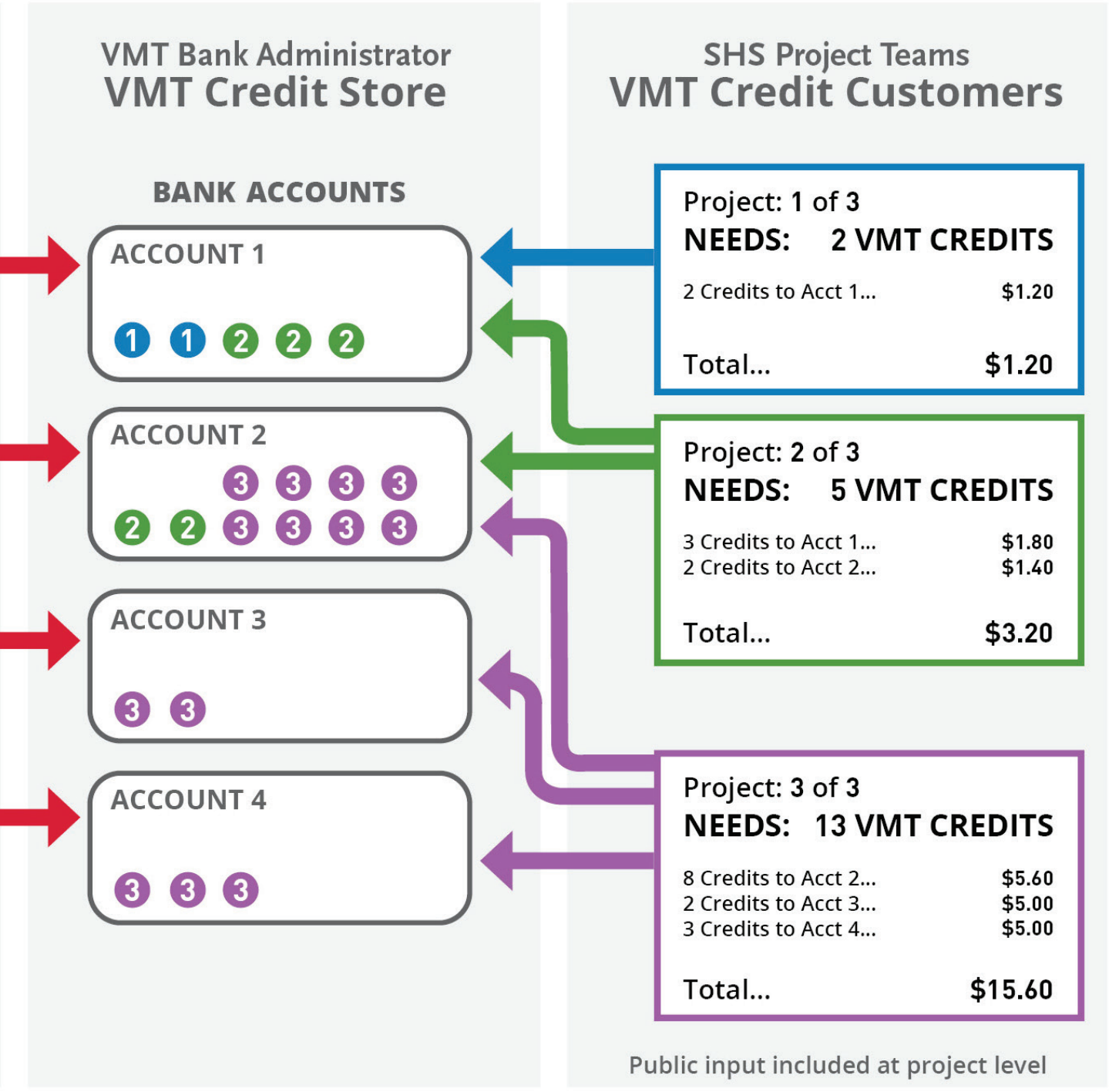
1. Current Mitigation Crediting Table
2. Cash on hand for each Mitigation Action
3. Status of each Mitigation Action
4. Projection of credits to be funded in the upcoming fiscal year
5. Reporting on Performance Standards for each Mitigation Action, including implementation relative to Equity Focus Communities
6. Any additional Mitigation Actions under consideration for addition to the Bank

Mitigation Action Completion

When a Mitigation Action has been fully funded, it will be removed from the Mitigation Credit Table. Unless otherwise specified, Mitigation Actions and the credit packages sold to fund them will have 20-year lifespans. The 20-year lifespan is intended to meet the mitigation obligations related to induced demand and align with the horizon year of current regional planning efforts. Annual progress reports will be prepared to provide transparency on Mitigation Action performance standards are being achieved.

This diagram shows how a VMT Mitigation Bank model is structured. Mitigation Action implementers can sell VMT "credits" based on the amount of VMT reduction and the cost for implementing the action. SHS project teams can then purchase the VMT credits. The transactions are facilitated by the VMT Bank Administrator, who manages the VMT "credit store" and accounts for each sale.

Figure 2. **Bank Model Framework**


VMT Bank Administrator
VMT Credit Store
BANK ACCOUNTS
ACCOUNT 1
1 1 2 2 2
ACCOUNT 2
3 3 3 3
2 2 3 3 3 3
ACCOUNT 3
3 3
ACCOUNT 4
3 3 3
SHS Project Teams
VMT Credit Customers
Project: 1 of 3
NEEDS: 2 VMT CREDITS
2 Credits to Acct 1... $1.20
Total... $1.20
Project: 2 of 3
NEEDS: 5 VMT CREDITS
3 Credits to Acct 1... $1.80
2 Credits to Acct 2... $1.40
Total... $3.20
Project: 3 of 3
NEEDS: 13 VMT CREDITS
8 Credits to Acct 2... $5.60
2 Credits to Acct 3... $5.00
3 Credits to Acct 4... $5.00
Total... $15.60
Public input included at project level

Mitigation Bank Projects

VMT Mitigation Bank projects were evaluated by the VMT Mitigation Program project team, using the CAPCOA GHG Emission Reduction Handbook, information from the SCAG Activity-Based Model (such as socio-economic data and travel demand data), and other published research.

In This Section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The Mitigation Actions to the right were identified through the development of program eligibility and evaluation criteria. Stakeholder input shaped the development of the evaluation criteria, and ensured alignment with Metro's overarching strategic goals: encouraging people to reduce single occupancy vehicle trips while providing mobility benefits across the County and supporting Metro's Equity Platform for EFCs. The Mitigation Actions range from educational programs and commuter programs to transit enhancements and active transportation projects and are detailed in the CAPCOA GHG Emission Reduction Handbook. The 15 Mitigation Actions were evaluated against the following evaluation criteria:

> Metro Direct Enforceability: the degree to which a mitigation is directly implemented and enforced by Metro.

> Expansion of Existing Programs: this generally correlates with lower implementation costs attributable to having administrative and organizational infrastructure in place.

> Cost Effectiveness: assessed on cost per VMT reduced.

> Scalability: can the mitigation be easily scaled up or expanded.

> Incorporation into a Highway or ExpressLanes Project: mitigations that can easily and directly be incorporated into the project are more efficient by avoiding separate implementation efforts, cost, and time.

> Speed of Delivery Timeframe: how quickly the mitigation can be delivered, with shorter implementation times more desirable than longer ones.

> Benefits to EFCs: does the mitigation provide direct benefits or otherwise better serve EFCs comparatively.

> Benefits to Populations Affected by VMT/Pollution Burdens: degree to which a mitigation may provide relief to burdened communities.

> Ease of Implementation: the degree of difficulty associated with inter-jurisdictional coordination required and infrastructure challenges like right-of-way acquisition.

Four Mitigation Actions were advanced to the Mitigation Bank, based on their alignment with the evaluation criteria.

Mitigation Action Toolbox

The following Mitigation Actions were identified as eligible and enforceable actions that would be available to mitigate induced VMT impacts resulting from highway capacity projects on the SHS. Any of these Mitigation Actions are available to use outside the framework of the Mitigation Bank, as they have been determined to be effective and enforceable through an initial review and analysis. Four of these actions have been further analyzed and assembled into implementation-ready packages of VMT credits, for streamlined incorporation into the Bank (described further below and noted in bold italics in the list on this page). If a SHS project team prefers not to purchase credit packages from the Bank, they can negotiate with Mitigation Action implementers directly for any of the tools in the toolbox. Once identified and negotiated, the SHS project team would need to develop and analyze an implementation approach using Metro's VMT Calculator, a customized spreadsheet tool developed through this project, to produce consistent, defensible, quantified VMT reductions specific to LA County.

Metro Actions

1. Provide Bus Rapid Transit
2. ***Provide Metro Bus-Only Lanes***
3. ***Increase Metro Bus Service Frequency***
4. Extend Metro Bus Network Coverage/ Hours
5. Expand Metro Micro
6. Implement Subsidized or Discounted Transit Program (UPass)
7. Implement Subsidized or Discounted Transit Program (Employer Pass)
8. Implement Commute Trip Reduction Program (Employer Commute Support)
9. Implement Community Based Travel Program (TDM Master Plan – Residential Programs)
10. Implement E-Bike Subsidy Program
11. Implement Electric Bikeshare Program
12. Implement Pedal (Non-Electric) Bikeshare Program
13. ***Implement Housing (including Affordable Housing) on Metro Joint Development Sites***

Partner Agency Actions

14. ***Metrolink Service Expansion***
15. Implement South Bay Cities COG Local Travel Network

Pilot Bank Mitigation Actions

Based on the initial list, the following four Mitigation Actions were identified as the Pilot Mitigation Actions for the VMT Mitigation Bank Program. While all the above Mitigation Actions are eligible and enforceable, these four actions have been assembled into implementation-ready packages with associated VMT credit values, costs and minimum units of purchase. This approach addresses the concern that funding will accrue to a voluntary Mitigation Bank but not be spent in a timely manner. By converting the Mitigation Actions into implementation packages, there is a guarantee that with a single transaction, sufficient funding will be deposited in the Bank such that the Mitigation Action can be implemented.

The four Pilot Mitigation Actions are:

Metro Bus Service Frequency Improvements

Metro Bus Only Lanes

BUS SERVICE FREQUENCY

SALE!

$1.2 MILLION

Annually, for 20 years

3,100 RSH & 1 BUS	490K VMT	$2.60 PER VMT

BUS ONLY LANES

SALE!

$479,000

Annually, for 20 years

15 BUS-ONLY LANE MILES	2.28M VMT	$0.21 PER VMT

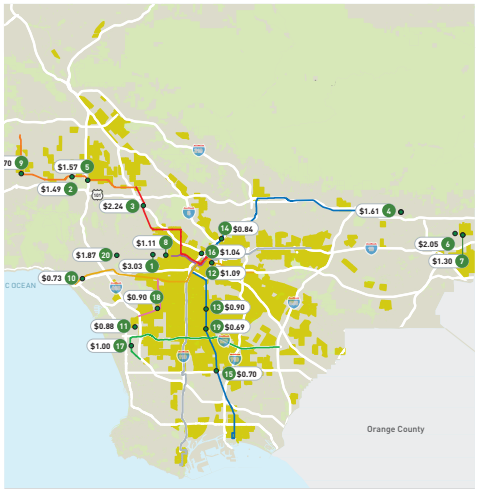
Figure 3. **Mitigation Action "Package" Price Tags**

Prices reflect the minimum unit of implementation required to offset the associated VMT for each Mitigation Action, described further in the pages that follow

Images via The Source

Table 1. **Subregional Alignment**

Pilot Bank Actions	South Bay Cities	Gateway Cities	Central	Westside Cities	San Gabriel Valley	Arroyo Verdugo	San Fernando Valley	Las Virgenes Malibu	North County
INCREASE BUS SERVICE FREQUENCY	✓	✓	✓	✓	✓	✓	✓		
IMPLEMENT BUS-ONLY LANES	✓	✓	✓	✓	✓	✓	✓		
METRO JOINT DEVELOPMENT	✓	✓	✓	✓	✓		✓		
METROLINK SERVICE EXPANSION		✓	✓		✓	✓	✓		✓



Metro Joint Development Projects

Metrolink Service Expansion

JOINT DEVELOPMENT UNITS

$16,200

SALE!

