Appendix A – VMT Mitigation Program Structures Factsheet

FEHR PEERS

PURPOSE

VEHICLE MILES TRAVELED MITIGATION

PURPOSE OF CALIFORNIA'S SENATE BILL 743

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that has fundamentally changed transportation impact analysis as part of California Environmental Quality Act (CEQA) compliance. SB 743 has goals related to **public health**, meeting **housing demand through infill development**, and **reducing greenhouse gas (GHG) emissions**. In order to encourage this shift, transportation impacts are now determined based on **vehicle miles traveled (VMT)**, rather than level of service (LOS) or other measures of traffic congestion.

By using VMT as a metric to determine transportation impacts, **development is encouraged in places where trips are short.** The close proximity of destinations in these places makes walking, bicycling, and transit viable and competitive with driving. As population and employment growth are attracted to these places, **the net effect over time is to reduce per-capita VMT and its adverse effects on the environment.**

HOW CEQA VMT MITIGATION WORKS TODAY

If a project causes a significant VMT impact, the project is required to mitigate to the fullest extent feasible. The number of feasible strategies for reducing VMT from an individual project is limited. Most of the on-site VMT mitigation strategies are highly dependent on who will occupy the buildings, which may not be known at the outset of a project and may change throughout the project's lifespan. The effectiveness of on-site VMT mitigation strategies is therefore difficult to quantify with a high level of confidence. The VMT mitigation strategies that can be quantified may still only offer limited VMT reduction potential.

HOW TO EXPAND CEQA VMT MITIGATION OPTIONS

A "program approach" to VMT mitigation expands the feasible VMT mitigation options to include off-site strategies that can extend from the project site neighborhood to regional in scale. These strategies may take the form of infrastructure expansion such as new bicycle facilities or programs/services that influence travel demand.

The establishment of such a VMT Mitigation Program is a high priority for California jurisdictions searching for effective mitigation approaches as lead agencies and project applicants work through the initial years of the transition to a VMT metric. CCTA has taken the lead on exploring the possibility in Northern California.

This VMT Mitigation Program Fact Sheet summarizes the possibilities, the outstanding questions, and some initial work currently underway.

VMT MITIGATION PROGRAMS

PROGRAM OPTIONS

CCTA has identified a need to **EXPAND CEQA VMT MITIGATION OPTIONS** beyond the project site to achieve our sustainable transportation goals.

CCTA is exploring how this might work in practice through impact fees, exchanges, and banks.

DEFINITIONS

VMT
Vehicle Miles Traveled

Mitigation Program
Refers to the impact fee, exchange, or bank

Mitigation Action
Capital improvement projects, programs, services, or operations and maintenance efforts that are delivered through a mitigation program

Project
Development or transportation project requiring mitigation

VMT-based Impact Fees

- Allow a project applicant to **pay a fee** toward the cost of a set of VMT-reducing capital improvement projects that are sufficient to mitigate General Plan-level[1] VMT impacts
- Could include **a range of infrastructure projects**, consistent with the General Plan and CEQA expectations and designed to reduce VMT
- **May not achieve full VMT reduction** necessary to mitigate impact to a less than significant level

VMT Exchanges

- Allow a project applicant to **fund and/or implement a mitigation action** off a pre-qualified list or propose a new one
- Expand **mitigation actions beyond capital improvement projects** (i.e., increasing transit service frequency, operating a car sharing program, etc)
- **May not produce scalable VMT reductions** that would match project impact responsibility

VMT Banks

- Create a monetary value for VMT reduction such that a project applicant could purchase **VMT reduction credits**
- Create a **marketplace for VMT reduction** by establishing a bank administrator capable of pricing VMT reduction actions and adjusting those prices over time
- Provide certainty in development costs, scaled to project's impact responsibility, and **could allow for full impact mitigation**

[1] Fee programs may also be developed for other types of land use plans such as community plans and specific plans.

VMT MITIGATION PROGRAMS

PROGRAM OPTIONS

AGENCY OVERSIGHT & FUNDING	VMT-based Impact Fees	VMT Exchanges	VMT Banks
Who pays who?	**Project Applicant → Lead Agency**	**Project Applicant → Lead Agency** or **Project Applicant → Lead Agency → Exchange Mitigation Action** or **Project Applicant → Exchange Mitigation Action**	**Project Applicant → Lead Agency** or **Project Applicant → Lead Agency → Exchange Mitigation Action** or **Project Applicant → Exchange Mitigation Action**
Who implements the mitigation action?	**Lead Agency**	**Lead Agency** or **Project Applicant**	**Banks**
PROGRAM CRITERIA & EFFICACY			
What types of mitigation actions can be funded?	**Capital improvement projects** *Note:* Some jurisdictions have incorporated transit service and Transportation Demand Management (TDM) strategies to their Capital Improvement Plans.	**Capital improvement projects, programs, services, or operations & maintenance efforts**	**Capital improvement projects, programs, services, or operations & maintenance efforts**
MONITORING			
What is being evaluated?	**Capital Improvement Plan implementation**	**Depends on how a project's impact and mitigation is structured in the EIR** May need to evaluate mitigation action implementation and/or VMT reduction performance over time	**Depends on how a project's impact and mitigation is structured in the EIR** May need to evaluate mitigation action implementation, VMT reduction performance over time, and/or market price changes for VMT reduction over time
Who evaluates the mitigation action?	**Lead Agency**	**Lead Agency**	**Lead Agency, Bank, or other designated third party**
How frequently does evaluation occur?	**Fee program costs are updated annually** and five year checks are mandatory in the statute	**Dependent on how a project's impact and mitigation is structured in the EIR**	**Regularly**—possibly every year
CEQA COMPLIANCE			
What is the CEQA mitigation potential?	May allow for full mitigation for projects **consistent with a General Plan for which the fee program was designed to mitigate a VMT impact in the General Plan EIR**	May allow for full mitigation depending on rigor of data collection and analysis, but **depends on availability and lifespan of mitigation actions**	May allow for full mitigation but **depends on the VMT reduction performance of Bank strategies and market conditions affecting prices over time**
GEOGRAPHY, DURATION & EQUITY			

Three key topics to be addressed through this project include: Defining the right **geographic scale and boundary** for a mitigation program, understanding a project applicant's required **duration of participation**, and understanding the **equity-related impacts and trade-offs** with respect to VMT reduction effectiveness.

Appendix B – Stakeholder Engagement Plan

FEHR PEERS

Memorandum

Date: October 15, 2021

To: Matt Kelly and Stephanie Hu, CCTA

From: Julie Morgan and Sarah Peters, Fehr & Peers

Subject: VMT Mitigation Framework Task 1.3: Draft Stakeholder Outreach Plan

WC21-3806

The Contra Costa Transportation Authority (CCTA) is developing a regional framework to mitigate Vehicle Miles Traveled (VMT) impacts associated with new development and transportation infrastructure. The resulting VMT Mitigation Program will support CCTA member jurisdictions as they make land use and transportation decisions that reduce reliance on single-occupant vehicles. To complete this work, CCTA has engaged a consultant team, led by Fehr & Peers, and will conduct in-depth engagement with project stakeholders.

This memorandum defines the VMT Mitigation Framework project's priorities for engaging stakeholders and technical advisors, defines the role of the Project Advisory Committee (PAC), identifies important stakeholders, and describes how the PAC will be engaged at specific points in the study.

