



Board Report

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PLANNING AND PROGRAMMING COMMITTEE SEPTEMBER 20, 2023

SUBJECT: STATUS REPORT ON METRO VMT MITIGATION PROGRAM

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE status report on Metro's Vehicle Miles Traveled (VMT) Mitigation Program.

ISSUE

Metro is developing a framework to mitigate induced Vehicle Miles Traveled (VMT) impacts from projects on the State Highway System (SHS). This work is being conducted in compliance with Caltrans' California Environmental Quality Act (CEQA) transportation impact metric determination, pursuant to Senate Bill (SB) 743, an unfunded mandate. This framework will allow Metro to mitigate any potential induced VMT impacts by investing in our own Metro VMT-reducing operations, projects, and programs, or those of our public agency partners, including active transportation, bus-only lanes, bike share expansion, increased service frequency for our transit operations or those of our partner transit agencies, and affordable housing, among others.

This report builds on the July 2023 presentation to the Board of Directors and provides further updates on the development of this framework, including the preliminary project cost increases to satisfy compliance with SB 743, using either the current Caltrans Guidance (California Induced Travel Calculator) or the Los Angeles (LA) County-specific quantification approach, with a comparative summary of the strengths and limitations of both approaches included as Attachment A. This quantification approach will identify the mitigation obligation for individual projects as well as influence the broader mitigation framework development.

BACKGROUND

In September 2020, Caltrans released statewide guidance for analyzing the CEQA VMT impacts of projects on the SHS. In response, Metro pursued and was awarded Fiscal Year (FY) 2021-22 Caltrans Sustainable Transportation Planning Grant Program funds, with the Board authorizing the CEO to execute a Resolution (Attachment B, File# 2021-0471). These funds were awarded to develop a VMT Mitigation Program (Program) which would analyze, identify, and quantify VMT

attributable to Metro's projects on the SHS and develop a framework to mitigate those impacts. Following Board approval of the Resolution, execution of the grant fund agreement, and procurement of a consultant, Metro Complete Streets & Highways staff, in collaboration with a comprehensive list of internal Metro, regional, and statewide stakeholders, including Metro's Office of Sustainability, began work on the Program.

The VMT Mitigation Program aims to reduce the impacts of VMT while simultaneously providing greater mobility options for the County's residents by investing in Metro VMT-reducing operations, projects, and programs, or those of our public agency partners. The approach aligns with Metro's "Modernizing the Highway Program" Board direction and the Board adopted "Objectives for Multimodal Highway Investment". Additional policies guiding the development of this Program are those advanced by the Metro Office of Sustainability, including the LA Metro Climate Action and Adaptation Plan (2019) and the goals and next steps prescribed in the "Climate Emissions Analysis: Metro's Indirect Impact on Greenhouse Gas Emissions" (2022). The current framework design is in alignment with and represents the further implementation of climate-related policies previously adopted by the Board, which recognizes that lowering per capita VMT is a central component of reducing Greenhouse Gases (GHG) from the transportation sector and thus meeting regional climate action goals.

Some of the VMT-reducing options under review and consideration include, but are not limited to improved access to transit, pedestrian, or bicycle networks; construction or improvement of bike facilities or bike boulevards; implementation or access to a commute reduction program; provision of bike-sharing and ride-sharing programs; provision of subsidized transit passes; telework options; implementation of management strategies (e.g., pricing, vehicle occupancy requirements); improved transit network coverage or hours; improved transit service frequency; Bus Rapid Transit (BRT) or bus-only lanes; e-bike subsidies; and acceleration of transit-oriented, affordable housing joint development land use projects.

Through this Program, Metro is leading efforts to measure and mitigate VMT impacts equitably and strategically in a manner that allows for public investment in VMT-reducing projects of our agency and municipal partners. Metro's ongoing, significant investment in multimodal options delivered through Propositions A and C and Measures R and M, including transit, rail, and bus service, and the strategic deployment of multimodal ExpressLanes throughout the County, have contributed to a wealth of travel options that are not available in other regions in the State and which are already reducing VMT and VMT per capita Countywide, leading to suppressed demand for road travel and changing travel patterns and relationships, in furtherance of Metro's climate policies.