Annually, for 20 years

1 Dwelling Unit	8,165 VMT	$1.99 per VMT

METROLINK SERVICE

IN PROGRESS

SALE!

Forthcoming details from Metrolink

Metro Bus Service Frequency Improvements

Description

This action corresponds to enhancing and increasing service frequency on the Tier 2 bus lines (lines with 10-15 minute service) from Metro's NextGen Bus Plan to bring those lines closer to the frequency levels of Tier 1 bus lines (10-minute or better service throughout the day), by adding one more run per hour throughout the day or two more runs per hour for lines already at 10-minute service during peak hours. For example, lines at 15-minute service would be upgraded to 12-minute service and lines at 10-minute service in the peak hours would be upgraded to 7.5-minute service for those same hours. Increased bus frequency reduces waiting and overall travel times, which improves the user experience and increases the implied attractiveness of transit service. This results in a mode shift from auto travel to transit, which reduces VMT. For more information about Metro's NextGen Plan, please see https://www.metro.net/about/plans/nextgen-bus-plan/.

The VMT credits can be purchased by SHS projects in any subregion. VMT reduction credits from this mitigation action are generated from Metro Tier 2 bus lines which are located in the following subregions, and therefore have the closest geographic alignment with those subregions.

Central LA | San Gabriel Valley | Gateway Cities | South Bay | Westside Cities | San Fernando Valley | Arroyo Verdugo

Research Basis

The VMT quantification methodology for increasing Metro bus service frequency is based on CAPCOA strategy T-26 Increase Transit Service Frequency. Quantifying the VMT reduction potential from this mitigation action involves estimating the increased countywide transit ridership based on the following factors: percent increase in transit frequency, percent of countywide transit revenue service hours (RSH) being affected, and conversion parameters obtained from published industry research or the regional travel demand model (i.e., the SCAG 2020 RTP/SCS activity-based model). The parameters used here are:

> A statewide mode shift factor (FHWA, 2017)

> Elasticity of transit ridership with respect to frequency of service (Handy et al., 2013)

> Countywide transit mode share (SCAG model)

> Countywide auto mode share (SCAG model)

The estimated countywide percentage reduction in VMT is multiplied by the baseline countywide passenger-vehicle VMT to yield an estimate of the total VMT reduced, which become the VMT credits available in the Mitigation Bank for the implementation package(s).

Figure 4. **Metro Bus Service Frequency Improvements**

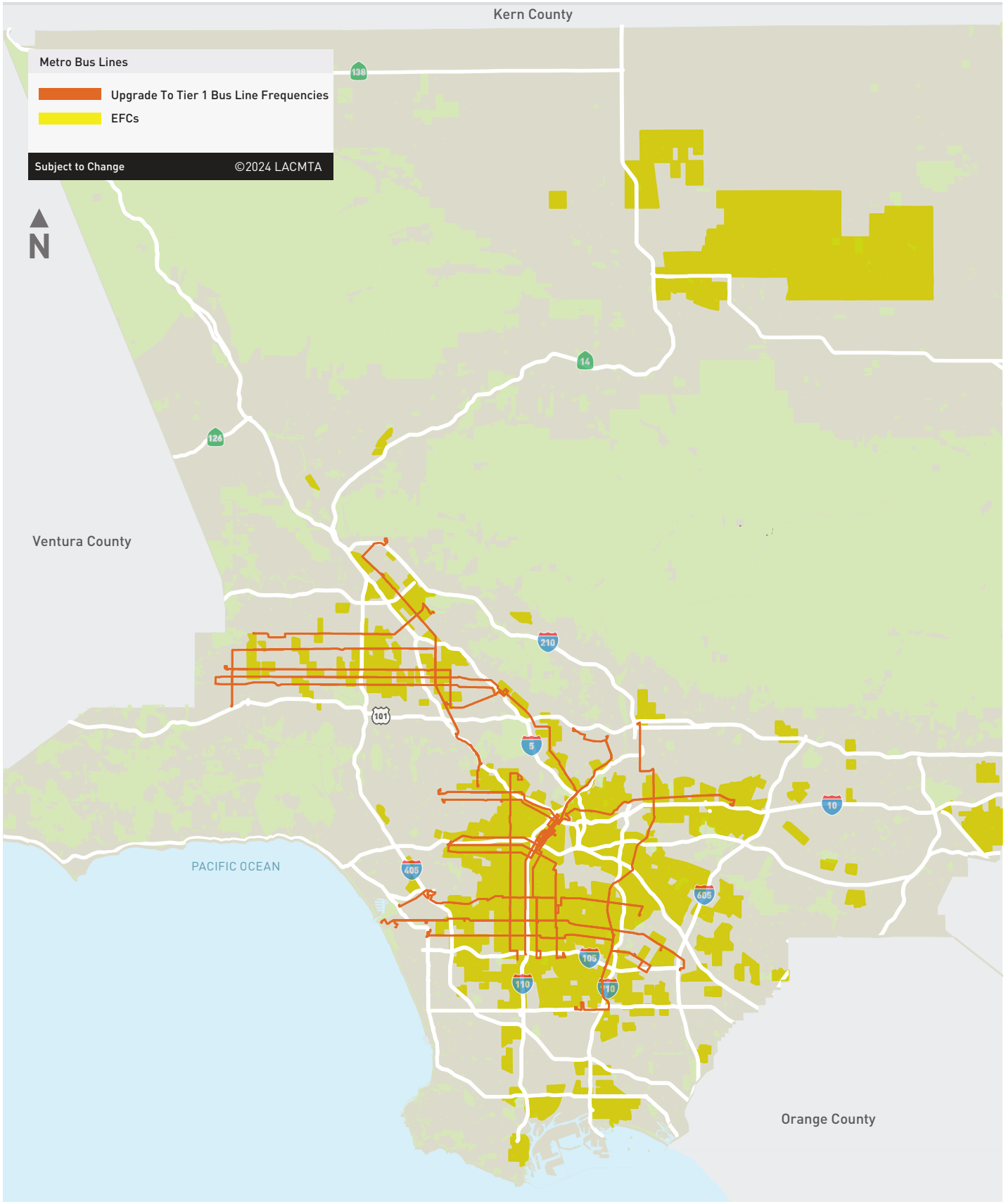


Table 2. **Tier 2 Bus Line Frequency Improvements**

ONE-TIME COST ESTIMATES	
ADDITIONAL FLEET NEEDED	89
COST PER NEW BUS	$1,600,000
TOTAL ONE-TIME FUNDING REQUIRED	$142,400,000
ANNUAL COST ESTIMATES	
ADDITIONAL WEEKDAY RSH	774.5
COST PER WEEKDAY RSH	$211.77
ANNUALIZATION FACTOR (CONVERTING FROM DAILY TO ANNUAL VMT)	355:1
ADDITIONAL ANNUAL RSH	274,938.9
TOTAL ANNUAL FUNDING REQUIRED	$58,223,815
LIFETIME COST ESTIMATES	
DURATION (YEARS)	20
YEAR-OVER-YEAR INFLATION (ANNUAL COST ONLY)	3.2%
ADMINISTRATION	15%
CONTINGENCY	15%
TOTAL LIFETIME FUNDING REQUIRED	$2,260,851,202
VMT ESTIMATES	
PERCENT INCREASE IN FREQUENCY ON AFFECTED LINES (BY RSH)	21.1%
PERCENT OF COUNTY LINES RECEIVING IMPROVEMENTS (BY RSH)	11.7%
TOTAL ANNUAL VMT REDUCED (2024)	43,538,390
TOTAL LIFETIME VMT REDUCED	870,767,800
VMT COST EFFECTIVENESS	
ANNUAL COST PER VMT	$2.60

VMT Credit Valuation & Implementation Packages

Increasing service frequency on all Metro NextGen Tier 2 bus lines by adding one more run per hour throughout the day or two more runs per hour for lines already at 10-minute service during the peak hours would reduce a total of **43.5 million annual VMT** (forecast year 2024). Based on information provided by Metro operations staff, this reduction would require roughly 275k additional annual Metro bus revenue service hours (RSH) and a one-time purchase of 89 new bus vehicles.

The estimated cost per unit of sale is **$2.60/annual VMT reduction credit**, with a total of 43.5 million annual credits available for sale. The total cost of implementing this Mitigation Action for 20 years is $2.26 billion.

The minimum unit of sale for this mitigation action is 490k annual VMT credits for a duration of 20 years, which translates to approximately 3.1k added annual RSH and 1 new bus. Bundles of frequency improvements by subregion or by line may be assembled as a mitigation but must include the capital costs for the associated number of new buses.

Metro Bus-Only Lanes

Description

Bus-only lanes refers to the conversion of general traffic lanes on local roadways to lanes marked for exclusive use by buses. This action corresponds to implementing bus-only lanes in both directions for all Tier 1 bus lines from Metro's NextGen Plan, independently of any associated service changes such as improved frequency. Providing dedicated bus-only lanes that allow buses to bypass the delays from traffic congestion can improve travel times and service reliability, which improves the user experience and increases the modal attractiveness of transit service. This results in a mode shift from auto travel to transit, which reduces VMT. By improving end-to-end travel times, bus-only lanes can also free up revenue service hours that may be redeployed towards higher frequency or greater geographic coverage on the same line(s) at minimal additional cost. Additionally, conversion of general traffic lanes to bus-only lanes reduces roadway capacity for auto travel, which can further incentivize transit use. These associated effects serve to further reduce VMT. Note, this Mitigation Action would need to be implemented in partnership with a local jurisdiction.

VMT reduction credits from this mitigation action are generated from Metro Tier 1 bus lines in the following subregions, and have the closest geographic alignment with those subregions. The VMT credits can be purchased by SHS projects in any subregion.

Central LA | San Gabriel Valley | Gateway Cities | South Bay | Westside Cities | San Fernando Valley | Arroyo Verdugo

Research Basis

The VMT quantification methodology for implementing bus-only lanes is based on CAPCOA strategy T-28 Provide Bus Rapid Transit but adapted based on Metro internal data. Quantifying the VMT reduction effect from this mitigation action involves estimating the increased countywide transit ridership based on improved travel times, upon the percent of countywide route miles (RM) being affected, and applying conversion parameters obtained from published industry research or the regional travel demand model. The parameters used here are:

- A statewide mode shift factor (FHWA, 2017).
- Percent change in transit ridership due to bus-only lanes (Metro staff; TRB, 2007)
- Percent change in transit travel time due to bus-only lanes (TRB, 2007)
- Elasticity of transit ridership with respect to transit travel time (TRB, 2007)
- Countywide transit mode share (SCAG model)
- Countywide auto mode share (SCAG model)

The estimated countywide percentage reduction in VMT is multiplied by the baseline countywide passenger VMT to yield an estimate of the total VMT reduced, which become the VMT credits available in the Mitigation Bank for the implementation package(s).