Engagement Priorities

Technical advisors and other stakeholders will be engaged throughout the project to guide the development of the VMT mitigation program. Regular input from those people will ensure that the proposed program can be implemented using a reasonable level of effort and resources and will advance public and private goals for future growth in Contra Costa County. Their input will be critical to:

- Defining the program's scope, scale, and administrative processes
- Identifying environmental mitigation measures that are effective at reducing VMT and feasible to implement
- Determining public agency roles in administering the program and implementing mitigations

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- Exploring and attempting to mitigate potential legal risks associated with the proposed program
- Discussing how program benefits and burdens can be equitably distributed

Project Advisory Committee

The PAC will provide input and guidance from two key groups of stakeholders:

- Implementers: Representatives of organizations who would implement the proposed program or who have expertise with similar programs.
- Collaborators: External stakeholders whose work and interests would be affected by the proposed program.

PAC members will be engaged at regular meetings where project team members will present progress and receive feedback. The PAC will also review and comment on draft documents prepared by the consultant team.

PAC Members

PAC members will represent a wide variety of viewpoints, including public agencies, private developers, and advocates, as described below.

Lead Agencies

Staff from public agencies who commonly serve as lead agencies on CEQA documents in Contra Costa County and who could be responsible for implementing a VMT mitigation framework will be consulted to ensure that the proposed program would be technically robust, feasible, and consistent. This group could include staff from CCTA, Contra Costa County, and the cities/towns of Contra Costa.

State and Regional Partners

Staff from public agencies with relevant expertise on transportation, land use, and VMT will be invited to share their perspectives on large-scale mitigation programs and lessons learned from similar efforts. This group could include staff from California Air Resources Board, Caltrans, and possibly regional bodies such as MTC and ABAG.

Public Service Providers

Transit agencies and providers of other transportation services will be consulted to identify opportunities to partner on VMT mitigation strategies and to identify potential challenges that could arise from the proposed program. This group could include staff from BART, AC Transit, WestCAT, County Connection, Tri-Delta Transit, and 511 Contra Costa.

Developers and Environmental Professionals

Land use and development professionals whose projects would be eligible to participate in a VMT mitigation program will be invited to share their interests and concerns about such programs and to provide guidance on CEQA compliance and lessons learned from a user perspective. This group could include representatives from the Building Industry Association and other residential and commercial developers active in Contra Costa County, CEQA and land use attorneys, and consultants and public agency staff who prepare and review environmental documents.

Advocacy organizations

Organizations that work in Contra Costa County and throughout the Bay Area to promote equitable and sustainable planning and policy will be invited to share their priorities for and concerns about a VMT mitigation program. Participants may include representatives from TransForm, Greenbelt Alliance, SPUR, and Save Mount Diablo, among others.

Engagement Approach

The PAC will be engaged throughout the project using a combination of virtual and in-person techniques, depending on current health guidance and group member availability and preferences.

The PAC will meet approximately every two to three months to provide input on program approach and to review presentations and provide feedback on draft deliverables. Draft documents will be provided to PAC members at least one week in advance of these meetings via a Microsoft SharePoint site, which will allow members to collaborate on document review and comments, and/or via email if needed. PAC members will be given time after each meeting to provide comments on draft documents.

PAC Meetings

PAC meetings are described below and summarized in the attached schedule.

- **Project Introduction (PAC Meeting #1):** The first project meeting will introduce the study to PAC members and provide a baseline level of understanding related to VMT mitigation fee programs, VMT mitigation exchanges, and VMT mitigation banks. The meeting will include presentations from the project team and brief breakout discussions to define successful outcomes for the recommended program. The meeting is planned for September 2021.
- **PAC Meeting #2: Program evaluation criteria**: PAC members will brainstorm evaluation criteria during their second meeting, planned for late fall/early winter 2021.
- **PAC Meeting #3: Review draft evaluation criteria**: PAC members will provide feedback on draft evaluation criteria during their third meeting, tentatively planned for early 2022.

- **PAC Meeting #4: Define program options**: Project team will present and collect initial feedback on the four program options; tentatively planned for early Spring 2022.
- **PAC Meeting #5: Evaluate program options**: PAC members will provide additional feedback on the program options and discuss the results of the project team's evaluation of the four program options.
- **PAC Meeting #6: Present administrative draft program:** The project team will present the administrative draft program and Technical Justification memorandum and respond to initial questions from the PAC.
- **PAC Meeting #7: Review administrative draft program:** The project team will solicit detailed feedback from PAC about the administrative draft program and Technical Justification memorandum.
- **PAC Meeting #8: Present final draft program:** The project team will present the final draft program to the PAC, respond to questions, and solicit initial feedback.
- **PAC Meeting #9: Present final program:** The project team will present the final program to the PAC.

Appendix C – Presentations and Notes from Project Advisory Committee Meetings

FEHR PEERS

CONTRA COSTA transportation authority

VMT Mitigation Framework for Contra Costa

Responding to the Challenge Of VMT Reduction under CEQA

September 2021

WELCOME!

INTRODUCTION

Agenda

2:00-2:10 pm	Introduction
2:10-2:20 pm	Project Goals
2:20-2:35 pm	Technical Background
2:35-3:00 pm	VMT Mitigation Approaches
3:00-3:05 pm	Break
3:05-3:30 pm	Breakout Sessions
3:30-3:50 pm	Report Back
3:50-4:00 pm	Next Steps

INTRODUCTION

Project Background

CCTA role

- Lead agency for study of framework options
- Supporting land use and transportation planning through Growth Management Program
- Supporting member jurisdictions in implementing SB 743

Project history

- 2018-2019: CCTA member jurisdictions support regional solution for VMT mitigation
- 2020: Regional VMT mitigation program included in TEP
- 2020: Study funded through Caltrans Sustainable Communities Transportation Planning Grant
- 2021: RFP issued and consultant team selected

INTRODUCTION

Study Objectives

1) Develop an approach for mitigating VMT increases from land development and transportation projects in Contra Costa

2) Develop a framework for a VMT Mitigation Program and determine whether an Impact Fee, Mitigation Bank, or Exchange would be most appropriate

3) Position Contra Costa lead agencies to be compliant with changes to CEQA transportation-related impacts under SB 743

Challenges of VMT Mitigation

FRAMEWORK PROJECT GOALS

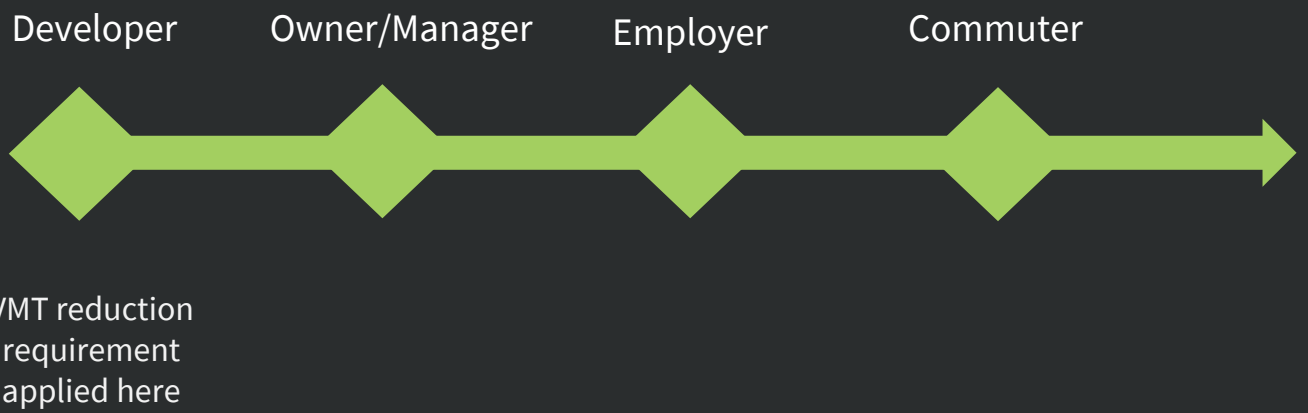
Challenge: Who Decides?