DISCUSSION

The development of this Program will bring transparency and efficiency to the delivery of Measure R and M highway improvement projects in collaboration with Caltrans Headquarters (HQ), Caltrans District 7, the subregional Councils of Governments, and local jurisdictions. These projects require individual environmental clearance, necessitating VMT impact analysis, and potential mitigation, consistent with Caltrans guidance. Some of these projects will be starting their environmental review

phase in the immediate future; therefore, the development of guidance and the ultimate adoption of the Program, including the LA County-specific quantification approach and mitigation quantification tool, will provide a timely roadmap for constructing and/or funding meaningful VMT-offsetting projects on and off the SHS, in parallel to the larger highway project implementation timeframe. Assessment of how and where VMT mitigation strategies can be located also offers the opportunity to consider direct investment in historically disadvantaged communities with decades of underinvestment, significantly advancing social equity. After this effort, the approved Program would identify and prioritize projects and programs that would provide broader VMT reductions at a local and/or regional level and facilitate funding to construct or implement them.

VMT Regulatory and Policy Guidance

The first major completed deliverable is the *VMT Regulatory and Policy Guidance* memorandum (Attachment C), which summarizes a literature review related to VMT quantification and mitigation strategies. Policy guidance reviewed included VMT impact and mitigation estimation documents at the state and federal levels. This memo lists the project types currently assumed to increase (induce) or not increase VMT, summarizes several mitigation options, and closes with a review of methodological guidance to VMT quantification, including a description of the available tools, including elasticity-based methods (like the “one size fits all” California Induced Travel Calculator), travel demand models (such as the Southern California Association of Governments activity-based regional travel demand model [SCAG ABM]), and qualitative assessments when neither is useful.

The memo documents the strengths and limitations of each tool. For example, elasticity-based methods are not sensitive to land use context, geographic constraints, congestion levels, and availability of multimodal options, including transit and active transportation, with these tools viewed as a rapid response approach that could result in an over or underestimation of VMT. In comparison, travel demand models forecast VMT changes based on variables such as population and employment growth and income changes and can better reflect context sensitivity for existing land uses and the transportation network, including available high-quality transit options. A draft of this memo was shared with the Policy Working Group (PWG), which includes a comprehensive list of internal Metro, regional, and statewide stakeholders informing the policy-related aspects of the Program, including mitigation criteria, mitigation selection, and framework development. The PWG provided minor comments to the draft, which were incorporated into the final memo.

VMT Quantification Tools and Preferred Methodology

The second major completed deliverable is the *VMT Quantification Tools and Preferred Methodology* memorandum (Attachment D), which builds on the previous memo. Recognizing that unique local conditions exist within LA County, a “one size fits all” approach may not account for local context and could over or underestimate VMT impacts. This precision matters not only in accurately accounting for the anticipated VMT impacts and mitigations but also in acting as responsible stewards of public funds provided by the voters. To commence this work, Metro assembled a Project Development Team (PDT) comprised of the authors of the relevant guiding documents or developers of the local modeling tool for VMT estimation. The PDT is composed of the California Governor’s Office of

Planning and Research (OPR), Caltrans HQ, Caltrans District 7, and SCAG.

The second memo outlines a locally refined, context-sensitive, LA County-specific quantification approach to VMT analysis, better balancing Caltrans' priorities with Metro's subregional priorities, developing stakeholder consensus on project VMT analysis, and informing the subsequent selection of VMT mitigation strategies. The memo evaluates existing VMT quantification tools, presents recommendations on travel demand model improvements, and assesses the quantification methods established by Caltrans for projects on the SHS specific to the context in LA County. This evaluation addresses Caltrans' current VMT quantification practice, which is based on the statewide application of national research on induced travel during an era where VMT experienced almost uninterrupted growth. The memo notes that the Caltrans VMT quantification tool does not consider differences between widened highways or new highways, project location or project type (General Purpose vs. High Occupancy Vehicle vs. High Occupancy Toll/ExpressLanes), nor the VMT dampening effects or synergistic benefits of existing Countywide multimodal options which are further envisioned in Metro's Long Range Transportation Plan (LRTP).

Metro convened the PDT four times from May 2022 through February 2023 to develop and present the quantification approach from concept to final proposal. In addition, Metro held two focus meetings with SCAG in June and September 2022 to address concerns regarding induced travel, with SCAG indicating general support for the approach. Furthermore, Metro held two focus meetings with Caltrans HQ in August 2022 and February 2023 to daylight concerns with the statewide VMT modeling tool and review Metro's quantification approach to try to resolve differences. In June 2023, Metro met with the Los Angeles Department of Transportation (LADOT) to discuss the proposed approach, with LADOT expressing no objections related to the work conducted. Finally, in August 2023, Metro presented the quantification approach to the PWG, with the PWG providing no comments or objections to the approach.