Table 3. **Metro Bus-Only Lanes on Tier 1 Bus Lines**

ONE-TIME COST ESTIMATES	
TIER 1 LINES LANE MILES	1,003.1
LANE MILES BUILT/UNDER CONSTRUCTION	97.8
REMAINING LANE MILES UNFUNDED	905.3
COST PER LANE MILE	$500,000
SUBTOTAL ONE-TIME COST	$452,656,431
LIFETIME COST ESTIMATES	
ADMINISTRATION	15%
CONTINGENCY	15%
TOTAL LIFETIME FUNDING REQUIRED	$588,453,361
VMT ESTIMATES	
PERCENT INCREASE IN FREQUENCY ON AFFECTED LINES	0.0%
PERCENT OF COUNTY LINES RECEIVING IMPROVEMENTS (BY	27.9%
TOTAL ANNUAL VMT REDUCED (2024)	137,334,361
TOTAL LIFETIME VMT REDUCED	2,746,687,220
VMT COST EFFECTIVENESS	
ANNUAL COST PER VMT	$0.21

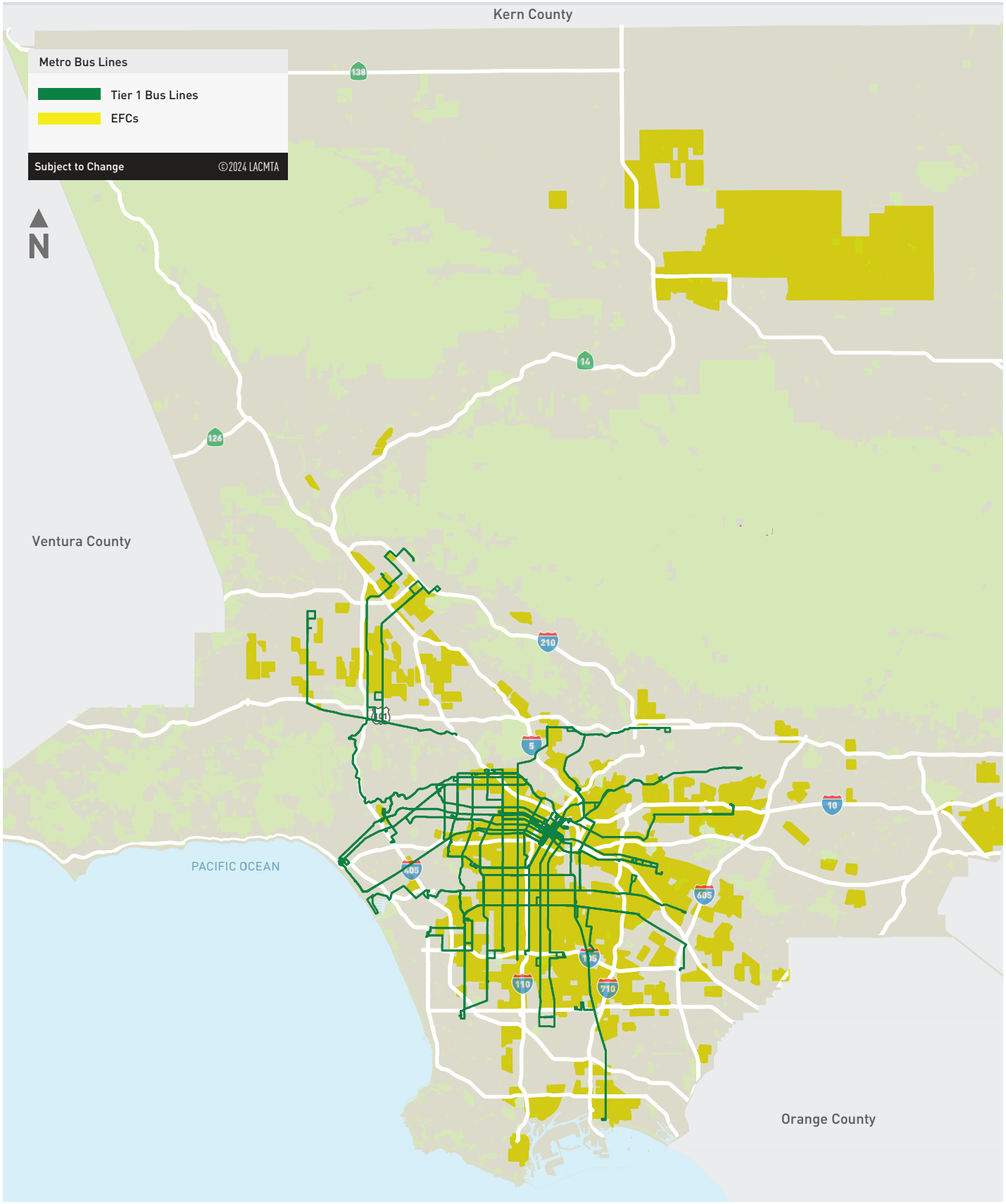
VMT Credit Valuation & Implementation Packages

Implementing bus-only lanes on all Metro NextGen Tier 1 bus route miles—beyond those which have already been implemented on such corridors as Wilshire Blvd. and Alvarado St.—would reduce a total of **137.3 million annual VMT** (forecast year 2024). Based on information provided by Metro operations staff, this reduction would require a one-time implementation of roughly 905 added lane miles of bus-only lanes.

The estimated cost per unit of sale is **$0.21/annual VMT reduction credit**, with a total of 137.3 million annual credits available for sale. The total cost of implementing this Mitigation Action for 20 years is $588.4 million.

The minimum unit of sale for this mitigation action is 2.28 million annual VMT credits for a duration of 20 years, which translates to approximately 15 added lane miles of bus-only lanes.

Figure 5. **Metro Bus-Only Lanes on Tier 1 Bus Lines**



Metro Joint Development

Description

This action corresponds to Metro's Joint Development program, a real estate development program for Metro-owned properties that prioritizes such land for housing development. Metro's policy goal is to add 10,000 dwelling units to its countywide portfolio by 2031, approximately half of which will be income-restricted. Metro's Joint Development staff have identified 20 sites—almost all located adjacent to Metro Rail stations—with capacity for approximately 7,500 new units, which will allow Metro to meet and surpass its goal. The 20 sites included in this program have been identified but not funded; gap funding is particularly critical as developers assemble funding packages to deliver housing in support of Metro's policy goals. This Bank provides a means by which Metro could provide the gap funding necessary to construct the housing.

The Metro Joint Development program reduces VMT in multiple ways. Increasing residential density decreases VMT in an area by decreasing the distance between homes and destinations like jobs and entertainment districts. Additionally, affordable housing typically generates less VMT per capita than market-rate housing. Increasing the density of housing near rapid transit further reduces VMT by increasing the transit mode share for new residential growth.

The VMT credits can be purchased by SHS projects in any subregion. VMT reduction credits from this mitigation action are generated from Joint Development sites which are located in the following subregions, and therefore have the closest geographic alignment with those subregions.

Central LA | San Gabriel Valley | Gateway Cities

South Bay | Westside Cities | San Fernando Valley

Research Basis

The VMT quantification methodology for supporting Metro Joint Development projects is based on CAPCOA strategies T-1 Increase Residential Density, T-3 Provide Transit-Oriented Development, and T-4 Integrate Affordable and Below Market Rate Housing. A SHS project may mitigate its VMT by providing key gap funding for Joint Development developments on a per-dwelling-unit basis which will serve to reduce subregional VMT by increasing market-rate and affordable housing supply near transit hubs and increasing residential density at a local scale.

Quantifying the VMT reduction effect from this mitigation action involves estimating the reduction resulting from two separate sources: the percent VMT reduction for residents of the new development, and the percent VMT reduction for the adjacent community's existing residents. In turn, the percent VMT reduction for residents of the new development is calculated in two parts: the VMT reduction due to the new housing being near transit, and the VMT reduction due to the development containing income-restricted units. Each of these components applies conversion parameters obtained from published industry research or the regional travel demand model. The parameters used here are:

> The minimum percentage of each development's units that are income-restricted (see the Request for Qualifications which Metro released to developers in Aug. 2023)

> Percent reduction in VMT for affordable units compared to market-rate units (ITE, 2021)

> Elasticity of VMT with respect to residential density (Stevens, 2016)

> Ratio of transit mode share for TOD compared to existing mode share in subregion (Lund et al., 2004)

> Number of households in same zone as each development (SCAG model)

> Countywide transit mode share (SCAG model)

> Countywide auto mode share (SCAG model)

The estimated total reduction in VMT is the sum of the VMT mitigated from each of these components, which becomes the VMT credits available in the Mitigation Bank for the implementation package(s).

VMT Credit Valuation & Implementation Packages

Funding approximately 7,500 Joint Development sites would reduce a total of **60.8 million annual VMT** (based on the forecast year 2024). Metro Joint Development staff estimate that the present average funding gap per dwelling unit across the Joint Development program is $250,000 per unit. This would be offered to a developer to enable assembly of other funding sources needed to construct the site. The estimated cost per unit of sale is **$1.99/annual VMT reduction credit**, with a total of 60.8 million annual credits available for sale. The total cost of implementing this Mitigation Action for 20 years is $2.42 billion.

The minimum unit of sale for this mitigation action is 8,165 annual VMT credits for 20 years, which translates to gap funding for 1 dwelling unit.

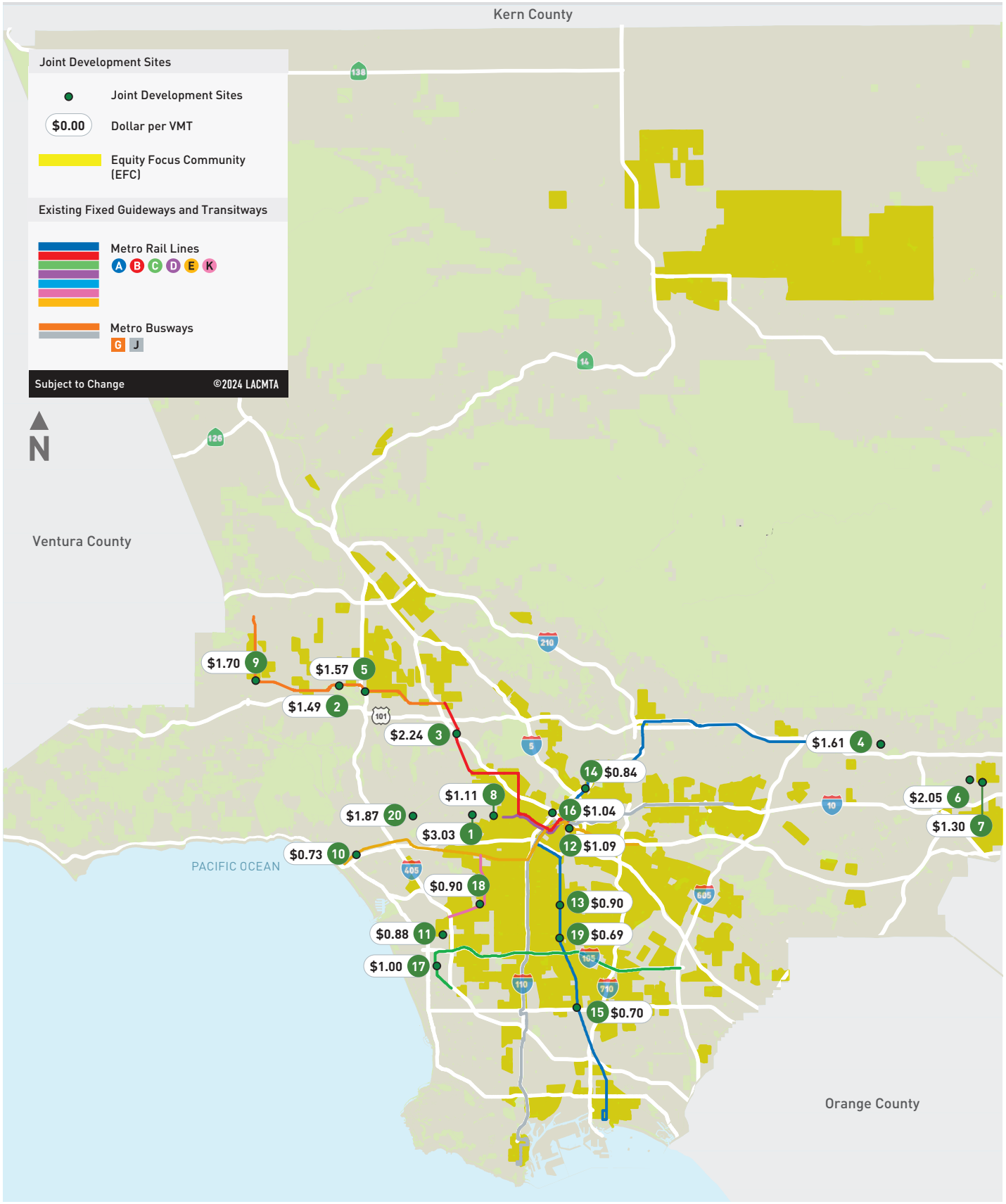
Table 4. **Joint Development Program**

ONE-TIME COST ESTIMATES	
TOTAL DWELLING UNITS TO SUBSIDIZE (20 JD SITES)	7,457
FUNDING GAP PER DWELLING UNIT	$250,000
SUBTOTAL ONE-TIME COST	$1,864,250,000
LIFETIME COST ESTIMATES	
ADMINISTRATION	15%
CONTINGENCY	15%
TOTAL LIFETIME FUNDING REQUIRED	$2,423,525,000
VMT ESTIMATES	
PERCENT UNITS AFFORDABLE (BY SITE, RANGE)	25-100%
TOTAL ANNUAL VMT REDUCED FROM AFFORDABILITY	15,546,813
TOTAL ANNUAL VMT REDUCED FROM TOD	20,015,461
TOTAL ANNUAL VMT REDUCED FROM INCREASED RESIDENTIAL DENSITY	25,322,016
TOTAL ANNUAL VMT REDUCED (SUM)	60,884,290
TOTAL LIFETIME VMT REDUCED	1,217,685,797
VMT COST EFFECTIVENESS	
ANNUAL COST PER VMT	$1.99

