Fehr & Peers

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Q&A: VMT Under CEQA

For Practitioners and Decision Makers

This document captures common VMT implementation questions we hear from agencies and practitioners working through VMT analysis, mitigation, and program design. It's built for agency staff, decision makers, and CEQA and transportation professionals who need clear, practical context for applying VMT requirements in California.

This Q&A started with real questions we've heard through our work. It brings together existing guidance and technical references, agency practice, professional experience, academic research, and regional and local program examples related to vehicle miles traveled (VMT) analysis and mitigation under the California Environmental Quality Act (CEQA). The questions reflect issues that commonly arise during threshold setting, project-level CEQA review, mitigation program design, and implementation of Senate Bill 743 (SB 743) and related legislation, including Assembly Bill 130 (AB 130).

The content is intended to consolidate and summarize existing concepts and practice, not introduce new policy positions or endorse specific policies or approaches. Some related topics were combined or reframed to make the Q&A easier to use while preserving the underlying substance and intent.

Use it as a practical reference to frame discussions, identify key considerations, and support evidence-based decision-making. It does not establish new CEQA requirements, replace adopted local policies or thresholds, or provide legal advice. Agencies should rely on local policy, project-specific facts, professional judgment, and legal counsel when making final determinations.

Last updated June 2026. Future legislation, regulations, guidance, court decisions, or agency practice may affect the accuracy or applicability of this information.

See our website at https://www.fehrandpeers.com/qa-vmt-under-ceqa for an interactive version of this information.

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1. The Basics

What VMT means under CEQA and what agencies need to consider before making policy decisions.

What do we do if we haven't established a threshold?

Agencies can begin by answering seven core policy questions across four areas: VMT metrics, calculation methods, significance thresholds, and mitigation options. These decisions form the foundation of a clear and evidence-based VMT mitigation program.

Additional resource: SB 743: Summary of Lead Agency Decisions, Options, and Considerations

Is SB 743 based on VMT or VMT/capita?

SB 743 shifts CEQA transportation analysis from vehicle delay to **VMT**. Agencies may choose total VMT, VMT per capita, VMT per employee, or other metrics, as allowed under 14 Cal. Code Regs. § 15064.3.

Additional resource: VMT Modeling Lexicon: A Guide to Help Assess Transportation Impacts Under SB 743

Are VMT calculations transparent or are they a "black box"?

VMT is not directly observable, and a travel survey, travel model, or third-party data platform is needed to estimate and forecast VMT. Most local and regional models use open, documented methods. However, third-party data platforms (e.g., Replica, StreetLight) rely on proprietary algorithms, which may provide less methodological transparency than publicly maintained regional travel models. Agencies must document data sources and methods to allow adequate review. In addition, agencies should strive for methodological consistency between threshold development and project analysis or explain and support any methodological differences.

A key challenge for many jurisdictions is having a travel demand model available that is capable of producing VMT estimates and forecasts that are reasonable and sensitive to common land use and transportation projects. This is particularly true when jurisdictions rely on regional travel demand models as documented in *Review of Travel Demand Models for Caltrans Projects Analysis*, Caltrans, July 14, 2025.

Additional resource: Review of Travel Demand Models for Caltrans Projects Analysis

How are thresholds established? Are there standards, or are they goal-based?

Thresholds must be supported by **substantial evidence**. Agencies may choose to:

- Use screening criteria
- Adopt California Governor's Office of Planning and Research (OPR's) (now California Governor's Office of Land Use and Climate Innovation (LCI)) *Technical Advisory* suggested thresholds (for cities and counties, this decision must be consistent with their General Plan)

- Apply California Air Resources Board's (CARB's) 2022 Scoping Plan for Achieving Carbon Neutrality (Table 2-1) published reduction percentages
- Develop locally specific thresholds using General Plan policy or modeling data

Additional resource: Navigating Land Use Projects Through SB 743

Should we adopt OPR's/LCI's recommended thresholds?

OPR's (California Governor's Office of Planning and Research, now California Governor's Office of Land Use and Climate Innovation (LCI)) *Technical Advisory* suggests thresholds tied to statewide climate goals (for example, 15% below regional or jurisdictional average VMT for residential and office uses). This threshold represented the state's perspective at the time the advisory was published in 2018.