It should also be noted that SCAG has indicated concern with what the Caltrans VMT guidance may mean for the development of the regionwide ExpressLanes network. In response to this concern, SCAG has convened an expert panel including researchers from the University of California-Los Angeles and other academic institutions to explore if there is any difference in induced travel effects between General Purpose, High Occupancy Vehicle, and High Occupancy Toll/ExpressLanes additions. As of August 2023, the expert panel is working to finalize a research report on their findings with a target publication date of fall/winter 2023.

Findings

Travel in LA County and changes in local travel patterns over the last two decades are inconsistent with national trends and different than other regions in California. Based on population estimates from the United States Census and VMT estimates from the Highway Performance Monitoring System (HPMS) data between 2001-2019, the observed changes in VMT and VMT per capita in LA County differ significantly from national and statewide trends. VMT and VMT per capita in LA County are lower than national averages, the lowest in the SCAG region, and on the lower end of VMT per capita statewide, with these declining VMT trends due in part to Metro's significant investment in rail

and bus transit, with the Metro A (Blue), B (Red), C (Green), D (Purple), E (Expo), L (Gold), and K lines entering service starting in 1990, 1993, 1995, 2003, 2012, and 2022, respectively. The tables and charts that illustrate these differing relationships are presented below:

Table 1: Comparison of HPMS and Population Data - 2001 to 2019

	California	Los Angeles MSA
Change in Total VMT	+15%	-4%
Change in Total Population	+14%	+5%
Change in Per Capita VMT	+1%	-8%

Figure 1: Total Daily VMT - California and Los Angeles MSA - 2001 to 2019 (HPMS)

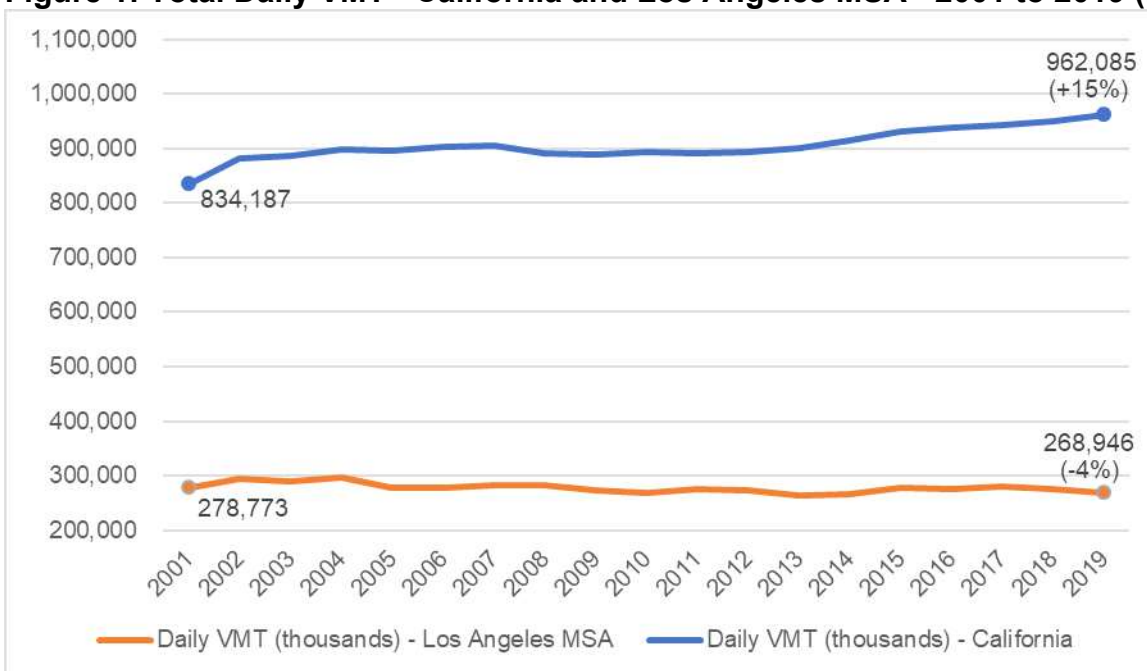
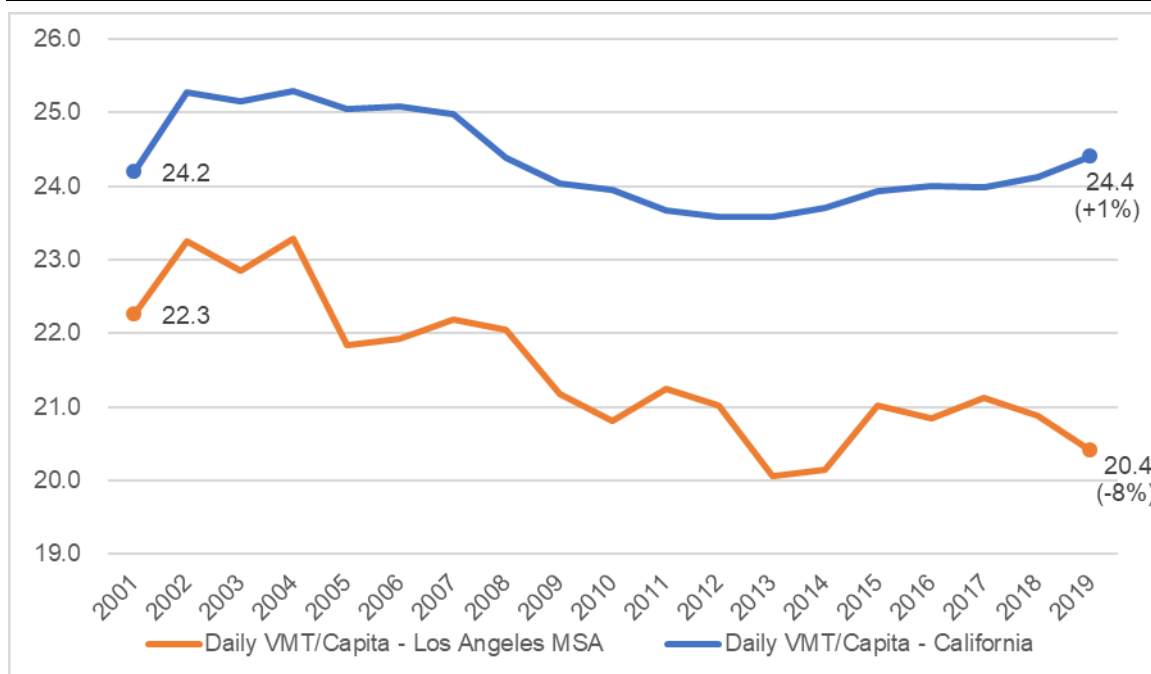