Table 5. **Joint Development Sites**

	Development Sites	Estimated Dwelling Units per Site	Annual VMT Reduced	Total VMT Reduced	Cost (Funding Gap)	$/VMT
1	Wilshire/La Brea	1,659	6,846,685	136,933,702	$414,750,000	$3.03
2	Balboa/Victory	1,152	9,633,874	192,677,471	$288,000,000	$1.49
3	Universal City/Studio City	842	4,693,266	93,865,325	$210,500,000	$2.24
4	Glendora	631	4,909,760	98,195,210	$157,750,000	$1.61
5	Sepulveda	533	4,231,293	84,625,863	$133,250,000	$1.57
6	La Verne	411	2,502,497	50,049,933	$102,750,000	$2.05
7	Pomona	350	3,376,597	67,531,945	$87,500,000	$1.30
8	Wilshire/Crenshaw	217	2,454,711	49,094,212	$54,250,000	$1.11
9	Canoga Park	193	1,417,198	28,343,950	$48,250,000	$1.70
10	17th St/SMC	190	3,245,358	64,907,169	$47,500,000	$0.73
11	Aviation/Century	187	2,658,062	53,161,243	$46,750,000	$0.88
12	Pickle Works	182	2,095,862	41,917,232	$45,500,000	$1.09
13	Florence	167	2,324,813	46,496,262	$41,750,000	$0.90
14	Heritage Square	157	2,346,286	46,925,712	$39,250,000	$0.84
15	Artesia	140	2,513,253	50,265,054	$35,000,000	$0.70
16	Temple/Beaudry	119	1,426,300	28,526,006	$29,750,000	$1.04
17	El Segundo	109	1,356,980	27,139,590	$27,250,000	$1.00
18	Fairview Heights	78	1,084,243	21,684,866	$19,500,000	$0.90
19	103rd St/Watts Towers	73	1,319,551	26,391,028	$18,250,000	$0.69
20	Century City	67	447,701	8,954,024	$16,750,000	$1.87

Figure 6. **Joint Development Sites**



Metrolink Service Expansion

Description

This action corresponds to increasing service frequency and time-of-day span in accordance with Metrolink's Service Growth Development Plan (SGDP), which is currently in the final stages of development. Increased regional rail frequency reduces waiting and overall travel times, which improves the user experience and increases the modal attractiveness of transit service. In particular, the Metrolink SGDP service improvements are intended to enable cross-regional travel in non-peak directions during times of day when such travel was not previously feasible. These incentives result in a mode shift from auto travel to transit, which reduces VMT.

This initial implementation package is for informational purposes only, and cannot be sold for VMT credits until Metrolink staff have formally developed their preferred implementation package. Once the Mitigation Action becomes available, a SHS project sponsor can opt to mitigate VMT by contributing funding towards the service expansion along one or several Metrolink lines.

The VMT credits can be purchased by SHS projects in any subregion. VMT reduction credits from this Mitigation Action are generated from Metrolink lines present in the following subregions, and therefore have the closest geographic alignment with those subregions.

Central LA | San Gabriel Valley | Gateway Cities

San Fernando Valley | Arroyo Verdugo | North LA County

Research Basis

The VMT reduction estimates for this Mitigation Action derive from Metrolink's internal analysis as part of their forthcoming SGDP, and they are based on a forecasted reduction of 23.6 VMT per additional ride generated by the additional rail service. The future annual ridership levels used to forecast the total VMT reduction reflect the Medium Growth Scenario from Metrolink's SGDP. As with the other Mitigation Actions featured here, these VMT reduction estimates include some VMT reduced from trips with one end outside L.A. County. Unlike the other Mitigation Actions, implementation packages for Metrolink Service Expansion include service enhancements to be implemented at least partially outside the county. This will require careful accounting to ensure once the VMT credits from this Mitigation Action are sold to a SHS project sponsor, they are not also sold to sponsors of projects outside LA County – this will be the responsibility of both Metro as the Bank Administrator as well as Metrolink as the Mitigation Action implementer.

Figure 7. **Metrolink Service Map**

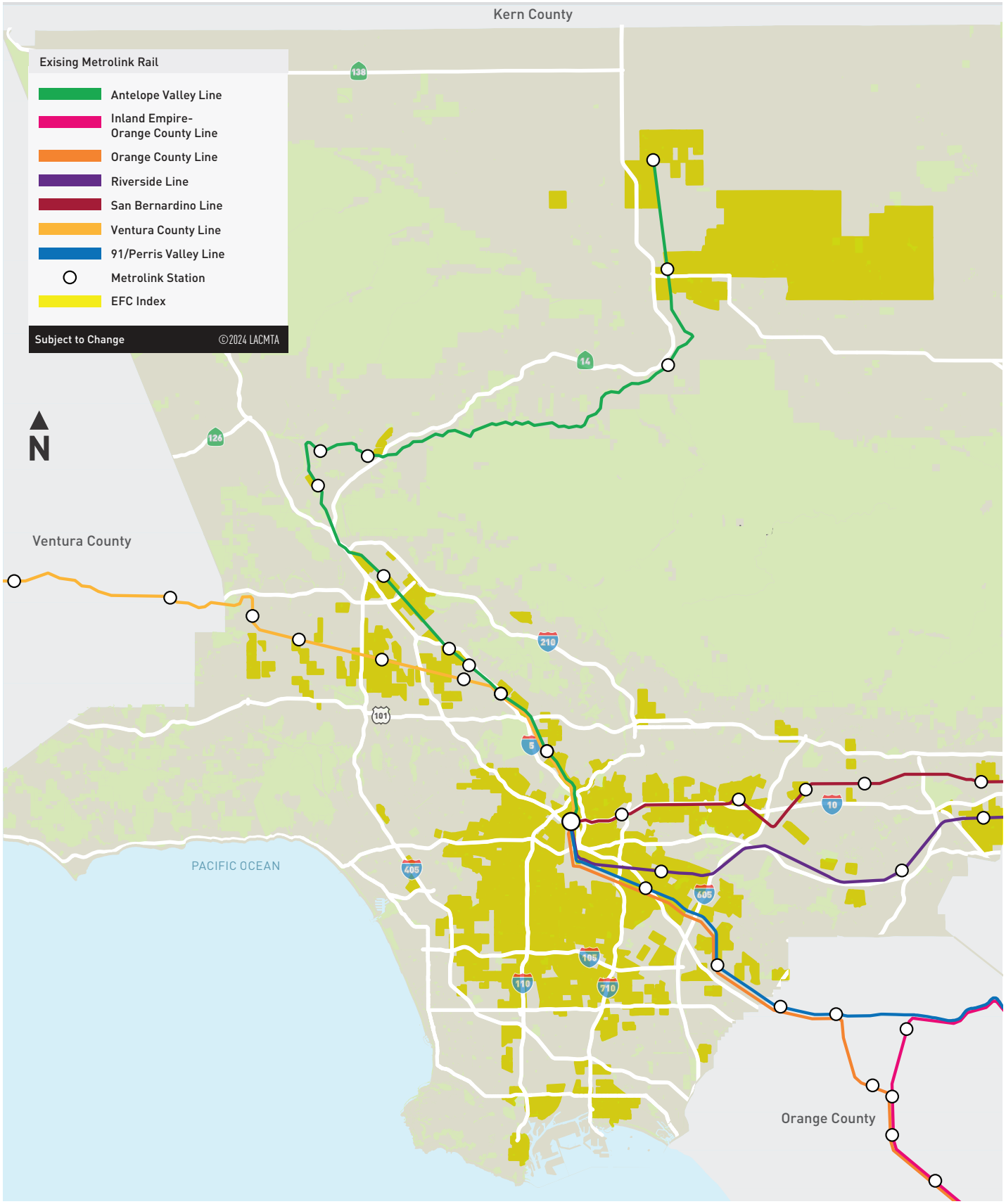


Table 6. **Metrolink Service Expansion**

ANNUAL COST ESTIMATES	
ANNUAL OPERATING SUBSIDY FOR BASELINE SERVICE (2019)	$293,392,617
ANNUAL OPERATING SUBSIDY FOR PROPOSED SERVICE (SGDP)	$330,808,685
TOTAL ANNUAL FUNDING REQUIRED	$37,416,068
LIFETIME COST ESTIMATES	
DURATION (YEARS)	20
YEAR-OVER-YEAR INFLATION (ANNUAL COST ONLY)	3.2%
ADMINISTRATION	15%
CONTINGENCY	15%
TOTAL LIFETIME FUNDING REQUIRED	$1,333,916,374
VMT ESTIMATES	
VMT AVOIDED PER RIDE	23.6
RIDERSHIP WITH BASELINE SERVICE (2028)	7,573,536
RIDERSHIP WITH PROPOSED SERVICE	13,185,089
VMT AVOIDED BY BASELINE SERVICE (2028)	178,583,975
VMT AVOIDED BY PROPOSED SERVICE	310,904,402
TOTAL ANNUAL VMT REDUCED (2028)	132,320,426
TOTAL LIFETIME VMT REDUCED	2,646,408,527
VMT COST EFFECTIVENESS	43,538,390
ANNUAL COST PER VMT	$0.50
VMT COST EFFECTIVENESS	
ANNUAL COST PER VMT	$0.50

VMT Credit Valuation & Implementation Packages

Implementing the Metrolink SGDP in full would reduce a total of **132.3 million annual VMT** (forecast year 2028). Based on information provided by the SGDP planning team, this reduction would require roughly 1.8 million added annual revenue service miles (RSM) or a 63% expansion of service systemwide.

The estimated cost per unit of sale is **$0.50/annual VMT reduction credit**, with a total of 132.3 million annual credits available for sale. The total cost of implementing this Mitigation Action for 20 years is $1.3 billion.

Note that Metrolink's Southern California Optimized Rail Expansion (SCORE) program is anticipated to implement the capital improvements necessary to enable these service enhancements, thus there is no one-time capital investment associated with this Mitigation Action. Instead, all the associated costs are assumed to be annual and related to service enhancements.

The minimum unit of sale for this Mitigation Action will be determined as a key next step by Metrolink, to ensure funding accrues in a minimum amount sufficient to support service improvements for a reasonable operating segment of their system.

Future Mitigation Actions

Future Mitigation Actions can be added to the Mitigation Bank as needed based on the success of the Pilot Program and the demand for additional VMT credits. It is envisioned that once 50% of the credits have been sold and the Mitigation Actions are meeting interim success standards, that the Mitigation Bank Manager will identify additional Mitigation Actions, based on future SHS project needs to ensure that mitigation credits will be available. Similarly, Metro may decide to expand the Bank Program to allow local agencies or developers to purchase VMT credits.

To add a future Mitigation Action to the Mitigation Bank, the Mitigation Bank Manager will be required to prepare a report outlining the Mitigation Action, including details of the proposed action, lifespan and success standards.

The Metro Board can approve the use of the Mitigation Bank by its member agencies or other public agency at any time. The Mitigation Bank Manager would need to bring the request to the Board through a simple Board Report.