Since then, the policy and analytical context has continued to evolve. For example, the California Air Resources Board's 2022 Scoping Plan identifies a statewide target of approximately 30% reduction in VMT per capita compared to 2019 levels to support long-term greenhouse gas reduction goals. This target applies broadly across both existing and future development patterns, and its implementation depends on a combination of statewide actions and regional strategies.

Within CEQA, lead agencies retain discretion to define thresholds of significance that are appropriate to their jurisdiction, as provided in the *CEQA Statute & Guidelines* and reflected in implementation guidance such as WRCOG SB 743 Implementation Pathway. In practice, a jurisdiction's VMT budget is based on their general plans, which articulate community priorities, planned growth patterns, and transportation investments. The land use and circulation elements together shape expected travel behavior, with VMT outcomes reflecting these integrated policy choices.

Because general plans are forward-looking and often accommodate population and employment growth, VMT outcomes (both total and per capita) can vary depending on how and where growth is planned, including the balance between infill and edge development. As a result, jurisdictions may consider how statewide guidance relates to their adopted plans and local conditions when defining thresholds. Accordingly, agencies typically document the rationale for their selected threshold, including how it relates to local conditions, General Plan policies, and available supporting evidence.

Consistent with CEQA requirements, jurisdictions may acknowledge statewide recommendations while explaining the basis for any jurisdiction-specific approach. As confirmed in *League to Save Lake Tahoe Mountain Area Preservation Foundation v. County of Placer (2022) 75 Cal.App.5th 63*, a lead agency may adopt a different threshold of significance than another agency, provided it discloses and explains the areas of disagreement in the environmental document (14 Cal. Code Regs. § 15123(b)(2), (3)).

Additional resources:

- WRCOG SB 743 Implementation Pathway
- CARB SB 150 Dashboard – Tracking Progress – Sustainable Communities

How is greenfield development analyzed?

It depends on whether the project in the greenfield area is already part of an approved general plan or is being added to the general plan. Jurisdictions that plan for growth in new areas can fully address

VMT impacts of subsequent projects in their general plan EIR (see example below) as long as those projects are consistent with the general plan. For projects that require amending the general plan, a complete VMT impact analysis is likely required.

Additional resource: Roseville 2035 General Plan Update Final Environmental Impact Report

2. Methods and Tools

How VMT is calculated, what tools are commonly used, and why consistency matters.

What tools can be used to calculate VMT?

To set VMT thresholds and to conduct a complete VMT impact analysis, VMT metrics are typically estimated for baseline conditions and forecast for future conditions. Hence, VMT models are often necessary. Options include:

- Regional travel demand models
- Local travel demand models
- Sketch or spreadsheet tools
- Commercial transportation data platforms

Each option has strengths and limitations, and agencies are responsible for supporting their choices with substantial evidence. Most urban areas of the state are covered by regional travel demand models, and some jurisdictions have developed city or county specific travel demand models. Before using 'off the shelf' regional or local travel demand models, testing is recommended to verify the model is reasonable and sensitive (to land use density, diversity, and transportation network changes) for project-level analysis involving VMT metrics. This means that the travel model produces estimates of vehicle trips and distances that match observed values from travel behavior surveys and traffic counts. In addition, the VMT metric outputs change in the correct direction and magnitude when inputs are changed. Technical guidance on how to verify model reasonableness and sensitivity is available below.

Sketch or spreadsheet tools are often developed to help facilitate VMT impact analysis. These tools typically rely on VMT per capita estimates derived from travel models and they may be able to modify those estimates for select project types. Hence, the VMT per capita estimates used in these tools should be produced by travel models that have been verified as producing reasonable and sensitive VMT estimates and forecasts as described above.

Commercial transportation data platforms like Replica and StreetLight can produce VMT and VMT per capita estimates. They do not offer (at this time) forecasts of future VMT metrics. So, they have a more limited use. These platforms rely on models to produce their estimates, and some documentation is available regarding their structure and performance. However, the commercial transportation data platforms are proprietary and do not have the transparency common to public agency travel demand models.

Additional resource: Review and Assessment of Existing Planning/Travel Demand Tools for SB 743

How do agencies ensure consistency between threshold setting and project evaluation?

Agencies ensure consistency by using the **same VMT metrics and methods** for both threshold development and project-level analysis. Consistent application strengthens substantial evidence and helps to reduce disputes regarding analytical consistency.