Figure 2: VMT Per Capita - California and Los Angeles MSA - 2001 to 2019 (Census & HPMS)



By not fully considering the LA County context, the Caltrans approach does not account for the multimodal advances Metro has made in creating modal alternatives to vehicular travel. Building on this analysis, the memo outlines proposed refinements to VMT quantification methods applied to SHS projects at a program and project level within LA County, detailing an evidence-based, locally specific, context-sensitive quantification approach to estimating long-term induced VMT, in alignment with the California OPR and Caltrans Transportation Analysis Framework (TAF) SB 743 guidance that state that “the studies on induced travel reveal a range of elasticities” and that “knowledge of local conditions can help contextualize the calculator’s estimates”. Metro will continue to refine the quantification approach in the next 6 months to ensure that induced VMT effects are captured accurately, reflective of LA County conditions, and accounting for Metro’s current and ongoing investments in transit and multimodal transportation, offsetting the induced VMT effects of strategic ExpressLanes and mobility and safety improvement projects on the SHS.

Caltrans Response to Metro’s LA County-Specific Quantification Approach

Caltrans HQ reviewed Metro’s LA County-specific quantification approach and responded to the locally-specific substantial evidence contained within. These responses were limited to addressing the proposed elasticity values, with Caltrans HQ declining to deviate from the existing statewide guidance without undertaking their further research. Metro staff continues to work with Caltrans HQ to explore the range of published academic research demonstrating divergent long-term induced VMT elasticity values (0.1 to 0.4), including those research efforts that explicitly control for reassignment/diversion effects that move vehicles off of local roadways and onto highways and do not constitute new VMT, the observed declining VMT trends in the LA County MSA over the last 20 years, and the percentage of induced VMT that comprises the closest-aligned category with the legislative intent of SB 743. Caltrans HQ also stated that they prefer reviewing methodologies on a

project-by-project basis and Metro, with concurrence from Caltrans HQ, will be conducting a more detailed analysis using Metro’s proposed LA County-specific quantification approach for evaluation of upcoming projects and for the development of mitigation strategies, both of which must be CEQA defensible.