Mitigation Bank Credit Tables

Mitigation Bank Credit Table

As described above, an annual cost per VMT credit will be established for each Mitigation Action in the Mitigation Bank, and for the Pilot Bank in its entirety. Each Mitigation Action will have a minimum number of VMT credits that must be purchased in a single transaction to ensure that funding is accruing to the Bank in amounts that can be spent implementing each Mitigation Action. Each Mitigation Action will have its own number of annual credits based on the VMT reduction possible associated with the implementation of the packages described above. Project VMT impacts are typically reported in terms of annual VMT, and will be translated to number of annual credits required to achieve full or partial mitigation and the number of years that are required to achieve full mitigation. Note, for the purposes of this study, we have assumed a 20-year cost basis for the Mitigation Actions, and a 20-year duration of required mitigation. If a future project requires a different duration of mitigation, the cost basis should be re-evaluated to ensure sufficient funding is provided to implement the Mitigation Action for the required duration. The Project's environmental documents will specify the necessary number of annual credits to be purchased and the number of years of mitigation required. For example, if a SHS project is determined to have an impact of 10 million annual VMT for a duration of 20 years, the project sponsor could select a Mitigation Action with 10 million annual VMT credits available, multiply the total number of annual credits by the annual cost per VMT, and multiply this total by 20 years to derive the total VMT credits and total cost. Table 7 shows an example VMT Mitigation Bank Credit Table, outlining the total number of credits available for each Mitigation Action. Credits that are purchased by each SHS project would be documented in the right-most three columns, itemizing the number of annual credits purchased, the name of the SHS project making the purchase, and the date of the transaction.

Table 7. **Metro VMT Mitigation Bank Credit Table**

Mitigation Action	# of Credits (millions)Annual Credits Available	# of Credits Debited	Name of SHS Project Receiving Debits	Date of Debits
Increase Metro Bus Service Frequency	43,538,390	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*
Implement Metro Bus-Only Lanes	137,334,361	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*
Implement Housing on Metro Joint Development Sites	60,884,290	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*
Expand Metrolink Service	132,320,426	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*	*To be filled in when credits are purchased*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Eligible Costs

In This Section

> One Time Implementation Costs

> Ongoing Implementation Costs

> Other Costs


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The cost of implementing the Mitigation Actions has been estimated as described above for the purposes of deriving a cost/annual VMT reduction credit for each Mitigation Action. The four Mitigation Actions included in the Bank are all expansions of existing programs, which benefit from longstanding organizational investment in planning, management, and implementation of each of the Mitigation Actions (running Metro buses and Metrolink trains, partnering to implement bus-only lanes, and establishing housing on joint development sites). Therefore, Mitigation Bank enjoys a "marginal cost" benefit; estimated costs of expanding existing programs are lower on a per-VMT basis than emerging practice has shown across the State of California to date. Details on the approach to deriving the costs are further elaborated below.

One Time Implementation Costs

Planning

Implementers of the four Mitigation Actions have already undertaken processes to determine how their programs might expand if additional funding were unlocked both before the Mitigation Bank was initiated, as well as through the process of developing the Mitigation Bank. Part of the selection process for the Mitigation Bank's Mitigation Actions was to determine Mitigation Action implementers' readiness to receive and spend mitigation dollars. Therefore, for this Pilot Mitigation Bank, no additional planning costs are anticipated.

For any future Mitigation Action that is a fully new activity, or demands new planning efforts to be undertaken, those planning costs will be identified and attributed to each Mitigation Action. These costs will include program establishment and approval costs.

Management

Bank staff will be required to coordinate with implementers to manage the Bank's Mitigation Actions to track performance and report annually. Any additional administration or management costs required to implement Mitigation Actions are eligible costs under the Mitigation Bank. At this time, none of the Mitigation Action implementers anticipate additional management costs resulting from implementation of the Mitigation Action.

Capital/Construction

The following capital costs have been included in each Mitigation Action's cost estimate.

> **Increase Metro Bus Service Frequency**: procurement of additional buses to support additional service

> **Implement Metro Bus-Only Lanes**: construction of bus-only lanes, estimated on a per-mile basis and inclusive of signing, striping, pavement resurfacing, transit signal improvements, bus stop/shelter improvements, and other similar capital costs

> **Implement Housing on Metro Joint Development Sites**: cost is derived based on gap funding on a per-dwelling-unit basis. While this may be used for construction or capital outlay, the gap funding will be delivered in the form of a per-unit subsidy to the site developers

> **Expand Metrolink Service**: no capital costs are included, though the service improvements would be enabled by the SCORE program of capital improvements, funded through other funding streams.

Ongoing Implementation

Operation

The duration of mitigation and the number of years of operation should be aligned with the duration of the impact that is being mitigated. The Mitigation Action costs have been based on a 20-year horizon and assume that mitigation will be required for 20 years. The following operational costs have been included in each Mitigation Action's cost estimate.

> **Increase Metro Bus Service Frequency**: cost of delivering additional revenue service hours on Tier 2 bus lines

> **Implement Metro Bus-Only Lanes**: no operating costs are included

> **Implement Housing on Metro Joint Development Sites**: no operating costs are included; any operating costs of housing developments would be borne by the developer or building manager

> **Expand Metrolink Service**: cost of delivering additional rail service across Metrolink's service area

Maintenance

At this time, no maintenance costs have been assumed as part of the cost of delivering each Mitigation Action. Over time, this may be adjusted if there are unforeseen maintenance costs that change the viability of continuing to implement each Mitigation Action.

Other Costs

For each Mitigation Action, a lifetime cost has been developed to demonstrate the full cost of implementation for a 20-year duration. Lifetime costs include a 3.2% escalation factor to account for inflation. One-time costs described above are not subject to inflation. Lifetime costs also include a contingency factor of 15%, intended to cover unexpected costs of implementing each Mitigation Action, as well as an administrative factor of 15%, which is intended to cover the administrative costs of managing and administering the Bank.

Piloting the Bank


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CA 37363

Timing of Credit Purchases

Capital improvement projects on the SHS will analyze their impacts to VMT during the Project Approval & Environmental Document phase (PA&ED) phase, identifying the number of necessary Mitigation Bank credits for the project. The type of credits to be debited for the SHS project will be the discretion of the SHS project sponsor. The Mitigation Bank administrator may recommend purchase of specific Mitigation Action credits to complete funding for a Mitigation Action, align with the geography of the SHS project, or direct funding towards EFCs first. The Bank administrator, the SHS Project sponsor, and Caltrans together will make the final determination as to the type of mitigation credits purchased. As the lead agency, Caltrans would have the discretion to select other mitigation actions if this program design does not offer a feasible mitigation option.

Projects on the SHS often take four or more years to construct once PA&ED is complete. Mitigation credits should be purchased at the close of PA&ED, to ensure credit availability. Typically, a mitigation commitment between Caltrans and the SHS project sponsor would occur at the draft environmental impact report (DEIR) stage. The SHS project will not be completed for several years after PA&ED. Studies show that full VMT impact occurs in year ten of a project. Therefore, the purchase and implementation of mitigation credits to support the mitigation commitment would need to be fully in place within approximately 14 years. This timeframe is expected to provide ample time for a Mitigation Action to be fully funded and implemented.

Pilot Term & Evaluation

The initial pilot term of this effort will not be temporal but instead based on the application of the tools to a minimum of one highway project and one ExpressLanes project. Note, this term should not be construed to impose any mandate to deliver a single project on the SHS.

Following adoption of this Pilot Program Report, Metro staff will work to advance the Mitigation Bank through establishment of the administrative processes that will be require, including identifying staff and continuing to work with sponsors of projects on the SHS to further identify timing and magnitude of anticipated mitigation needs. Mitigation Bank staff will also continue to work with Mitigation Action implementers to coordinate on anticipated timing of funding. Finally, Metro will continue to coordinate with Caltrans as the lead agency of projects on the SHS to ensure the Mitigation Bank implementation aligns with Caltrans policies and CEQA guidelines.

Staff will measure success of the Pilot Mitigation Bank according to the following specific performance metrics:

> How mitigations meet stakeholder expectations and needs (particularly in EFCs),

> Local public agency satisfaction with process and outcomes,

> Project Manager satisfaction with process and outcomes,

> VMT Mitigation Bank Administrator satisfaction with process and outcomes,

> Timeliness of delivery of mitigations,

> Administrative cost to operate and maintain the Bank,

> Consistent and reliable feedback from our CEQA lead in Caltrans, and

> Potential to apply the Bank concept to additional Metro goals.

Regular updates will be provided to the Metro Board on VMT Mitigation Bank transactions, mitigation status, investments in EFCs, successes and challenges, and any forthcoming projects that may require mitigation.

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Metro VMT Mitigation Program

Engagement Summary

Project Name	Metro VMT Mitigation Program
Client	Metro
Contract Number	Con PS54330009 / TO PS81103-5433
Metro Project Manager	Paul Backstrom
Metro Project Consultant	Fehr & Peers
Project Manager	Chelsea Richer
Principal in Charge	Jeremy Klop
Associate in Charge	Anna Luo
Project Number	LA22-3343
Date	3/20/24
Version	1.0

Metro

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Table of Contents

Introduction

The Metro Vehicle Miles Traveled (VMT) Mitigation Program was a two-year long project that focused on identifying a VMT mitigation framework operated by Metro and supported by municipal agencies and partners. The program explored the ability for Metro and other countywide partners to reduce Metro led project-specific VMT Impacts on the state highway system (SHS).

Project Goals

At the outset of the project the following key goals were identified:

- Explore various VMT quantification options, including induced VMT and VMT reduction strategies
- Evaluate the VMT impacts of Metro's highway improvement projects
- Establish a VMT mitigation program (such as VMT Bank or Exchange) that meets the needs of projects on the State Highway System
- Integrate Equity Platform goals and process elements into the project & resulting VMT mitigation program

As part of the project an Outreach Plan was developed to organize and implement the engagement steps that would help successfully develop this program. The following is a summary of the engagement activities conducted by Metro staff and the consultant team that supported this project as well as the key input that helped shape the direction of the program's development.

Key Findings

- Many stakeholders identified cost effectiveness and near-term implementation as important components of prioritization criteria. These criteria were thoroughly evaluated at a countywide level to allow for an apples-to-apples cost comparison on a per-VMT-reduction basis. Furthermore, the project team convened several discussions with each individual mitigation action implementer to understand the "readiness" or the pace at which funding could be assembled and implemented in the near term.
- Geographic equality was identified as a concern that should be considered in program development. The project team evaluated the ability of potential mitigation actions to be implemented in each subregion of the County, aiming to assemble a toolkit and a prioritized list of Bank Actions that would allow mitigation dollars to be invested proximate to the impacts created by the SHS project. In addition, consideration was given to the Mitigation Actions that would meet Metro's equity goals both in terms of geographic areas designated as Equity Focus Communities, as well as in terms of population needs regardless of geography (e.g., individual income).
- Based on feedback received, a VMT Mitigation Bank with the ability to retain influence from subregional stakeholders was the preferred option. A Bank with Subregional Accounts was considered, but in the interest of keeping the Pilot as simple as possible, the project team opted to pursue a Bank without any additional layers of subregional analysis (as would be warranted for

Subregional Accounts), opting for a transparent and flexible approach that would still allow for subregional stakeholder input at the project level.

Report Overview

This remainder of this report is organized into the following sections:

- Engagement Plan Overview
- Engagement Activities
- Key Findings
- Appendices

Engagement Plan Overview

Engagement Goals

The following engagement goals were identified by the Project Team:

- Provide information on the development of the program and key decisions
- Learn about stakeholder priorities for ways to reduce VMT
- Solicit input on selecting and weighting criteria for evaluating VMT reduction options
- Solicit input on program framework
- Share the Draft Mitigation Program Framework and Approach

Establishing these goals early on helped Metro and the Project Team address the following key concerns:

- How does Metro balance equity goals, public health and GHG reduction goals, with other goals like congestion management, goods movement, mobility improvements, and infill development?
- How should Metro integrate the Equity Platform into this work and the project's outcomes?