Commercial Property

FRAMEWORK PROJECT GOALS

Challenge: Who Decides?

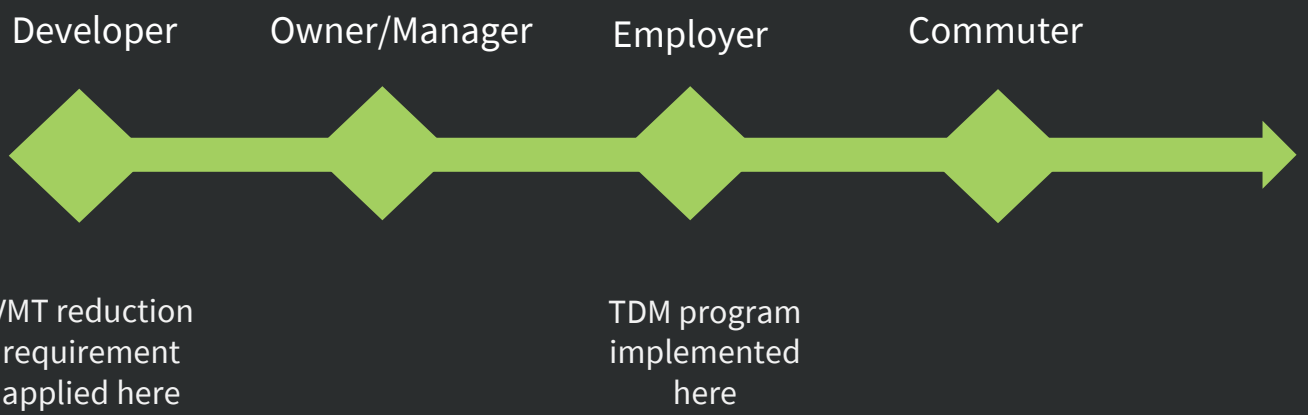
Commercial Property



FRAMEWORK PROJECT GOALS

Challenge: Who Decides?

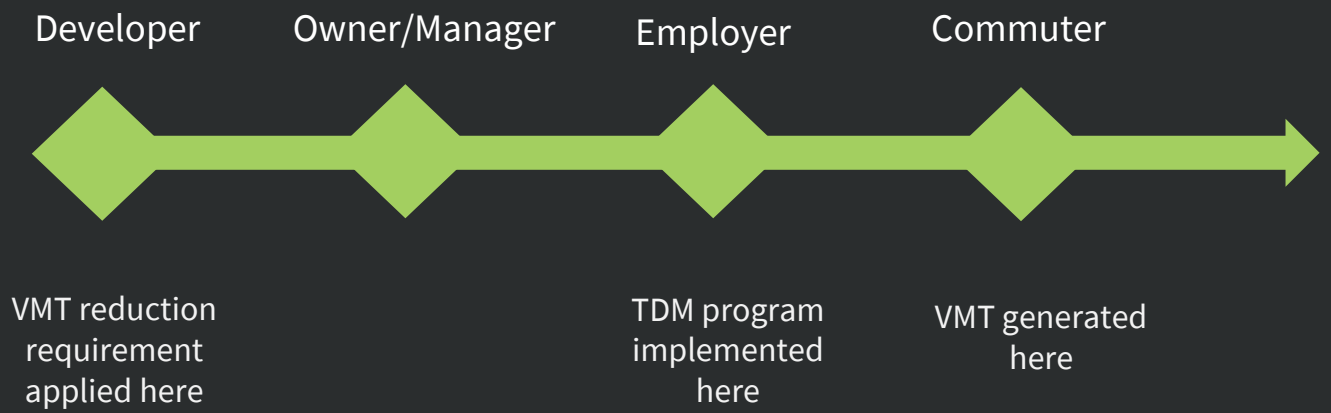
Commercial Property



PROJECT OVERVIEW

Challenge: Who Decides?

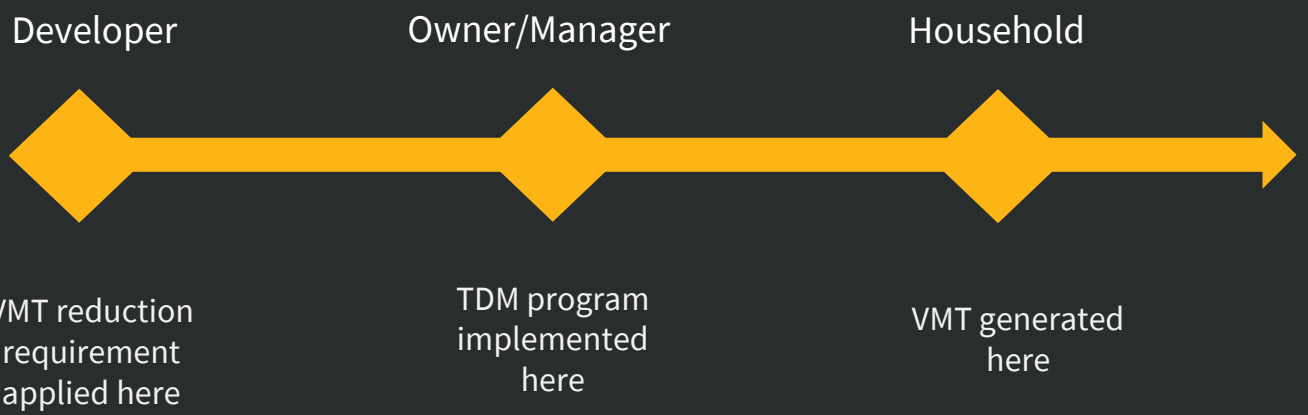
Commercial Property



FRAMEWORK PROJECT GOALS

Challenge: Who Decides?

Residential Property



FRAMEWORK PROJECT GOALS

Challenges

- The commitment to reduce VMT is far upstream from the behavior that actually changes VMT
- VMT is conceptually simple – but calculating it and tracking it consistently over time is complicated
- CEQA requires that impacts be mitigated to the extent feasible, and that conclusions be supported by substantial evidence
- Project-specific VMT reduction strategies have limited effectiveness and are dependent on local/regional context