Project Cost Implications

The VMT mitigation requirements for all highway projects will depend on what methodology is ultimately accepted for use in project-level analysis. An order of magnitude estimate of the mitigation requirements and the resulting financial impacts is presented below using recently published costs for VMT mitigation per daily VMT reduced and the LA County-specific quantification approach elasticity factor of 0.29 or the Caltrans preferred California Induced Travel Calculator elasticity factor of 0.75. These costs include \$860 for Transportation Demand Management (TDM) programs and \$3,000 to \$46,000 for programmatic and capital projects, including shared mobility hubs, express bus service, and Class IV two-way cycle tracks per daily VMT reduced. To use an example of a Metro project, the potential financial impacts of the Board-directed State Route (SR) 14 Traffic Safety Improvement Project are shown in the table below using the cost of \$3,000 per daily VMT reduced:

Table 2: SR-14 Traffic Safety Improvement Project - Potential Mitigation Requirements

Project Cost	LA County-Specific Quantification	California Induced Travel Calculator
Estimated Capital Cost	\$168 million	
Mitigation Cost	\$97.7 million	\$252.6 million
Total Project Cost	\$265.7 million	\$420.6 million
Mitigation Cost Difference		\$154.9 million
Total Project Cost % Increase with Mitigation	+58%	+150%

Based on two projects currently under environmental review (I-680 Northbound Express Lane Completion Project in Contra Costa County and I-5 Managed Lanes Project [SR-55 to OC/LA County Line] in Orange County), Caltrans HQ has approved the circulation of the CEQA environmental documents with VMT mitigation costs equal to or exceeding the capital cost of each project, at a minimum doubling project costs based on VMT mitigation requirements.

This is compounded by the fact that the passage of Proposition A and C and Measure R and M pre-date the release of the Caltrans VMT guidance, which states that mitigation must not already be included in planning documents or previously funded. As a result, Metro is unable to leverage our broader program of VMT reducing projects, including our major transit investments, to balance or offset the VMT impacts of our highway program of projects, effectively penalizing Metro for being proactive in advancing local sales tax measures that fund alternative modes of transportation that are already reducing VMT and VMT per capita Countywide.

Importantly, while these potential mitigation requirements represent potential increases in the capital costs of any one project, these mitigation actions represent benefits regarding the multimodal

programs that can be created or enhanced through mitigation, increasing potential opportunities to pursue State and Federal grant funding for subsequent phases of projects. After the Board considers the implications of the divergent technical approach and potential project cost impacts, Metro staff will present this information to the PWG for their review and consideration.

EQUITY PLATFORM

Staff has worked closely with the 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 pollution, 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, with ExpressLanes and HOV lanes prioritizing transit use and carpool and vanpool formation.

The Program team is evaluating the potential benefits of these VMT mitigation measures and resulting investments to Metro's updated 2022 Equity Focus Communities (EFCs) by comparing Countywide VMT patterns from the SCAG ABM Traffic Analysis Zones (TAZs) and how they relate to EFCs. This data reveals several interesting findings that can help inform where VMT mitigation actions are geographically targeted to have the greatest impact:

- The average daily home-based VMT per capita is lower in EFC-TAZs (18.4) than in Non-EFC-TAZs (23.2).
- Across all TAZs, the average daily home-based VMT per capita is just under 5 miles higher in Non-EFC TAZs than in EFC-TAZs.
- Across high VMT TAZs, defined as those that exceed the Countywide average daily VMT per capita (~20.4), that difference is less than 2 miles (24.8 for EFC-TAZs vs 23.0 for Non-EFC-TAZs).
- Over 75% of the non-EFC population resides in high-VMT TAZs, while about 27% of the EFC population resides in high-VMT TAZs.

Specifically, the data and maps (Attachments E and F) show that there are disparities in VMT per capita between EFCs and non-EFCs, including in high VMT TAZs, which will help inform where VMT mitigation actions are geographically targeted to have the greatest impact on reducing VMT while

avoiding over-burdening EFCs with undue responsibility to mitigate VMT. Secondly, the Program team is developing criteria for evaluating, validating, and prioritizing potential VMT mitigation options and evaluating if the criteria will ensure an equitable approach by confirming that EFCs receive their fair share of benefits and are protected from disproportionate impacts. This approach guides the policy-related aspects of the Program, including prioritization of mitigation predicated on EFC-based needs, with the viability of these priorities specifically analyzed and weighted against other evaluation criteria.