Through the Outreach Plan developed as part of the project, the Project Team identified means to engage and provide project updates to the following audiences:

- **Standing Metro Committees, Councils, and Boards** – Sustainability Council, Technical Advisory Committee, Community Advisory Council, Metro Board Committees, and Metro Board
- **Project Development Team (PDT)** – key decisionmakers and policymakers involved in setting VMT policy for SHS projects
- **Policy Working Group (PWG)** – technical stakeholders and advocates interested in VMT policy, climate policy, and mobility
- **Other Interested Stakeholders** – public sector and private sector professionals, community organization representatives, and business organization representatives
- **Members of the Public**

Adjustments to the Original Engagement Plan

Some initial elements of the outreach plan changed in response to the changing needs of the project and feedback received during the outreach and engagement process. Since project inception, the following modifications occurred to accommodate changing project needs:

- **Project Development Team Meetings:** Four meetings were originally anticipated at the start of the project, and five meetings were ultimately convened, in addition to several 1:1 meetings with PDT stakeholders to discuss specific policy or methodology issues.
- **Policy Working Group Meetings:** 13 meetings were originally anticipated at the start of the project and were consolidated to eight meetings.
- **Stakeholder Meetings:** Six meetings were originally anticipated, which were consolidated to five meetings.

Many of the changes to the meetings were based on readiness of the content that was to be shared in each meeting, with additional time required to review some content and less time required to review and hear feedback on other content.

Key Stakeholders

To ensure Metro was able to connect with key stakeholders and organizations interested in VMT Mitigation, the Project Team developed a comprehensive list of key stakeholders to be engaged during the process. The following is a summary of those engaged during the project:

- **Project Development Team (PDT)** –key decisionmakers and policymakers involved in setting VMT policy for SHS projects
- **Policy Working Group (PWG)** –technical stakeholders and advocates interested in VMT policy, climate policy, and mobility
- **Other Interested Stakeholders** – public sector and private sector professionals, community organization representatives, and business organization representatives

A detailed list of the organizations and key stakeholders engaged as part of this project is provided in **Appendix A.**

Additional Outreach Activities

In addition to the engagement meetings held with the audiences described above, the project team also produced a Project Fact Sheet and Project FAQ intended to provide information to interested members of the public.

These materials are available at: https://www.metro.net/projects/vehicle-miles-traveled-vmt-mitigation-program/.

Engagement Activities

Stakeholder Engagement

Standing Metro Committees, Councils, and Boards

The following standing committees and councils were engaged at various stages of the VMT Mitigation Project:

- **Metro Technical Advisory Council:** The Metro TAC is convened periodically and was engaged within their standing schedule. TAC meeting attendance occurred in April 2022, September 2023, and April 2024 (forthcoming).
- **Metro Policy Advisory Council:** The Metro PAC is convened quarterly and was engaged to provide project updates. PAC meeting attendance occurred on June 14, 2022.
- **Metro Community Advisory Council:** The Metro CAC is convened on an ad hoc basis and was engaged to provide project updates. CAC meeting attendance occurred in July 2022.
- **Metro Sustainability Council:** Metro's Sustainability Council is convened six times per year. Sustainability Council meeting attendance occurred on July 9, 2021, September 9, 2022, September 8, 2023, and March 8, 2024.
- **Metro Planning & Programming Committee:** The P&P Committee meets monthly, with some exceptions due to Metro Board holidays. P&P Committee attendance will occur on April 17, 2024.
- **Metro Board:** The Metro Board meets monthly with some exceptions due to Metro Board holidays. Board meeting attendance will occur on April 25, 2024. In addition, the project team presented to the Board on July 27, 2023 and submitted a follow-up "Board Box" – an information briefing to the Board in writing –on September 20, 2023. The Board Box is available at: https://metro.legistar.com/LegislationDetail.aspx?From=RSS&ID=6354971&GUID=0C1FAA2A-C817-45C0-9FB8-10B737773530&FullText=1.

Project-Specific Engagement

Project Specific Engagement focused on close coordination with the Project Development Team (PDT) & Policy Working Group (PWG). Both the PDT and PWGs role within the project involved the following:

- Advising on the technical analysis, tool development, and related decisions,
- Informing on policy decisions related to the VMT Mitigation Program, and
- Shaping the outreach plan and approach

The following identifies key activities conducted by each of these groups.

Project Development Team

The Project Development Team was comprised of key decision-makers and policy authors at Caltrans, California Office of Planning and Research and the Southern California Association of Governments. This group of key stakeholders were tasked with providing technical expertise and advice pertaining to VMT

mitigation. Five meetings were convened with the Project Development team, discussing the following topics:

- **May 20, 2022:** Discuss the review and synthesis of plans, policy guidance, and methodology guidance
- **June 17, 2022**: Discuss options for selecting a VMT quantification methodology for Metro projects on the State Highway System
- **October 20, 2022**: Share results of Case Study examples developed to understand model sensitivity and project-specific differences that could be applied to the project list
- **February 13, 2023**: Determine the preferred VMT quantification methodology for Metro projects on the State Highway System; solicit input on the approach to VMT mitigation, including development of a VMT Mitigation Program
- **November 1, 2023**: Present and discuss the VMT Mitigation Calculator as a tool to quantify the VMT reduction potential of mitigation actions in Los Angeles County

Notes and presentations from these meetings can be provided upon request.

Policy Working Group

The Policy Working Group was comprised of Project Development Team members plus additional key stakeholders from:

- Metro Departments
- Interested Jurisdictional and Agency Partners
    - LA County Public Works
    - City of Pasadena Public Works
    - California Air Resources Board (CARB)
    - Ports of Long Beach and LA
    - Subregional Councils of Government
    - I-5 Joint Powers Authority
    - Los Angeles Department of Transportation (LADOT)
- Interested Non-Profit Partners
    - Climate Resolve
    - Auto Club of Southern California
    - Natural Resources Defense Council (NRDC)

Eight Policy Working Group meetings were convened to discuss the following:

1. **March 21, 2022:** Background on CEQA & VMT for Transportation Project and Overview of Metro's VMT Mitigation Program
2. **May 31, 2022:** Review of Existing Regulatory and Guidance related to VMT Estimation
3. **September 12, 2022:** Discuss approach to VMT mitigation action criteria, solicit input on mitigation action selection, and discuss equity criteria.

4. **January 17, 2023:** Discussions regarding definition of equity, VMT Mitigation Program Options (What, Who, Where), VMT Mitigation Program Design Options, and Quantification Approach Framework.
5. **March 21, 2023:** Shared information regarding what feedback has been received so far, Mitigation Action Criteria Overview, and facilitated a discussion regarding types of mitigation actions, level of project control, and type of framework for the program.
6. **August 8, 2023:** Shared VMT impact quantification methodology update, recapped Stakeholder Meetings 1 and 2, and provided an overview of VMT Mitigation Program Frameworks.
7. **September 27, 2023:** Shared the VMT Bank framework as the preferred Mitigation Program option and solicited input on implementation considerations.
8. **February 1, 2024:** Shared the priority mitigation actions to be included in the VMT Bank and packaged for sale; solicited input on implementation considerations.

Notes and presentations from these meetings can be provided upon request.

Public Engagement

To effectively conduct the public engagement component of the project, Metro hired MBI Media to support the project team and lead outreach and engagement. MBI focused on coordination of meetings, preparation of meeting materials, coordination of team review prior to meetings, and compilation of notes, and data after meeting completion.

Project-Specific Outreach

Over the course of nine months, the Project Team conducted a series of Stakeholder Meetings intended to share information regarding the project, including potential VMT reduction strategies, feedback received on potential VMT mitigation options, and to provide opportunities for stakeholders to communicate feedback directly to the project team. The following summaries highlight the activities conducted during these meetings.

Stakeholder Meeting 1 (May 16, 2023)

Provided information regarding the following topics:

1. Relevant Terminology (ensuring attendees knew what frequently used terms meant regarding the project).
2. Provided background on key policies and regulations creating the impetus for this project.
3. Shared the overall project goals.
4. Discussed equity and how it informs Metro project outcomes and process.
5. Conducted engagement activities that shared information on the development of the program and key decisions as well as opportunities to learn about stakeholder priorities for ways to reduce VMT.

Stakeholder Meeting 2 (June 13, 2023)

Provided information regarding the following topics:

1. Project Background (program goals and potential mitigation strategies).
2. Shared a recap of Stakeholder Meeting 1, which includes key themes focused on safety and security, more shared mobility options, neighborhood-oriented development options, fareless trips inclusion, clarification on highway projects roles and definitions.
3. Solicited input on selecting and weighting criteria for evaluating VMT reduction options.
4. Solicited input on program framework.

Stakeholder Meeting 3 (August 10, 2023)

Provided information regarding the following topics:

1. Project Background (program goals and potential mitigation strategies).
2. Stakeholder Meeting 1 and 2 Recap.
3. Solicited feedback on program framework (Options include VMT exchange, VMT bank, VMT reduction plan).

Stakeholder Meeting 4 (October 10, 2023)

Provided information regarding the following topics:

1. Project Background (program goals and potential mitigation strategies).
2. Stakeholder Meeting 1, 2, and 3 Recaps.
3. Policy Working Group 6 Feedback (identified feedback regarding the three VMT program options).
4. Provided an overview of feedback received from Metro Departments and Metro Board.
5. Provided an overview of VMT Mitigation Program Participants key interests and concerns and greater detail on how the different options would work.
6. Summarized the details of the VMT Bank Model including the option for subregional accounts, pre-determined mitigation action list, and program balance sheet.

Stakeholder Meeting 5 (January 30, 2024)

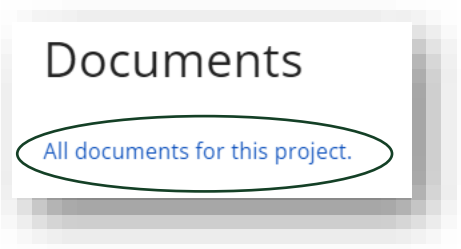
Provided information regarding the following topics:

1. Project Background (goals and potential mitigation strategies).
2. Summarized stakeholder feedback opportunities and where the project has ended up as a result of these activities.
3. Provided an overview of the VMT Mitigation Bank concept, types of actions potentially available, preliminary cost effectiveness and scalability, evaluation criteria, evaluation results, mitigation actions rankings, and mitigation bank implementation considerations.

Stakeholder Meeting Materials

The five PowerPoint presentations shared with meeting participants can be found on Metro's website at: https://www.metro.net/projects/vehicle-miles-traveled-vmt-mitigation-program/.

To access these files, navigate to the Documents section and click the hyperlink for "All documents for this project".



Key Findings

Stakeholder input was key to developing Metro's VMT Mitigation Program. The following key findings were shared by stakeholders during the above engagement events:

- A VMT Bank option has the greatest buy in to support mitigation throughout the region.
    - Respondents liked the flexible approach to meeting State Highway System needs and those of mitigation action implementers.
    - Stakeholders agreed that it provides a diverse set of actions to meet diverse countywide priorities.
- Feedback on the highest ranked mitigation actions focused on increasing service efficiency, expanding service operations and capabilities, and implementation of programs to support increased ridership and better alignment of development patterns and proximities to transit.
- Most respondents indicated that cost effectiveness and near-term implementation were important/very important.
- Most respondents indicated that prioritizing strategies that benefit communities impacted by transportation burdens was important/very important.
- During criteria development, ease of implementation was identified and added to the program evaluation.

Based on the importance of cost effectiveness and near-term implementation, these criteria were thoroughly evaluated at a countywide level to allow for an apples-to-apples cost comparison on a per-VMT-reduction basis. Furthermore, the project team convened several discussions with each individual mitigation action implementer to understand the "readiness" or the pace at which funding could be assembled and implemented in the near term.

Geographic equality was identified as a concern that should be considered in program development. The project team evaluated the ability of potential mitigation actions to be implemented in each subregion of the County, aiming to assemble a toolkit and a prioritized list of Bank Actions that would allow mitigation dollars to be invested proximate to the impacts created by the SHS project. In addition, consideration was given to the Mitigation Actions that would meet Metro's equity goals both in terms of geographic areas designated as Equity Focus Communities, as well as in terms of population needs regardless of geography (e.g., individual income).