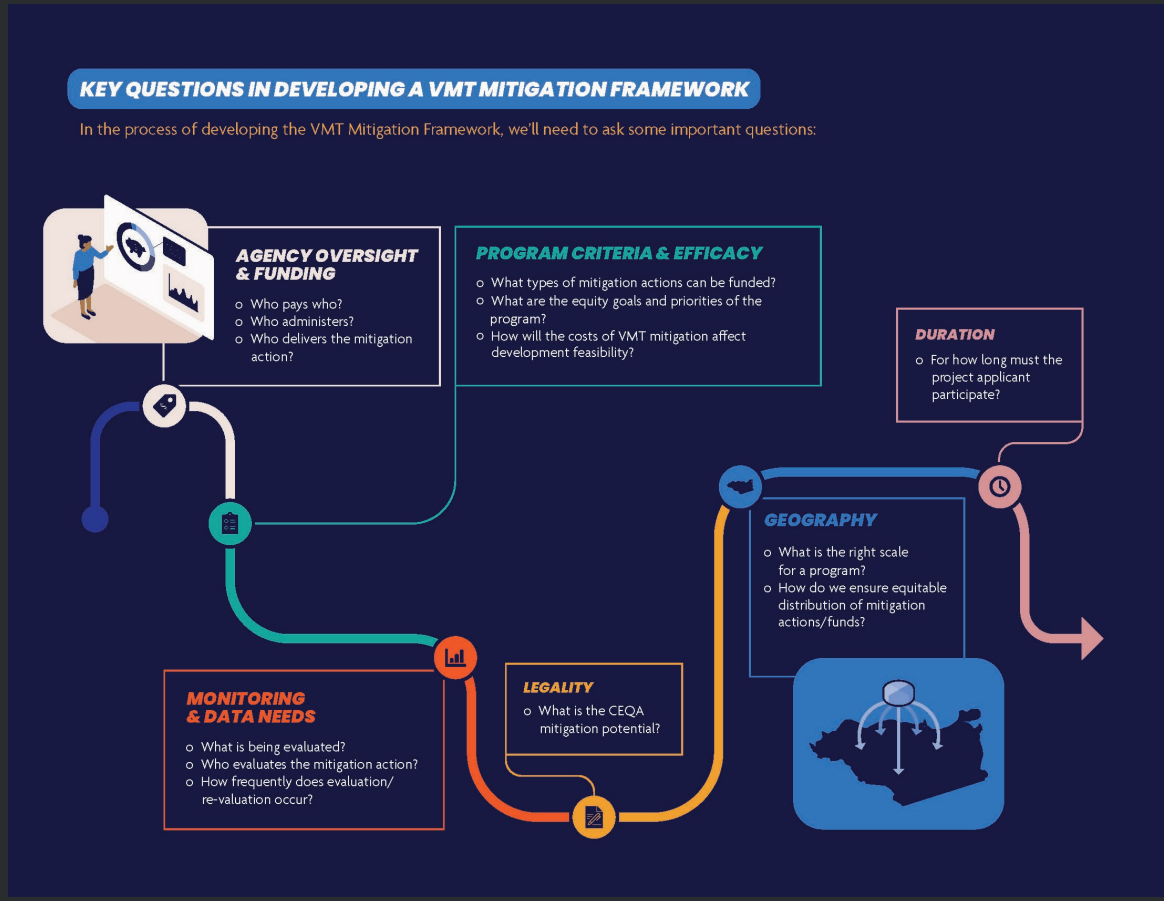
FRAMEWORK PROJECT GOALS

Responses

- Develop approach to mitigate VMT impacts of land development and transportation infrastructure projects using best available evidence
- Explore varied options for program's legal basis, effectiveness, costs, and administrative framework
- Get frequent input from important stakeholders to test program's efficacy and feasibility

FRAMEWORK PROJECT GOALS

Study Process



FRAMEWORK PROJECT GOALS

Project Advisory Committee

As a member of the PAC, we are hoping that you can:

- Share your perspective on the needs for a VMT Mitigation Program in Contra Costa
- Provide guidance on how the program should be designed and evaluated
- Review deliverables and help shape the VMT Mitigation Program
- Spread awareness of the program in communities across Contra Costa County

FRAMEWORK PROJECT GOALS

PAC Inputs

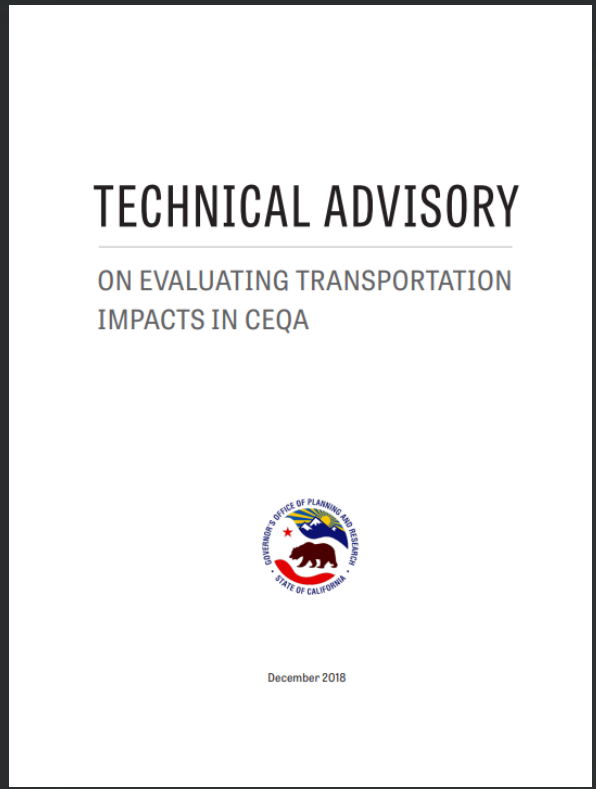
- Brainstorm Evaluation Criteria – Late 2021
- Solidify Evaluation Criteria – Early 2022
- Define Program Options – Spring 2022
- Evaluate Program Options – Summer 2022
- Review Draft Program – Late 2022
- Review Final Program – Early 2023

Technical Background

TECHNICAL BACKGROUND

SB 743

SB 743 aligns the metrics used to determine CEQA impacts in the Transportation category with state GHG goals



TECHNICAL BACKGROUND

VMT Trends

TECHNICAL BACKGROUND

Mitigation Approaches

What's Feasible?

On-Site Mitigation Options

- Change the physical design or location of the project
- Implement Transportation Demand Management (TDM) measures

Challenges

- Most projects can accommodate only limited changes in design or location while still being feasible and achieving their purpose and need
- Effectiveness of TDM programs depends on building tenants, which are often unpredictable and change over time

TECHNICAL BACKGROUND

Mitigation Approaches

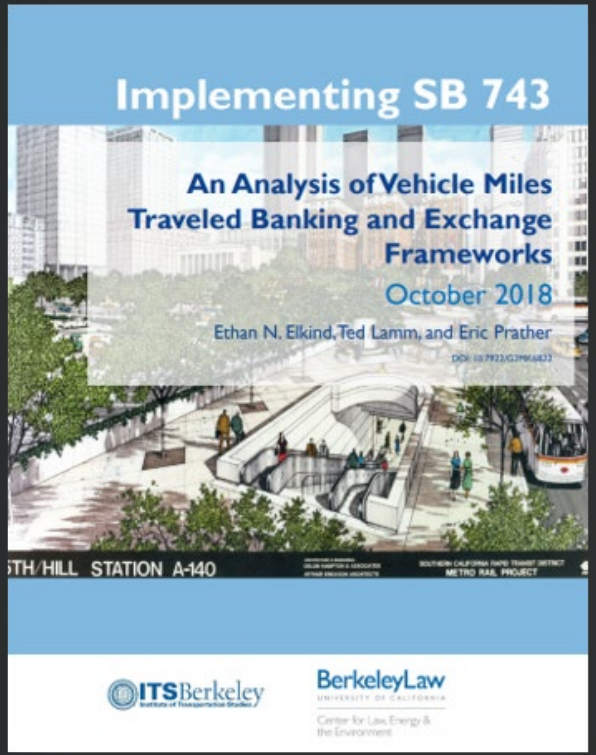
What's Feasible?

Off-Site Mitigation Options

- Increased transit services and/or reduced fares
- Bicycle and pedestrian infrastructure and services
- Carshare/bikeshare programs

Challenges

- Must comply with legal requirements, which are untested in this context
- Affordability and ability to monitor effects over time



VMT Mitigation Approaches: Impact Fees, Banks & Exchanges

Interactive Poll

How familiar are you with the idea of a VMT mitigation program such as a bank or exchange?