Additional resource: SB 743 Implementation Decisions for the City of Cupertino

3. Designing Feasible Mitigation

What makes VMT mitigation effective, enforceable, and supported by evidence.

What makes VMT mitigation feasible under CEQA?

The basic test for a mitigation measure is whether it would be effective at avoiding or minimizing the significant impact and can be enforced by the lead agency. Lead agencies are required to impose 'feasible' mitigation measures as part of approving a project consistent with the expectations set forth in CEQA Statute & Guidelines and 14 Cal. Code Regs. § 15370.

> *(a) Avoiding the impact altogether by not taking a certain action or parts of an action.*
>
> *(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*
>
> *(c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.*
>
> *(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*
>
> *(e) Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.*

Based on the context above, VMT mitigation must clearly demonstrate that it reduces VMT and that the lead agency can enforce the mitigation.

What types of projects reduce VMT?

Projects and strategies that reduce VMT generally include capital investments (such as transit, bicycle and pedestrian infrastructure, and infill housing), transportation demand management programs (like transit subsidies and e-bike incentives), and operational improvements (including microtransit, increased transit frequency, and pricing). To be adequate for CEQA-purposes, agencies typically quantify VMT reductions using evidence-based sources (such as the *CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (2024),* travel models, or academic research) and apply them consistently at an appropriate scale.

Additional resources:

- Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program
- Equitable VMT Mitigation Program, Reducing Driving from Development Projects (Santa Clara Valley Transportation Authority)
- CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024)

Does VMT mitigation cause other impacts that need to be disclosed?

The CEQA Statute & Guidelines, including 14 Cal. Code Regs. § 15126.4(a)(1)(D), provide that the potential impacts of mitigation measures should be discussed where relevant and reasonably feasible. As part of this discussion, lead agencies may describe known limitations, implementation considerations, or conditions that could affect the anticipated effectiveness of a mitigation measure.

For VMT mitigation measures, agencies may evaluate whether factors such as induced travel behavior, roadway capacity changes, travel response, project scale, or broader system conditions could influence the magnitude or durability of projected VMT reductions. Consideration of these factors does not imply that transit, active transportation, or transportation demand management strategies are ineffective. Rather, the effectiveness of such measures may vary depending on land use context, network design, pricing, complementary policies, and travel behavior. Accordingly, CEQA documents typically describe these considerations and, where relevant, explain how mitigation design, scale, or complementary measures are expected to address potential uncertainty in performance.

Commonly used methodologies, such as the CAPCOA *Handbook for Analyzing Greenhouse Gas Emission Reduction Measures* (2024), provide a standardized approach to estimating VMT reduction potential for individual strategies. As with any forecasting tool, these methods are generally designed to estimate project-level or population-specific effects and may not fully capture broader system-level travel responses. Where project characteristics fall outside typical assumptions, agencies may supplement these estimates with model-based analysis or site-specific data to support conclusions. In practice, this often involves documenting key assumptions, identifying factors that could influence outcomes, and explaining why the selected methodology provides a reasonable basis for estimating VMT effects. For example, some research has explored how system-level responses to changes in travel conditions—such as shifts in travel behavior or network utilization—can influence realized VMT outcomes over time, particularly where roadway capacity or travel costs remain unchanged. Accordingly, where appropriate, agencies may supplement screening-level estimates with project-specific analysis, sensitivity testing, or cumulative-condition evaluation to support substantial evidence.

Where the CEQA analysis identifies potential uncertainties or factors that could influence mitigation performance, it may also describe measures intended to support effectiveness. For example, transit or active transportation improvements may be implemented alongside roadway reconfiguration, parking management, pricing strategies, or transportation demand management programs to reinforce mode shift and support sustained VMT reductions. Integrating these strategies can help align project-level mitigation with broader system conditions that influence travel behavior.

In some cases, evaluation under cumulative conditions may be appropriate, particularly where mitigation effectiveness depends on broader changes in land use patterns, multimodal accessibility, or regional travel behavior. Empirical research supports the importance of these broader conditions. For example, Salon (2014) found that households located in compact, mixed-use, and transit-accessible environments tend to generate substantially lower VMT compared to those in more auto-oriented contexts. Similarly, ongoing research by the University of California Institute of Transportation Studies has examined how system-level factors (such as roadway capacity, travel demand responses, and network characteristics) may affect the extent to which localized VMT reductions are realized at the regional scale. Together, this body of research suggests that the effectiveness of individual mitigation measures may be influenced by the broader land use and transportation context in which they are implemented.