Based on feedback received, a VMT Mitigation Bank with the ability to retain influence from subregional stakeholders was the preferred option. A Bank with Subregional Accounts was considered, but in the interest of keeping the Pilot as simple as possible, the project team opted to pursue a Bank without any additional layers of subregional analysis (as would be warranted for Subregional Accounts), opting for a transparent and flexible approach that would still allow for subregional stakeholder input at the project level.

Appendix A

Policy Working Group Members and Project Development Team Members

Note, some members of the Policy Working Group were not able to participate at every meeting, and some transitioned in and out during the two-year project duration. Project Development Team members are marked with an asterisk (*).

Policy Working Group Members		
Agency	**Department**	**Individual**
Metro	Complete Streets & Highways	Julio Perucho*
		Ernesto Chaves
		Carlos Montez*
		Lourdes Kriste
		Isidro Panuco
		Ricardo Corona
		Celine Chen
		Julia Brown
		Alice Tolar*
		Daniel Tran*
	Community Relations	Jefferson Isai Rosa
		Emily Cadena
	Shared Mobility (ExpressLanes)	Philbert Wong*
	Shared Mobility (ITS)	Steve Gota*
	ECSD	Heather Repenning*
	LRTP	Paul Backstrom*
		David Leyzerovsky*
		Mark Yamarone*
	TOC	Fabian Gallardo
	TDM	Martin Buford
		Jacquilyne Brooks de Camarillo
		Frank Ching
	State Policy and Programming	Michael Cano
		Zoe Unruh
	Equity & Race	KeAndra Cylear Dodds
		Naomi Iwasaki
	Technical Services Team	Robert Farley*

Policy Working Group Members		
Agency	**Department**	**Individual**
	Congestion Reduction	Mark Linsenmayer*
SCAG		Annie Nam
		Mike Gainor*
Caltrans HQ	Sustainability	Eric Sundquist*
		Chris Kuzak*
	Environmental	Kelly Dunlap
		Jeremiah Ketchum
	SB 743 Program	Charles (Muggs) Stoll*
	Traffic Operations	Zhongren Wang*
		Marlo Tinney*
Caltrans D7	Sustainability	Barbara Marquez
	Multimodal Corridor Planning	Paul Albert Marquez
	Environmental	Ron Kosinksi
		Ryan Snyder*
	Legal	Mark Berkebile
	Program & Project Management	Gregory Farr*
	Operations	Leila Khalkhali*
		Minh-Thu Ho*
	Advanced Planning/Modeling	Chao Wei*
State of California	OPR	Erik DeKok
		Leila Hakimizadeh*
		Shannon Clark*
		Brianne Masukawa
County of Los Angeles	Public Works	Kent Tsujii
		Jeffrey Pletyak
		Stephen Lamm
		Alvin Ly
City of Pasadena	Public Works	Conrad Viana
Port of Long Beach	Transportation Planning	Phillip Lee
		Shelby Michael
		Theresa Dau-Ngo
Port of Los Angeles	Goods Movement	Kerry Cartwright
COGs/JPAs	I-5 JPA	Yvette Kirrin
	Gateway	Karen Heit
	South Bay	Steve Lantz
	San Gabriel Valley	Stephanie Wong
	North County	Arthur Sohikian
	Arroyo Verdugo JPA	Laura Cornejo

Policy Working Group Members		
Agency	**Department**	**Individual**
	LVM	Terry Dipple
LADOT	Transportation Planning & Policy	David Somers
		Alexander Wikstrom
		Kimberly Venegas
		Rubina Ghazarian
Metrolink		Colicchio, Lisa
Auto Club	Government Affairs and Public Policy	Steve Finnegan
Climate Resolve	Deputy Director	Bryn Lyndblad
NRDC	Mobility and Climate Advocate	Carter Rubin

List of Stakeholders

The following is a list of the stakeholders that attended various meetings conducted during the outreach and engagement phase of the VMT Mitigation Project.

4 Bikes Bicycle Shop
AAA Southern California
Access Services
Active San Gabriel Valley
Adobo Velo
Adventist Health
AIDS LifeCycle
AIR at LACI
Alhambra Chamber of Commerce
Alliance for Community Transit Los Angeles (ACT-LA)
Altadena Town Council
America Walks
American Association of Retired Persons (AARP)
Amigos de Los Rios
Antelope Valley Conservancy
Antelope Valley Partners for Health
Antelope Valley Transit Authority
Arcadia Chamber Of Commerce
Arroyo Seco Foundation
Arroyo Verdugo Communities Joint Powers Authority
Arroyos and Foothills Conservancy
Arts District Los Angeles Business Improvement District (ADLA BID)
Asian Pacific Islander Forward Movement
Association of Pedestrian and Bicycle Professionals
Atwater Chamber of Commerce
AVS Consulting
Aztlan Athletics
Azusa Chamber of Commerce
Backroad Bicycles
Baldwin Hills Conservancy
Batiquitos Lagoon Foundation
Baycities Church - Lomita
Beach Cities Cycling Club
Beach Cities Cycling Club, South Bay
Beach Cities Transit
Bell Chamber of Commerce
Bellflower Chamber of Commerce
Better Earth Garden Design (begarden)
Beverly Hills Chamber of Commerce
Bicycle Angels
Bicycle Friends
Bicycle John's Santa Clarita
Bicycle Pit Stop
Bicycle Transit Systems
Big Blue Bus
Bike Shop Los Angeles
Bike Shop Santa Monica
Bikeable Communities
bikecar101.com
Black Girls Do Bike
Boyle Heights Chamber of Commerce
Boyle Heights Neighborhood Council
Boys & Girls Club of San Fernando Valley
Boys and Girls Clubs of Metro Los Angeles
Breathe Southern California
Brentwood Chamber of Commerce
Building Industry Association Los Angeles -Ventura Chapter (BIA-LAV)
Burbank Bike Shop
Burbank Chamber of Commerce
Bus Riders Union
Calabasas Chamber Of Commerce
California Association of Bicycling Organizations

California Bicycle Coalition
California Conservation Corps
California Department of Transportation (CALTRANS)
California Department of Veterans Affairs
California Environmental Justice Alliance
California Greenworks
California Transit Association
California Trucking Association
California Walks
Canoga Park – West Hills Chamber of Commerce
Canoga Park Business Improvement Association, Inc.
Carson Bicycle Coalition
Carson Chamber of Commerce
Catalyst California
CBS Cycling
Central California Asthma Collaborative
Century City Business Improvement District (BID)
Century City Chamber of Commerce
Cerritos Chamber of Commerce
Chatsworth Business Improvement District (BID)
Chatsworth Porter Ranch Chamber
Chinese Chamber of Commerce of Los Angeles
Choicess
CICLAVIA
Citify Management Group
City of Agoura Hills
City of Alhambra
City of Arcadia
City of Artesia
City of Avalon
City of Azusa
City of Baldwin Park
City of Bell
City of Bell Gardens
City of Bellflower
City of Beverly Hills
City of Bradbury
City of Burbank
City of Calabasas
City of Carson
City of Cerritos
City of Claremont
City of Commerce
City of Compton
City of Covina
City of Cudahy
City of Culver City
City of Diamond Bar
City of Downey
City of Duarte
City of El Monte
City of El Segundo
City of Gardena
City of Glendale
City of Glendora
City of Hawaiian Gardens
City of Hawthorne
City of Hermosa Beach
City of Hidden Hills
City of Huntington Park
City of Industry
City of Inglewood
City of Irwindale
City of La Canada Flintridge
City of La Habra Heights
City of La Mirada
City of La Puente
City of La Verne
City of Lakewood
City of Lancaster
City of Lawndale
City of Lomita
City of Long Beach
City of Long Beach, Office of the City Manager

City of Los Angeles (LA City) (City of LA)
City of Los Angeles Department of City Planning
City of Los Angeles Department of Public Works, Board of Public Works
City of Los Angeles Department of Transportation (LADOT)
City of Los Angeles: Department of Public Works, Bureau of Street Services
City of Lynwood
City of Malibu
City of Manhattan Beach
City of Maywood
City of Monrovia
City of Montebello
City of Monterey Park
City of Norwalk
City of Palmdale
City of Palos Verdes Estates
City of Paramount
City of Pasadena
City of Pico Rivera
City of Pomona
City of Rancho Palos Verdes
City of Redondo Beach
City of Rolling Hills
City of Rolling Hills Estates
City of Rosemead
City of San Dimas
City of San Fernando
City of San Gabriel
City of San Marino
City of Santa Clarita
City of Santa Fe Springs
City of Santa Monica
City of Sierra Madre
City of Signal Hill
City of South El Monte
City of South Gate
City of South Pasadena
City of Temple City
City of Torrance
City of Vernon
City of Walnut
City of West Covina
City of West Hollywood
City of Westlake Village
City of Whittier
Claremont Chamber of Commerce
Claremont Wildlands Conservancy
Climate Cents
Climate Resolve
Clockshop
Commerce Industrial Council Chamber of Commerce
Commerce Municipal Bus Line
Commission on the Status of Women
Communities for a Better Environment
Community Power Collective
Compton Chamber of Commerce
Compton Community College
Conejo Chamber of Commerce
Conejo Valley Cyclists
Conservation Corps of Long Beach
Council for Watershed Health
Covina Chamber Of Commerce
Covina Valley Cyclery
Crazy Bear Bikes
Crenshaw Chamber of Commerce
Crescenta Valley Chamber of Commerce
Culver City Bus
Culver City Chamber of Commerce
DAY ONE
Different Spokes-Southern California
Disability Community Resource Center
Downey Chamber of Commerce
Downtown Center Business Improvement District (BID)
Downtown Industrial District Business Improvement District (BID)
Downtown Pomona Owner's Association
Downtown Women's Center

Dtla Bikes
Duarte Chamber Of Commerce
East Los Angeles Chamber of Commerce
East Los Angeles Remarkable Citizens' Association
East Los Angeles Women's Center
East Side Riders Bike Club
East Yard Communities for Environmental Justice
Eastside Bike Club
Eastside L.E.A.D.S
El Monte/South El Monte Chamber of Commerce
El Nido Family Source Center
El Segundo Chamber of Commerce
EMERSON & ASSOCIATES
Encino Chamber of Commerce
Enterprise Community Partners
Environment Now
Estolano LeSar Advisors
F&R Cycle, Inc.
Family Promise of the South Bay
Fashion District Business Improvement District (BID)
Fehr & Peers
Fernandeno Tataviam Band of Mission Indians
Figueroa Corridor Business Improvement District (BID)
Fixing Angelenos Stuck in Traffic (FAST)
Foothill Transit
Gabrieleno Band of Mission Indians - Tongva
Gardena Bus (GTrans)
Gardena Chamber of Commerce
Gateway to Los Angeles Business Improvement District (BID)
Glendale Chamber of Commerce
Glendora Chamber of Commerce
Go Green Bicycles
Grades of Green
Granada Hills Chamber of Commerce
Greater Chinatown Business Improvement District (BID)
Greater Los Angeles African American Chamber of Commerce
Greater Miracle Mile Chamber of Commerce
Greater Monterey Park Chamber of Commerce
Greater West Covina Business Association
GRID Alternatives GLA
Harford County Chamber of Commerce
Hawthorne Chamber of Commerce
Healthy Active Streets
Helens Cycles
Hermosa Beach Chamber of Commerce
Highland Park Business Improvement District (BID)
Hillsides
Hispanas Organized for Political Equality
Historic Core Business Improvement District (BID)
Hollywood Chamber of Commerce
Hollywood Media District Business Improvement District
Homeboy Industries
Housing Authority of the City of Los Angeles (HACLA)
ICF International, Inc.
Incycle Bicycles
Industrial District Green
Industry Chamber of Commerce
Inglewood Airport Area Chamber of Commerce
Instituto de Avance Latino
Investing in Place
Irwindale Chamber of Commerce
Japanese Chamber of Commerce
Just Ride LA
KES Inc.