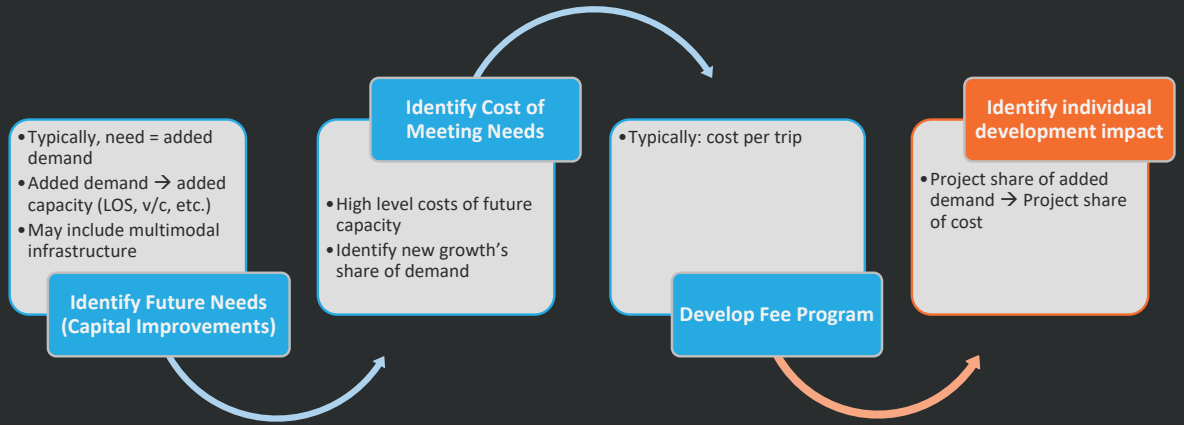
Similar concepts: cap and trade, wetlands mitigation banking

VMT MITIGATION APPROACHES

VMT Impact Fees

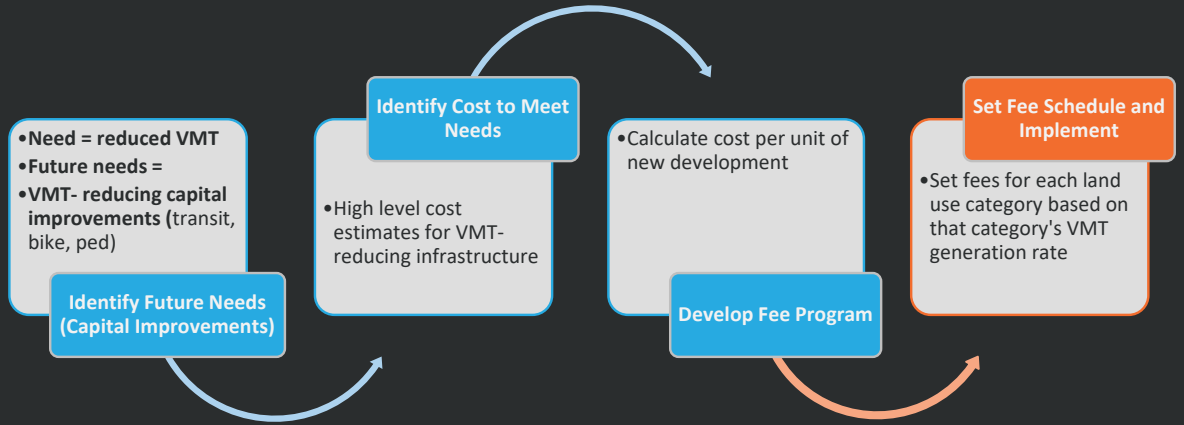
VMT MITIGATION APPROACHES

How do impact fees work?



VMT MITIGATION APPROACHES

What if we made impact fees VMT-based?



VMT Bank & Exchange

VMT Mitigation Banks

create a **monetary value** on VMT Reduction such that a developer could purchase VMT reduction **credits**.

VMT Mitigation Exchanges

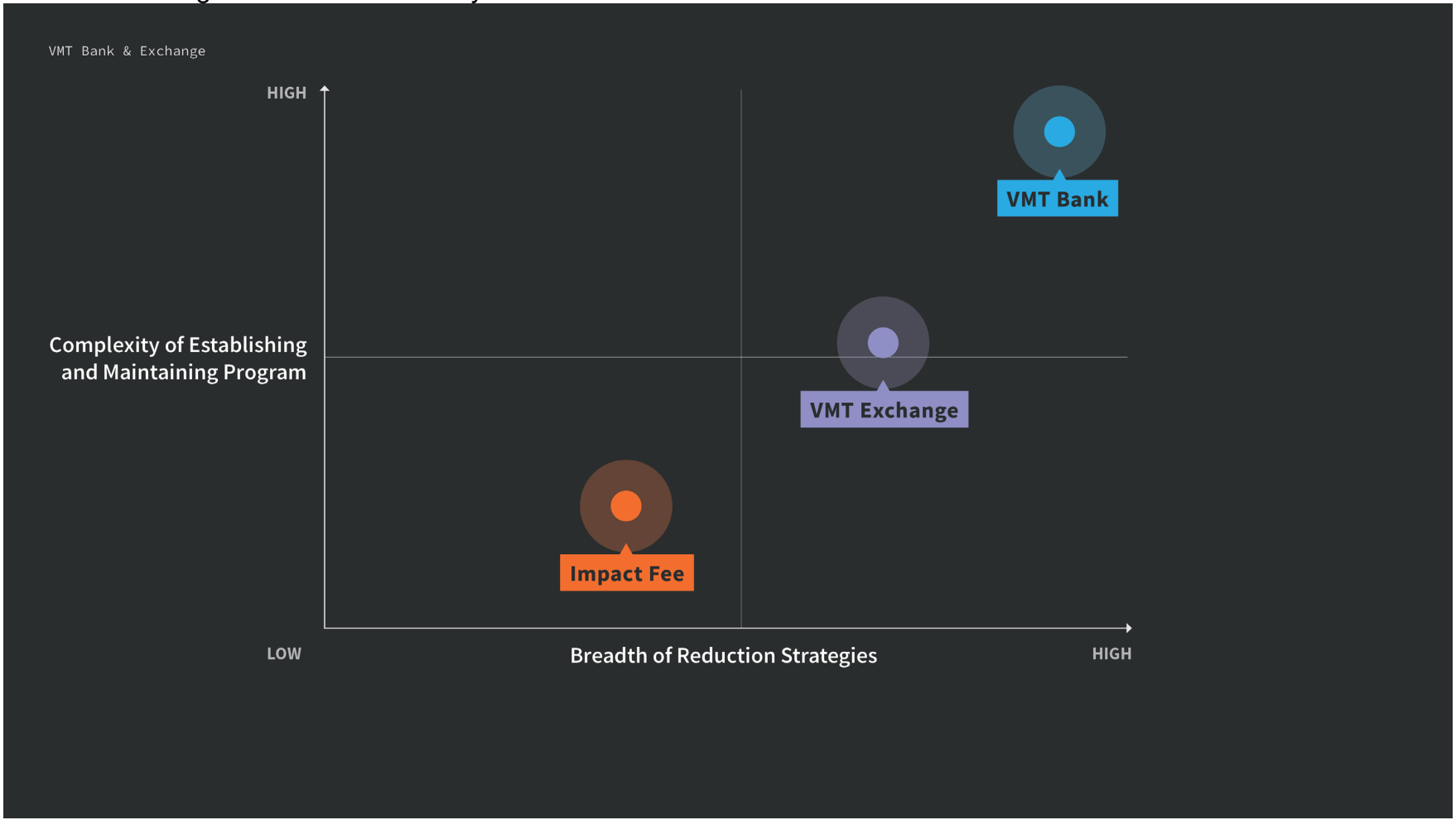
require the developer to **fund and/or implement** VMT-reducing **infrastructure or programs** off a pre-qualified list, or propose a new one.