Cumulative analysis, supported by appropriately sensitive modeling tools, can help illustrate how individual mitigation measures contribute to these broader outcomes, particularly where mitigation strategies are intended to support long-term shifts in travel behavior and development patterns.

Additional resources:

- CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024)
- Office of Land Use and Climate Innovation: SB 743 Frequently Asked Questions
- Salon (2014), Final Report of Quantifying the Effect of Local Government Actions on VMT
- UCLA Institute of Transportation Studies, Right-sizing Transportation Infrastructure to Reduce Vehicle Miles Traveled (project description) and Road Capacity as a Fundamental Determinant of Vehicle Travel: UC Institute of Transportation Studies (Report)
- Duranton and Turner (2011), The Fundamental Law of Road Congestion: Evidence from US Cities

Can mitigation be built into the project to reduce CEQA review?

Yes. If VMT-reducing features are part of the project description, CEQA evaluates the project as designed, which can reduce impacts and reduce the severity of a potential impact.

Additional resource: Plan Bay Area 2050+, CEQA Streamlining Exemptions

What types of projects don't require an Environmental Impact Report (EIR)?

Lead agencies can choose to rely on VMT impact screening for select project types where sufficient substantial evidence supports a presumption that the project would have a less than significant VMT impact. OPR's (California Governor's Office of Planning and Research is now California Governor's Office of Land Use and Climate Innovation (LCI)) *Technical Advisory* recommends a variety of screening options based on either project type (e.g., local serving retail) or location (e.g., within a low VMT zone or near a high-quality transit station). However, use of screening comes with CEQA adequacy risks since a complete VMT impact analysis is not being prepared.

Additional resource: Cupertino Citywide VMT Reduction Needs and Measures

Are free or subsidized transit passes effective as VMT mitigation?

Yes. Free or subsidized transit passes are recognized as potentially reducing VMT because they cause transit ridership to increase. Quantification of the effect size is contained in guidance such as CAPCOA's Handbook (2024). However, the CAPCOA quantification did not account for potential backfill effects of transit passes or subsidies, so refer to the first question in this section, "What makes VMT mitigation feasible under CEQA?"

Additional resources:

- Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program
- CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024)

Why does VMT matter even with electric vehicles (EVs)?

EVs reduce emissions per mile but don't address other effects of VMT on safety, noise, or infrastructure costs. For topics like safety, EVs can produce worse outcomes related to collision severity because the vehicles are heavier than gas-powered vehicles. Reducing total VMT remains essential alongside electrification.

Additional resource: Getting a "W" for Safety: Flipping the Script on the Safety "Es" in Search of a Winning Strategy

What is feasible for rural jurisdictions?

The CAPCOA Handbook (2024) includes a context filter that identifies which strategies may be effective in a rural area. These include improving pedestrian networks, employer sponsored vanpools, and transit-oriented development. Other transportation demand management strategies may be applicable but would depend on the specific project and local context.

Additional resource: SB 743 Policy Adoption Technical Assistance Program: Establishing an Infill and Affordable Housing Screen

4. Affordable Housing and Land Use as Mitigation

A common and sensitive policy question, including how context, location, and the analytical framework shape the answer.

What data exists on VMT reductions for affordable housing, especially in rural/suburban areas?

Throughout this and other responses, references to affordable housing as VMT mitigation refer to program-level, cumulative condition frameworks, not automatic project-level mitigation.

Available empirical data generally shows that affordable housing is associated with lower VMT compared to market-rate housing, primarily because lower-income households tend to have lower vehicle ownership, make fewer and shorter vehicle trips, and rely more on transit, walking, and shared travel modes (CAPCOA, 2024). In CEQA practice, these differences are often quantified using resources such as the CAPCOA Handbook, which provides screening-level estimates of VMT reductions based on observed differences in travel behavior. For example, CAPCOA Strategy T-4 reflects reduced VMT associated with affordable housing based on lower vehicle trip generation rates relative to market-rate units.