Kimley-Horn and Associates, Inc.
kmdezine studio
Korean American Chamber of Commerce
LA Brakeless Bicycles
La Canada Flintridge Chamber of Commerce
La Habra Chamber of Commerce
La Mirada Chamber of Commerce
La Verne Chamber of Commerce
Lakewood Chamber of Commerce
Larchmont Village Business Improvement District (BID)
Las Virgenes/Malibu Council of Governments
LAX Coastal Chamber of Commerce
League of American Bicyclists
Linear City Development LLC
Little Tokyo Business Association
Livable Communities Initiative
Lomita Chamber of Commerce
Long Beach Area Chamber of Commerce
Long Beach Transit
Los Angeles Alliance for a New Economy (LAANE)
Los Angeles Area Chamber of Commerce
Los Angeles Audubon Society
Los Angeles Beautification Team
Los Angeles Cleantech Incubator (LACI)
Los Angeles Conservation Corp
Los Angeles County Bicycle Coalition
Los Angeles County Department of Public Works
Los Angeles County Metropolitan Transportation Authority
Los Angeles Metropolitan Hispanic Chamber of Commerce
Los Angeles Neighborhood Land Trust
Los Angeles River State Park Partners
Los Angeles Tourism & Convention Board
Los Angeles Walks
Los Angeles Wheelmen
Lynwood Chamber of Commerce
Malibu Chamber Of Commerce
Manhattan Beach Chamber of Commerce
MBI Media
Meet Each Need With Dignity (Mend)
Metropolis Bikes
Monrovia Chamber Of Commerce
Montebello Bus Lines
Montebello Chamber of Commerce
Montebello Municipal Bus Line
Montrose Bike Shop
Move LA
Mujeres de la Tierra
Multicultural Communities for Mobility
National Us Arab Chamber of Commerce
NextGen California
North County Transportation Coalition
Northridge Chamber of Commerce
Norwalk Chamber of Commerce
Norwalk Transit System
Norwalk Transit Systems
Office of Los Angeles County Supervisor Kathryn Barger, District 5
Pacific Palisades Chamber of Commerce
Pacoima Beautiful
Pacoima Neighborhood Council
Palos Verdes Bicycle Club
Palos Verdes Peninsula Chamber of Commerce
Panorama City Chamber of Commerce
Paramount Chamber of Commerce
Pasadena Chamber of Commerce
Pasadena Complete Streets Coalition
Pasadena Cyclery
People Assisting The Homeless

People for Mobility Justice
PeopleForBikes
Pico Rivera Chamber of Commerce
Planning and Conservation League
Policies for Livable Active Communities and Environments Program
Pomona Chamber of Commerce
Pomona Valley Transportation Authority
Port of Long Beach
Port of Los Angeles
Public Matters
Pueblo Planning
PV Bike Chicks
Rails-to-Trails Conservancy
Rebuild California Alliance
Redondo Beach Chamber of Commerce
Regional Chamber of Commerce- San Gabriel Valley
Ride for Black Lives
Ride On! Bike Shop / Co-Op
Ride-On Bike Co-op
RimtoRim Bike Shop
River LA
Rosemead Chamber of Commerce
Ryddo
Sacramento Area Bicycle Advocates
Safe Moves
Safe Routes to School National Partnership
San Dimas Chamber of Commerce
San Fernando Valley Bicycle Club
San Gabriel Valley Council of Governments (SGVCOG)
San Marino Chamber Of Commerce
San Pedro Business Improvement District (BID)
San Pedro Chamber of Commerce
Santa Clarita Transit
Santa Clarita Valley Chamber of Commerce
Santa Monica Chamber of Commerce
Santa Monica Spoke
Sherman Oaks Chamber of Commerce
Sierra Club - Angeles Chapter
Sierra Madre Chamber of Commerce
Signal Hill Chamber of Commerce
Silver Lake Chamber of Commerce
Smart Growth America
SOCIAL AND ENVIRONMENTAL ENTREPRENEURS
Social Equity LA
Sol del Valle Community Center
South Bay Bicycle Coalition
South Bay Bicycle Coalition Plus (SBBC+)
South Bay Cities Council of Governments
South Coast Air Quality Management District
South Gate Chamber of Commerce
South Los Angeles Transit Empowerment Zone (SLATE-Z)
South Park Business Improvement District (BID)
South Pasadena Chamber of Commerce
Southern California Association of Governments (SCAG)
Southern California Association of Nonprofit Housing (SCANPH)
Southern California Resource Services for Independent Living
Stotts Bicycles
Strategic Actions for a Just Economy (SAJE)
Stratiscope
Streets Are For Everyone
Streets For All
Studio City Busisness Improvement District (BID)
Studio Cycle Company
Sun Valley Area Neighborhood Council
Susan Levi & Associates, Inc.
Sylmar Chamber of Commerce
Sylmar Neighborhood Council

Temple City Chamber of Commerce
The Bicycle Kitchen
The Bike Palace
The Local Bikestand
The TransLatin@ Coalition
The Trust for Public Land
Tia Chucha's Centro Cultural
tokyobike
Toluca Lake Chamber of Commerce
Torrance Chamber of Commerce
ToyoTech
TransitCenter
Transportation For America
Transtech Engineers Inc.
TRUST South LA
U.S. Green Building Council
Unchained Bicycle Garage
Uncommon Good
UNIDAD – United Neighbors In Defense Against Displacement
Universal City North Hollywood Chamber of Commerce
Universal Cycles
University of Southern California (USC)
Urban Land Institute, Los Angeles
Urban Trans North America- Los Angeles
US Arab Chamber of Commerce
US-Mexico Chamber of Commerce
Valley Industry & Commerce Association (VICA)
VCS Environmental
Velo Allegro Long Beach
Velo Pasadena
Venice Beach Business Improvement District (BID)
Venice Chamber of Commerce
Vernon Chamber of Commerce
Walk Bike Burbank
Walk n' Rollers
Watts/Century Latino Organization
West Hollywood Bicycle Coalition
West Hollywood Chamber of Commerce
West Los Angeles Chamber of Commerce
West Valley Warner Center Chamber of Commerce
Westchester Town Center Business Improvement District (BID)
Western States Trucking Association
Westwood Village Improvement Association (BID)
Whittier Chamber of Commerce
Willdan Group Inc
Willy's Bikes
Wilshire Center Business Improvement District (BID)
Winnetka Chamber of Commerce
YG Bicycles
YWCA of Greater Los Angeles

Vehicle Miles Traveled (VMT) Mitigation Program

PLANNING & PROGRAMMING COMMITTEE

APRIL 17, 2024

Metro

GOALS

Integrate Equity

Explore Mitigation Options & Impact Need

Establish Mitigation Program

DELIVERABLES

- Quantification Methods
- Mitigation Options
- Pilot VMT Mitigation Bank
- Metro VMT Calculator

STAKEHOLDERS

- Highway Project Teams
- Subregional COGs
- Program Administrator
- Mitigation Action Implementers
- General Public

WHAT WE HEARD

- Consistency
- Simplicity
- Geographic Alignment
- Flexibility
- Implementable

SR-14 Traffic Safety Improvement Project: Potential Mitigation Requirements

PREVIOUS MITIGATION COST ESTIMATE

Project Cost	LA County-Specific Quantification Methodology	California Induced Travel Calculator
Estimated Capital Cost	$168 million	
Mitigation Cost*	$97.7 million	$252.6 million
Total Project Cost with Mitigation	$265.7 million	$420.6 million

**Mitigation costs derived from I-680 Northbound ExpressLanes project in Contra Costa County and I-5 Managed Lanes Project in Orange County*

UPDATED MITIGATION COST ESTIMATE

Project Cost	LA County-Specific Quantification Methodology	Hybrid Methodology
Estimated Capital Cost	$168 million	
Mitigation Cost	$107.4 million	$196.2 million
Total Project Cost with Mitigation	$275.4 million	$364.2 million

**Mitigation costs derived by applying Metrolink service frequency increases on Metrolink lines servicing Los Angeles County*

Refining & Evaluating Mitigation Actions

ELIGIBILITY CRITERIA

Effective

Enforceable

Evidentiary

PILOT VMT MITIGATION BANK

Flexible approach that meets SHS Project needs + Mitigation Action implementer needs

Diverse Mitigation Actions to reflect diverse countywide priorities

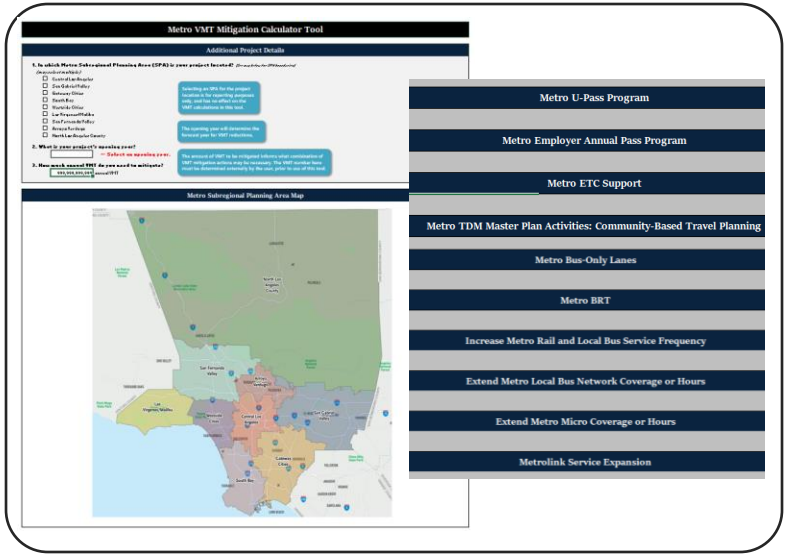
METRO ACTIONS

1. Provide Bus Rapid Transit
2. ***Provide Metro Bus-Only Lanes***
3. ***Increase Metro Bus Service Frequency***
4. Extend Metro Bus Network Coverage/ Hours
5. Expand Metro Micro
6. Implement Subsidized or Discounted Transit Program (UPass)
7. Implement Subsidized or Discounted Transit Program (Employer Pass)
8. Implement Commute Trip Reduction Program (Employer Commute Support)
9. Implement Community Based Travel Program (TDM Master Plan – Residential Programs)
10. Implement E-Bike Subsidy Program
11. Implement Electric Bikeshare Program
12. Implement Pedal (Non-Electric) Bikeshare Program
13. ***Implement Housing (including Affordable Housing) on Metro Joint Development Sites***

PARTNER AGENCY ACTIONS

14. ***Metrolink Service Expansion***
15. Implement South Bay Cities COG Local Travel Network

Note: The four bolded Actions have been advanced to the Pilot VMT Mitigation Bank.



VMT Bank Structure

VMT Mitigation Bank

Project: 2 of 2
NEEDS: 2.1 MILLION ANNUAL VMT CREDITS

1 Package Bus Service Frequency Credits	$1,199,400
198 Packages Joint Development Credits	$3,207,600
Total... Total VMT Credits...	$4,407,000 2.1 Million VMT

Project: 1 of 2
NEEDS: 4.5 MILLION ANNUAL VMT CREDITS

2 Packages Bus Only Lanes Credits	$958,000
Total... Total VMT Credits...	$958,000 4.56 Million VMT

Bank Administrator

Mitigation Action Implementor

METROLINK SERVICE

IN PROGRESS

Forthcoming details from Metrolink

JOINT DEVELOPMENT UNITS

$16,200
Annually, for 20 years

1 DWELLING UNIT	8,165 VMT	$1.99 PER VMT

BUS SERVICE FREQUENCY

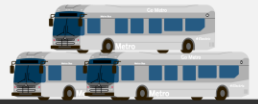
$1.2 MILLION
Annually, for 20 years

3,100 RSH & 1 BUS	490K VMT	$2.60 PER VMT

BUS ONLY LANES

$479,000
Annually, for 20 years

15 BUS-ONLY LANE MILES	2.28M VMT	$0.21 PER VMT



Next Steps

Establish the administrative functions, oversight, and annual reporting necessary to fully implement the VMT Mitigation Program

Initiate the development of the VMT Mitigation Bank

Continue to engage across Metro departments and implementing partners

Continue to work with Caltrans to resolve differences related to VMT quantification methodologies

Provide annual updates to the Board on VMT Mitigation Bank