VMT Bank & Exchange

Benefits	Challenges
Expands mitigation options to include a longer list of infrastructure projects, cost for programs, operations, and maintenance	**Increases mitigation costs for developers** because it increases feasible mitigation options
Creates the potential to quantify VMT reductions which would allow for projects to be fully mitigated	**Requires extensive data analysis and demonstration of 'additionality'** with potential privacy concerns if there is a third-party administrator
Allows for mitigation projects that serve multiple jurisdictions creating the potential for more equitable distribution of infrastructure projects/programs	**Geographic distribution** of mitigation projects and programs can become political
Takes advantage of economies of scale increasing the potential for VMT reduction by allowing for regional-scale infrastructure projects and programs	**Requires more investment in agency oversight** and administration due to larger-scale, regional focus
New efficiencies may be created by pursuing these models	**Unprecedented with unknowns** such as the required timeframe for mitigation

VMT Bank & Exchange

Bank	Exchange
⊕ **Projects can be fully mitigated** under CEQA due to the valuation of VMT	⊖ **Projects may not be able to claim a less than significant impact** depending on rigor of data collection and analysis of mitigation actions
⊕ **Multiple agencies can deliver mitigations** not just the lead agency, which could greatly expand the infrastructure project/program list	⊖ **Mitigation actions are limited to a pre-qualified list determined by the lead agency.** A developer can propose a new infrastructure project or program subject to lead agency verification.
⊕ **Added certainty to development costs** compared to an exchange	⊖ **Potential mismatch** between mitigation need and infrastructure improvements and programs
⊖ **Requires strong nexus** to determine VMT credits for each mitigation/action and to assign a monetary value to VMT	⊕ **Reduces nexus obligation** compared to an impact fee program or bank
⊖ **Very complex to establish and administer** and therefore time consuming and expensive	⊕ **Less complex** than a bank


VMT Bank & Exchange
HIGH
Complexity of Establishing and Maintaining Program
VMT Bank
VMT Exchange
Impact Fee
LOW
Breadth of Reduction Strategies
HIGH