However, the strength and consistency of available data vary by geographic context. The empirical basis for VMT reductions associated with affordable housing is strongest in urban and transit-served areas, where lower-income households have greater access to alternative modes and shorter trip distances. In suburban and rural areas, by contrast, the available data is more limited and outcomes are more variable. While lower vehicle ownership and trip-making rates may still result in some reduction in VMT relative to market-rate housing, these effects may be offset by longer travel distances, limited transit availability, and more auto-oriented land use patterns. As a result, VMT reductions associated with affordable housing in suburban and rural contexts are generally smaller, less consistent, and more dependent on project location and regional travel conditions. Accordingly, analyses in these contexts typically place greater emphasis on project-specific conditions and may rely on additional supporting evidence or sensitivity testing where needed.

Additional VMT reductions may occur where affordable housing is located on infill sites, in proximity to jobs or services, or near high-quality transit; however, these location-based effects are also context dependent and are less consistently realized in lower-density areas.

When affordable housing is considered as mitigation under CEQA, evaluation of VMT effects depends on the analytical framework applied, including baseline assumptions and whether the analysis considers project-level or cumulative conditions. While new housing development may increase VMT relative to existing site conditions, CEQA analyses may also consider how different housing types influence travel behavior and VMT outcomes relative to foreseeable alternatives or broader development patterns.

In this context, potential VMT benefits associated with affordable housing are typically evaluated based on both household travel characteristics and project location. The extent to which affordable housing functions as an effective VMT mitigation strategy may therefore vary depending on land use context, multimodal accessibility, regional housing dynamics, and the assumptions applied in the CEQA analysis. In practice, CEQA analyses typically apply these data by comparing affordable and market-rate housing assumptions, documenting location specific factors (such as transit access and land use context), and explaining how these factors influence the expected VMT outcomes for the project.

Additional resource: CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024)

5. Mitigation Program Design

How VMT mitigation programs like Banks and Exchanges are structured and how state and local programs interact.

How far along is the state on developing AB 130?

Subject to final guidance, AB 130 establishes the framework for a statewide VMT mitigation bank that allows developers to satisfy transportation-related CEQA mitigation requirements. Project applicants can fund affordable housing and infrastructure projects through the Transit-Oriented Development Implementation Program, administered by the Department of Housing and Community Development (HCD). The bank is anticipated to be operational after July 1, 2026. Once operational, lead agencies have the discretion to allow project applicants to contribute to a state-managed fund in lieu of on-site VMT mitigation, with contribution amounts and eligibility determined by guidance from the Office of Land Use and Climate Innovation. Implementation details remain subject to revision through future guidance, rulemaking, or legislation.

Additional resource: Statewide Mitigation Bank for Significant Transportation Impacts

How will local mitigation programs compete or coexist with the state program?

It is anticipated that the AB 130 VMT mitigation bank will be voluntary, so it does not preclude the creation of other local VMT mitigation programs. Local programs could be voluntary, or they could be mandatory for cities and counties that decide to require them through impact fee programs typically connected to their general plans.

Lead agencies have discretion as to what programs ultimately meet the CEQA mitigation feasibility tests.

The statewide bank adds another mitigation option for lead agencies. For agencies that do not have a local program option and prefer not to rely on the state option, they may be expected to provide substantial evidence as to why the state option is not feasible per previous court decisions like *People's Collective for Environmental Justice v. County of San Bernardino* (Cal. Super. Ct., 2024, No. CIVSB2228456). This decision required the lead agency to provide substantial evidence supporting their decision to reject a mitigation measure.

Additional resource: Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program

How is "local region" defined for program eligibility?

The California Governor's Office of Land Use and Climate Innovation (LCI) (formerly the California Governor's Office of Planning and Research) is defining regional boundaries and "location efficient areas" through the draft *AB 130 Statewide Vehicle Miles Traveled (VMT) Mitigation Program Guidance* (April 2026), which will determine how close mitigation must be to the originating project. These definitions have not yet been finalized.

Additional resource: Statewide Mitigation Bank for Significant Transportation Impacts

Can non-transit-oriented projects opt into the bank program?

Yes, the California Governor's Office of Land Use and Climate Innovation (LCI) (formerly the California Governor's Office of Planning and Research) and California Department of Housing and Community Development (HCD) will define the eligibility framework, and non-Transit-Oriented Development (TOD) projects may qualify depending on the crediting rules and discounting methodology to be finalized in 2026.

Additional resource: Statewide Mitigation Bank for Significant Transportation Impacts

What tools determine which communities receive VMT banking credits?