Staff has prioritized the inclusion of a diverse set of stakeholders, including Metro's Office of Sustainability, through the active involvement of both a PDT, working on the technical methodologies, and the PWG, informing the development of mitigation options and the framework structure, with both guiding the Program development. Coordination with OER is ongoing throughout the Program development, including their active participation in the PWG as well as over a dozen focus meetings or reviews of key equity-related deliverables.

Staff has built on the PDT and PWG internal and external regional and statewide stakeholder input by undertaking a comprehensive outreach strategy targeting other Countywide stakeholders, including chambers of commerce, community-based organizations, advocacy groups, councils of governments/joint powers authorities, and environmental and social justice organizations, among others, to inform the selection and prioritization of mitigation options, with this outreach effort currently underway. This outreach will conclude by the end of 2023.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The Program supports the implementation of the following Strategic Plan Goals:

1. Provide high-quality mobility options that enable people to spend less time traveling

The Program will allow Metro to continue to fund important, voter-approved highway improvement projects, delivering significant investments to further the goals identified in Metro's Vision 2028 Strategic Plan, LRTP, and Goods Movement Strategic Plan, supporting a vibrant economy, goods movement efficiency, and enhanced mobility for people and goods. These projects will simultaneously result in investments in ongoing VMT and GHG reducing projects, including active transportation and safety-focused projects, consistent with Metro's Complete Streets policy.

4. Transform LA County through regional collaboration and national leadership.

Consistent application of a locally refined method provides clarity for project teams working on environmental compliance for projects on the SHS and a consistent approach against which Caltrans HQ and District 7 can conduct their review of Metro's environmental documents for SHS projects. The Program goals include directly expanding the toolbox of VMT quantification approaches and mitigation strategies available to our public sector partners throughout the County and state. The research resulting from the Program is expanding the knowledge base overall and setting the stage for Metro and its public agency partners to provide further innovation in the field.

5. Provide responsive, accountable, and trustworthy governance within the Metro organization.

The Program's goals of accurately quantifying VMT resulting from Metro's Measure R and Measure M SHS projects ensures that project impact mitigation actions and associated costs are both fair and reasonably related to expected changes in local travel patterns based on locally specific substantial evidence. This approach ensures that Metro will prioritize limited funds to provide the most value to the public while maintaining a high standard of fiscal responsibility and achieving the highest return on investment for taxpayers.

NEXT STEPS

Staff will continue to report back at key milestones throughout the Program development. The final Program will be presented to the Board for consideration in early 2024. Metro will continue to work with Caltrans to evaluate project VMT impacts and develop corresponding mitigation strategies. Metro, through this Program, intends to utilize its existing transit operations, projects, and programs, and possibly those of our public agency partners, as VMT mitigation strategies for subregional highway project priorities while also coordinating and partnering with other municipal agencies to support and continue their ongoing VMT mitigation efforts. Future updates will include working with the PDT and PWG and through the broader Countywide stakeholder outreach effort to continue progress on the following critical items:

1. Development of a VMT mitigation quantification tool and guidance.
2. Further identification of eligible Metro and/or countywide programs that demonstrate CEQA-defensible and quantifiable VMT reductions.
3. Development of a series of criteria for evaluating, validating, and prioritizing potential VMT mitigation options.
4. Development of preliminary mitigation action cost estimates.
5. The development of a pilot VMT mitigation strategy, including preliminary administrative cost estimates to run the pilot.

ATTACHMENTS

Attachment A - Strengths and Limitations of Caltrans Guidance and LA County-Specific Quantification Approach

Attachment B - Grant Award Resolution

Attachment C - VMT Regulatory and Policy Guidance Memorandum

Attachment D - VMT Quantification Tools and Preferred Methodology

Attachment E - Metro EFCs & TAZ VMT Data - Countywide

Attachment F - Metro EFCs & Highway Projects & Programs - Countywide

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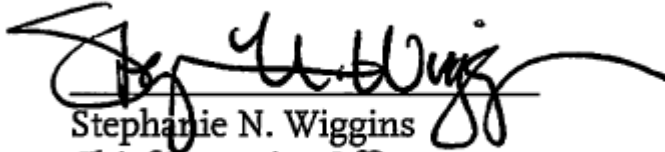
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