VMT MITIGATION APPROACHES

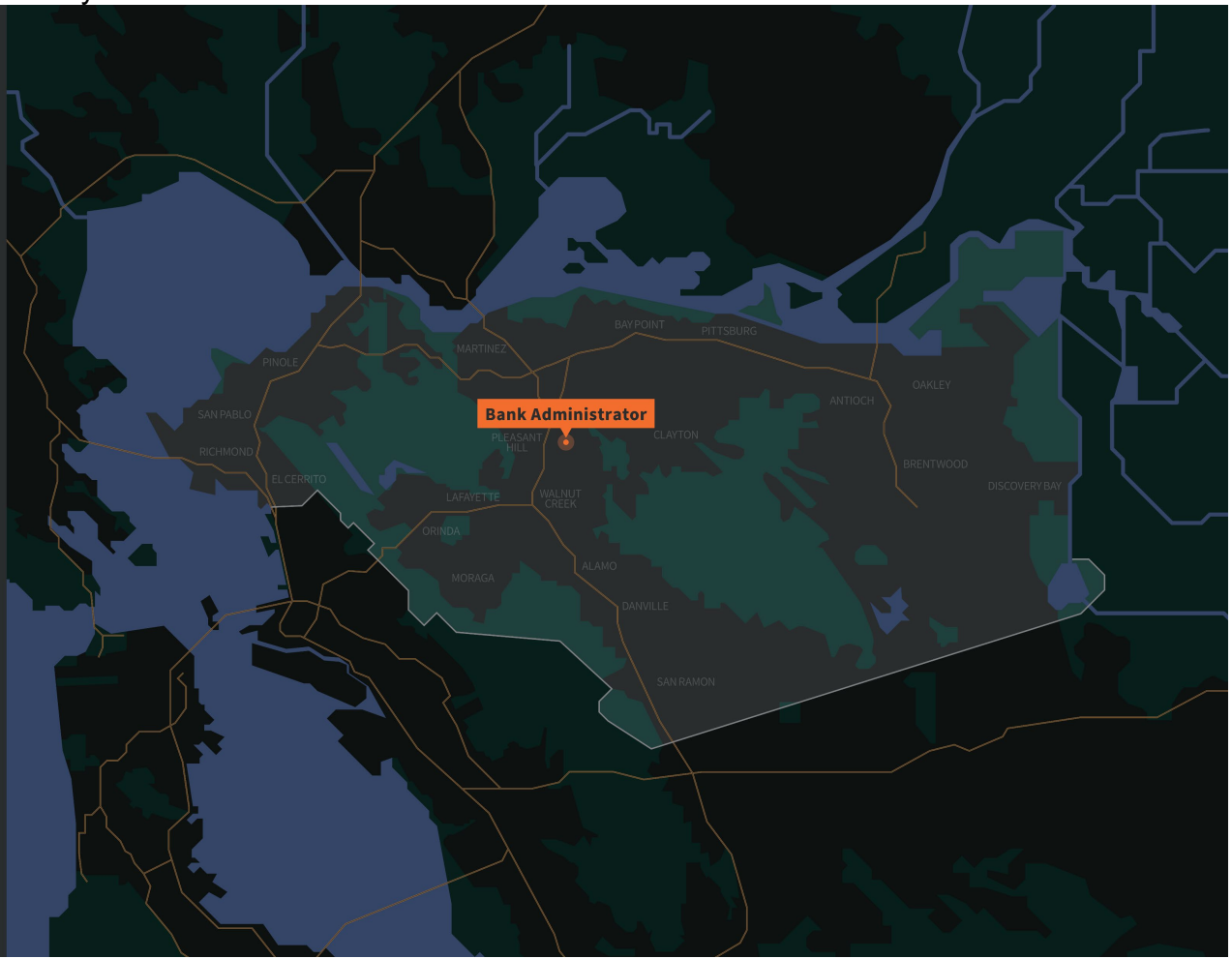
VMT Bank

VMT Bank

STEP 1

Bank Administrator

establishes a monetary value for VMT

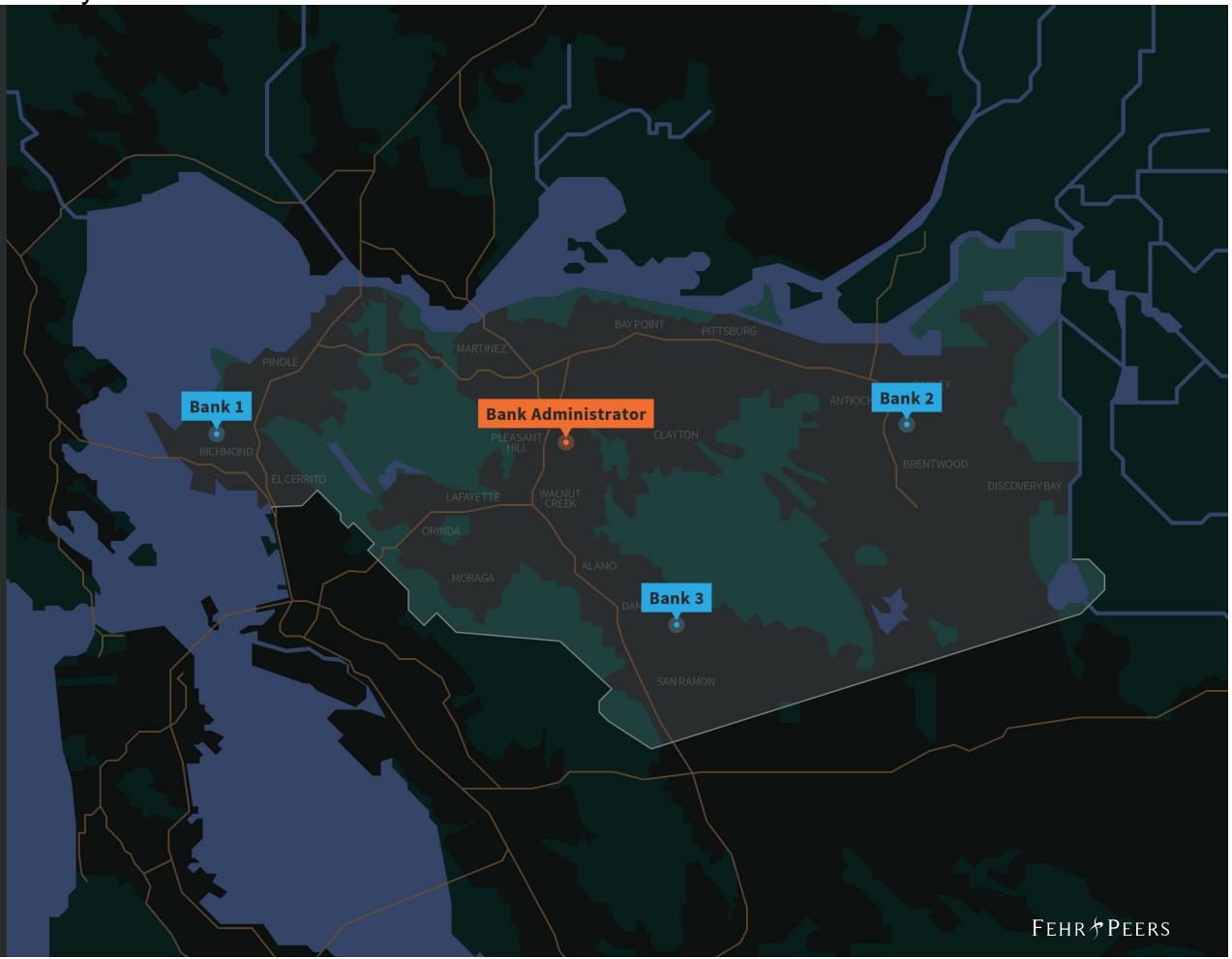


●●○○○ VMT Bank

STEP 2

Agencies & institutions evaluate their infrastructure improvements and programs for **ADDITIONALITY** and VMT reduction potential.

They then apply with a **Bank Administrator** to become a **Bank**

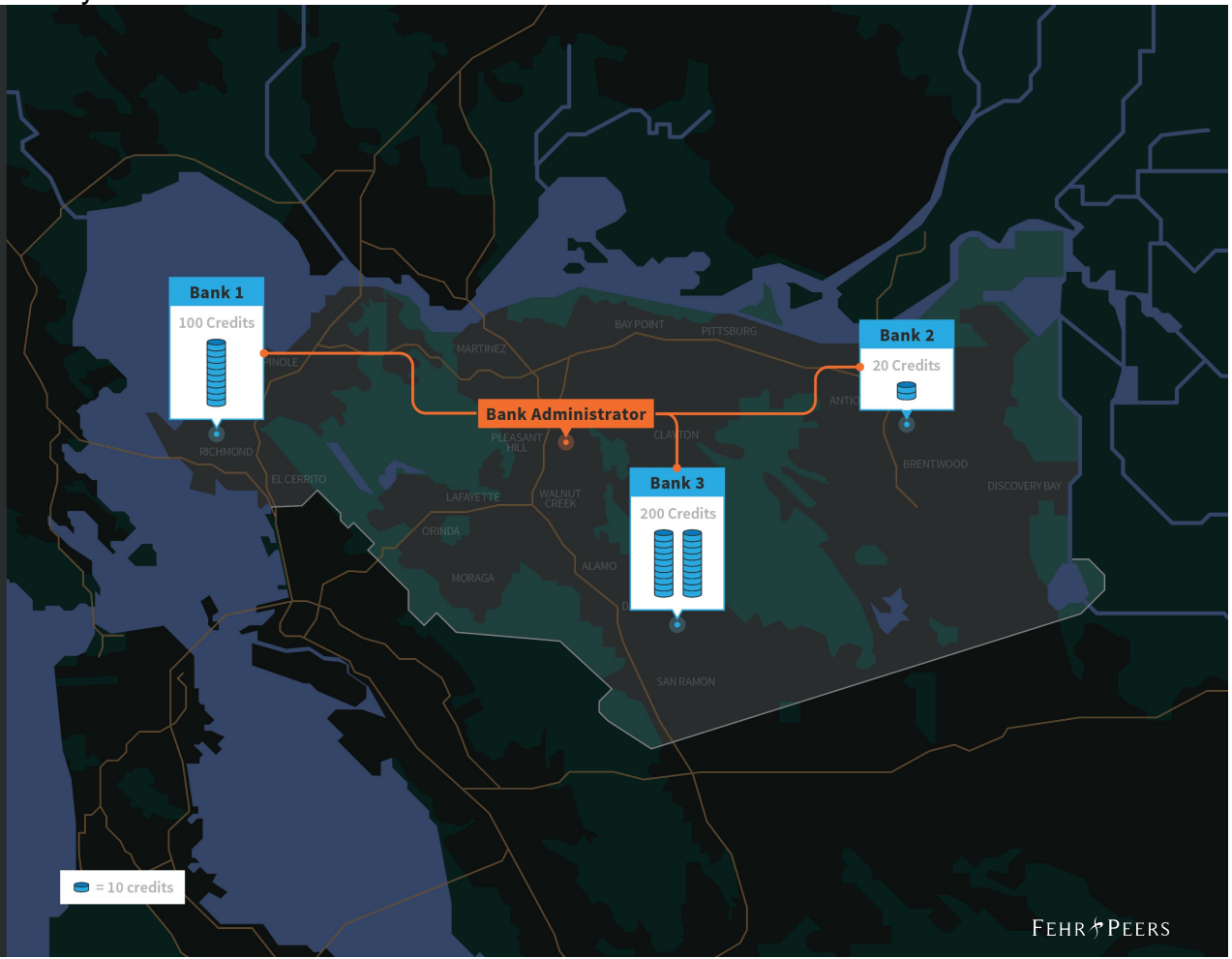


VMT Bank

STEP 2

Agencies & institutions evaluate their infrastructure improvements and programs for **ADDITIONALITY** and VMT reduction potential.