The California Governor's Office of Land Use and Climate Innovation's (LCI) (formerly the California Governor's Office of Planning and Research) forthcoming guidance will establish how mitigation funds flow to communities, using definitions of "location-efficient areas" and regional proximity to match projects with eligible VMT-reducing investments.

Additional resources:

- AB 130 Statewide Vehicle Miles Traveled (VMT) Mitigation Program Guidance (Draft)
- Equitable VMT Mitigation Program, Reducing Driving from Development Projects (Santa Clara Valley Transportation Authority)
- Assembly Bill 130 Specifications
- Exploring Equity Frameworks for a Cross-Jurisdictional Vehicle Miles Traveled Mitigation Program in Santa Clara County
- Developing an Equitable VMT Mitigation Program for Santa Clara County Webinar

6. Mitigation Program Implementation

What it takes to fund, administer, monitor, and maintain VMT mitigation programs over time.

Are there consistent thresholds across agencies?

Thresholds are not consistent statewide. Practitioners often follow OPR's (California Governor's Office of Planning and Research is now California Governor's Office of Land Use and Climate Innovation (LCI)) *Technical Advisory* recommendations when lead agencies have not formally assessed their threshold options and adopted thresholds by ordinance or resolution as advised in the CEQA Guidelines. For those agencies that understand their discretion under CEQA, numeric thresholds can deviate substantially from state recommendations, especially for cities and counties that rely on the general plans to establish threshold values.

Additional resource: OPR's (California Governor's Office of Planning and Research is now California Governor's Office of Land Use and Climate Innovation (LCI)) Technical Advisory

How do VMT mitigation programs ensure additionality?

VMT mitigation programs ensure additionality (a policy outcome) by only including VMT reduction strategies that would not occur without the program. Depending on the type of program (bank/exchange or impact fee), the additionality test may require other steps. For example, a VMT mitigation bank must first create VMT reductions by funding and implementing VMT reduction strategies that would not otherwise have occurred. Only after that has occurred can the bank create credits that are priced and sold for mitigation purposes. An exchange is simpler in that it offers a menu of VMT reduction strategies that have no committed funding and would not otherwise be implemented except through the exchange program. An impact fee program depends on whether it is an AB 1600 program or an in-lieu program. AB 1600 programs would ideally be identified in the city or county general plan (or a specific plan) as an implementing mechanism to pay for the VMT mitigation necessary to reduce the plan's VMT impact. The mitigation would include VMT reduction strategies that would not otherwise occur to pass the additionality test. Presuming the fee program revenues combined with other committed funding will produce a fully funded program, then subsequent development projects consistent with the general plan simply pay the applicable impact fees as their contribution to mitigating the general plan VMT impact. In-lieu programs collect a fee payment without the stringent nexus requirements of the AB 1600 programs. They do not have a formal capital improvement program and typically rely on a menu of VMT reduction strategies that the city or county promises to spend fee revenue to implement. This list should only include VMT reduction strategies that would not otherwise occur to pass the additionality test.

Additional resources: See the policy outcome highlighted in the 2018 report *Implementing SB 743: An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks* and 2021 Caltrans *VMT Program Bulletin 21-01: VMT Mitigation Funding Status and Additionality* where a VMT mitigation program is required to achieve VMT reduction above and beyond what would have occurred in the program's absence.

Can developers buy credits as mitigation under CEQA?

Yes, developers may buy verified VMT reduction credits when allowed by a lead agency or regional program, provided the credits meet CEQA's nexus, proportionality, enforceability, and additionality requirements.

Additional resource: Regional VMT Mitigation Program Development for San Bernardino County Transportation Authority (SBCTA)

Are programs mitigating VMT from development, transportation, or both?

Programs may mitigate VMT from either development or transportation projects, depending on the administrator's authority and program design. What a program may fund depends on the administering entity's legal authority and the program structure (AB 1600 impact fee vs. bank vs. exchange vs. in lieu fee programs).

Additional resource: Research Scan of Statewide Practices in VMT Mitigation (Appendix C)

What is the cost per vehicle mile reduced?

VMT reduction costs vary widely depending on methodology, region, type of mitigation and its lifecycle, land use context, and project scale. Comparing costs across strategies is challenging since lifecycles often vary substantially. For example, purchase of an annual transit pass will only provide VMT reduction for one year, whereas, constructing a pedestrian network expansion can last for 40 or more years depending on maintenance and will continue to reduce VMT during that entire period. Some program designs include lifecycle costs and perform normalizations to allow direct comparisons for cost effectiveness. Examples are provided below.

Additional resources:

- Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program
- Equitable VMT Mitigation Program, Reducing Driving from Development Projects (Santa Clara Valley Transportation Authority)
- VMT/GHG Model Mitigation Program for City/County Association of Governments of San Mateo County

What is the overhead cost (percentage basis)?

Overhead (or administrative) costs have ranged from about 1-5% in California for conventional impact fee programs. This range is likely applicable to VMT mitigation exchanges and impact fee programs but underestimate the cost of banks, which involve much higher expectations for VMT reduction quantification, verification, and monitoring.

Additional resource: Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program

What are the main challenges to VMT mitigation program implementation?

Jurisdictions face limited staff capacity, technical constraints, high baseline VMT levels with few feasible mitigation options, and low public familiarity with VMT concepts, challenges that are particularly acute in smaller and rural communities. Developing VMT mitigation through the general plan can help address these barriers by reducing the burden on individual project-level implementation and providing a consistent, programmatic framework for mitigation.

Additional resources:

- Safeguarding Equity in Off-Site Vehicle Miles Traveled (VMT) Mitigation in California
- Exploring Equity Frameworks for a Cross-Jurisdictional Vehicle Miles Traveled Mitigation Program in Santa Clara County

Has the cost of mitigation actions been a barrier?

Yes. Some lead agencies have reported high or unpredictable costs, particularly where feasible mitigation options are limited or require long-term operating funds. This uncertainty reinforces the value of programmatic and nexus-based transportation fee programs where possible. However, there are many instances where a lead agency exempts or screens projects from a VMT assessment, which results in zero mitigation costs.

Additional resource: Equitable VMT Mitigation Program, Reducing Driving from Development Projects (Santa Clara Valley Transportation Authority)

How do you ensure mitigation lasts for the duration of the impact?

Under CEQA, mitigation monitoring requirements are tied to the mitigation measures adopted, not to the duration of the project. CEQA Guidelines §15097 require lead agencies to monitor and verify that adopted mitigation measures are implemented. Performance monitoring can be added to mitigation, which is more common when a less than significant impact finding relies on a performance standard and monitoring to support the impact conclusion. Under this condition, mitigation monitoring of VMT performance may be required for the duration of a project or until sufficient evidence demonstrates the project's VMT performance is below the threshold and is likely to remain there.

Additional resources:

- Western Riverside Council of Governments: Regional VMT Mitigation Program Implementation Manual
- Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program

How do you prevent gaming of commuter programs, and what funds pay users?

Programs prevent gaming by requiring verifiable, independently monitored behavior data and using controls such as trip validation, geofencing, and audit checks. The monitoring must demonstrate that VMT reduction has occurred. Incentive payments may come from a variety of sources including new taxes, public agency budgets, grant programs, or mitigation payments for VMT reduction credits that produce new revenue.

Additional resource: Regional VMT Mitigation Program Development for San Bernardino County Transportation Authority (SBCTA)

7. Legal Risks & Evidence-Based Approaches

How substantial evidence, feasible mitigation, and CEQA strategy shape defensible decisions.

Have mitigation programs been challenged legally? What will courts say about sufficient mitigation?

No, VMT mitigation banks have not been litigated yet, but courts would likely evaluate such programs by applying established CEQA principles requiring mitigation to be feasible, enforceable, proportional, evidence-based, and additional. Programs must demonstrate real, quantifiable VMT reductions supported by substantial evidence.

Additional resources:

- Center for Biological Diversity, LLC v. Department of Fish and Wildlife (2015)
- Golden Door Properties, LLC v. County of San Diego (2020)
- Tsakopoulos Investments, LLC v. County of Sacramento (2023)
- Cleveland Nat. Forest Foundation v. County of San Diego (2025)

Why aren't strategies like road diets or congestion pricing used as mitigation?

These strategies can be used as VMT mitigation, but agencies must first show they deliver measurable, additional VMT reductions without backfilling or inducing offsetting travel elsewhere. Their applicability depends on jurisdictional authority and the ability to document VMT effects with substantial evidence.

Additional resource: CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reduction, Assessing Climate Vulnerabilities, and Advancing Health and Equity (October 2024).

Why should agencies adopt VMT mitigation programs instead of Statements of Overriding Considerations?

VMT mitigation programs expand the feasible mitigation available for projects while adding certainty to the cost of development. Often, the specific mitigation actions included in these programs are transit and active mode improvement projects already identified in local or regional plans but unfunded. If a program does not exist, then mitigation is limited to what can be implemented on site, which is often less effective than community-scale strategies and leads to significant and unavoidable VMT impacts. When this occurs, lead agencies may adopt a Statement of Overriding Considerations to disclose and accept significant and unavoidable impacts, consistent with CEQA.

Additional resources:

- 2025 CEQA California Environmental Quality Act Statute & Guidelines
- California Code of Regulations Title 14, § 15093 – Statement of Overriding Considerations

8. Equity

How equity, community outcomes, and regional coordination influence VMT mitigation programs.

How could a VMT Exchange address geographic equity issues?

A VMT Exchange can address geographic equity by directing mitigation investments based on local context, recognizing that different communities require different outcomes. In some areas, equitable outcomes may produce VMT reductions, while in others (particularly communities with constrained mobility), improving access to jobs and services may require increasing access to automobiles, thereby increasing VMT.

Additional resources:

- Exploring Equity Frameworks for a Cross-Jurisdictional Vehicle Miles Traveled Mitigation Program in Santa Clara County
- Equitable VMT Mitigation Program for Santa Clara County
- Los Angeles Metro Vehicle Miles Traveled Mitigation Program: A regionwide strategy to cut car travel and reinvest in walking, biking, transit and affordable housing.

Are you concerned about multiple agencies implementing their own strategies?

Multiple agencies implementing VMT reduction strategies is not inherently a concern, as VMT mitigation naturally operates at different scales. Local agencies can implement General Plan–based measures, counties can address interjurisdictional mitigation, and regional or state programs can deliver broader VMT reduction actions.

Additional resource: Sonoma County Vehicle Miles Traveled: Mitigation Banking and Exchange Program.

Are credits expected to be in higher demand than supply?

Demand and supply for VMT reduction credits is uncertain at this time as there are no operating VMT mitigation banks, although SBCTA has initiated a pilot program. Local, regional, and state agencies have taken a cautious approach to developing new VMT mitigation programs, especially banks, so this implies that high demand may not exist. Combined with the fact that CEQA mitigation is subject to a feasibility test of which cost is a factor, it is uncertain if the cost of creating VMT reductions for a bank can be fully repaid through the selling of credits.

Additional resource: SBCTA Pilot VMT Mitigation Bank to Support Sustainable Development

What other equity-centered co-benefits could be leveraged by VMT mitigation programs?

Equity-centered VMT mitigation can advance affordability, access, and public health by prioritizing investments in transit-oriented affordable housing, active transportation, and reliable transit service. When paired with inclusive engagement, local hiring, and community-focused improvements, these programs can reduce transportation burdens while delivering durable social, economic, and environmental benefits. However, since disadvantaged communities tend to generate lower VMT than higher-income communities, the potential scale of VMT reductions in those areas may be more limited (Kim et al., 2025).

Additional resources:

- Exploring the Equity Effects of VMT Mitigation Measures
- Equitable VMT Mitigation Program for Santa Clara County
- Safeguarding Equity in Off-Site Vehicle Miles Traveled (VMT) Mitigation in California

9. Trends & Innovation

Emerging issues, tools, and policy shifts shaping the future of VMT practice.

How will new housing and CEQA laws impact mitigation approaches?

New housing-focused CEQA exemptions and streamlining laws may reduce or alter project-level CEQA analysis mitigation requirements for discretionary projects, particularly infill and affordable housing, shifting the focus away from project-level mitigation. In response, local agencies are showing more interest in mandatory programs like impact fees that apply to all development at the building permit or certificate of occupancy.

Additional resource: SB 743 Policy Adoption Technical Assistance Program: Establishing an Infill and Affordable Housing Screen.

How are emerging tools (including AI) being used in VMT analysis and program administration?

The use of AI is still emerging and largely limited to supportive functions such as data analysis, modeling, and monitoring. At this stage, AI is not driving decision-making but may help improve efficiency and consistency as programs mature.