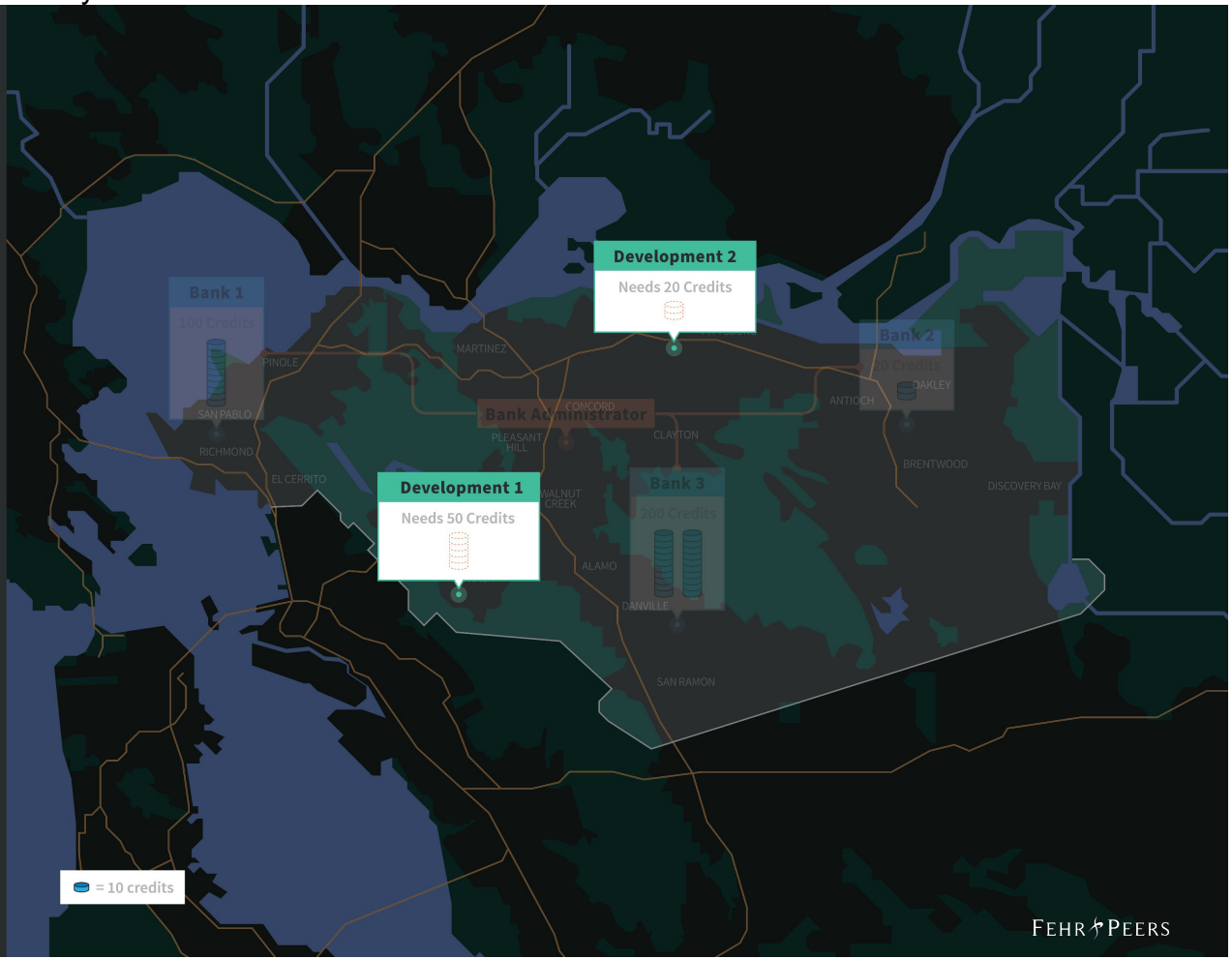
They then apply with a **Bank Administrator** to become a **Bank**, and are assigned a certain number of **CREDITS** to sell based on their VMT reduction potential.



VMT Bank

STEP 3

Developers determine their project's mitigation needs.



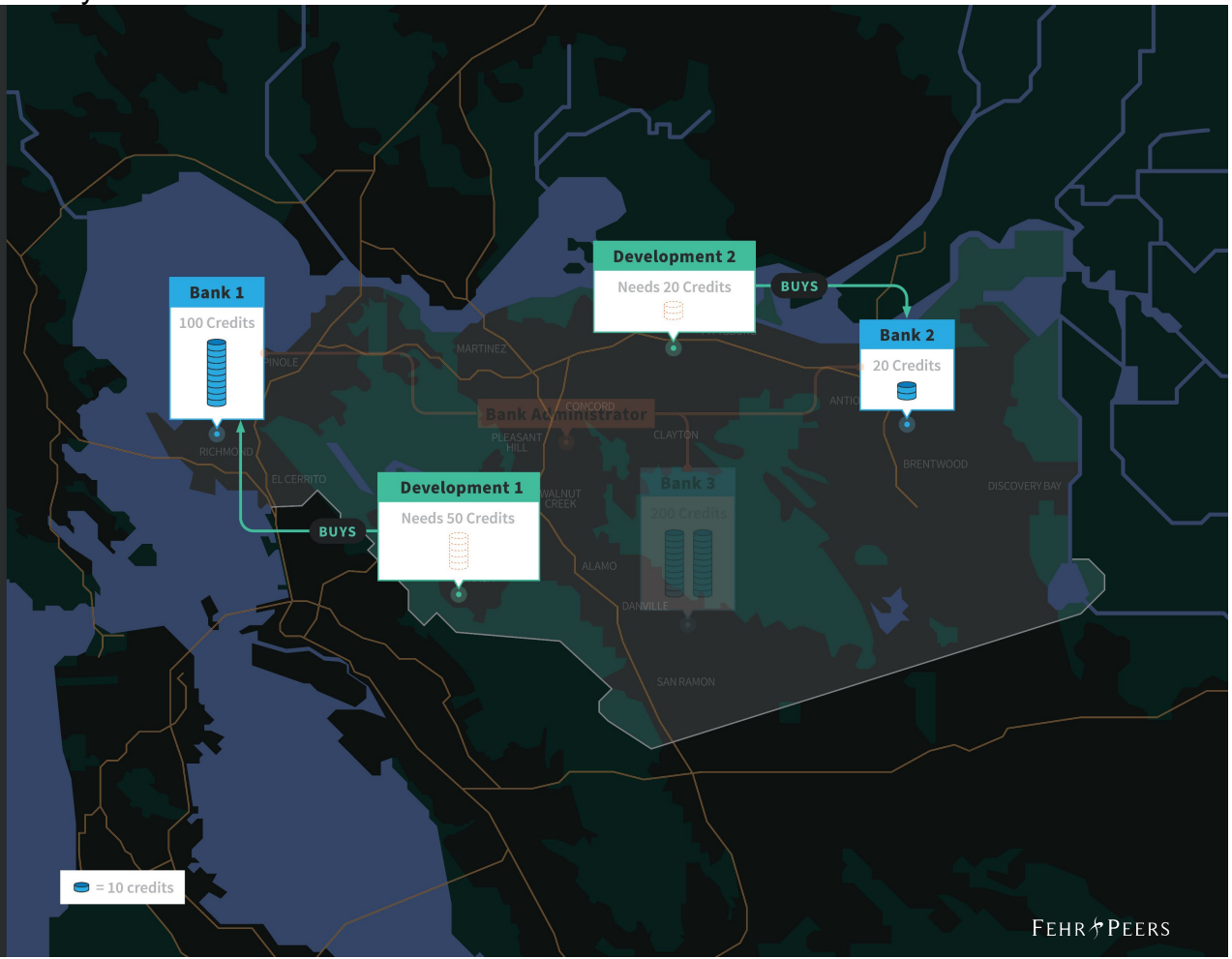
VMT Bank

STEP 3

Developers determine their project's mitigation needs.

They then **BUY** those **CREDITS** on the open market.

→ The **Developers** cost is determined by the current value of a VMT credit. (ESTABLISHED IN STEP 1)

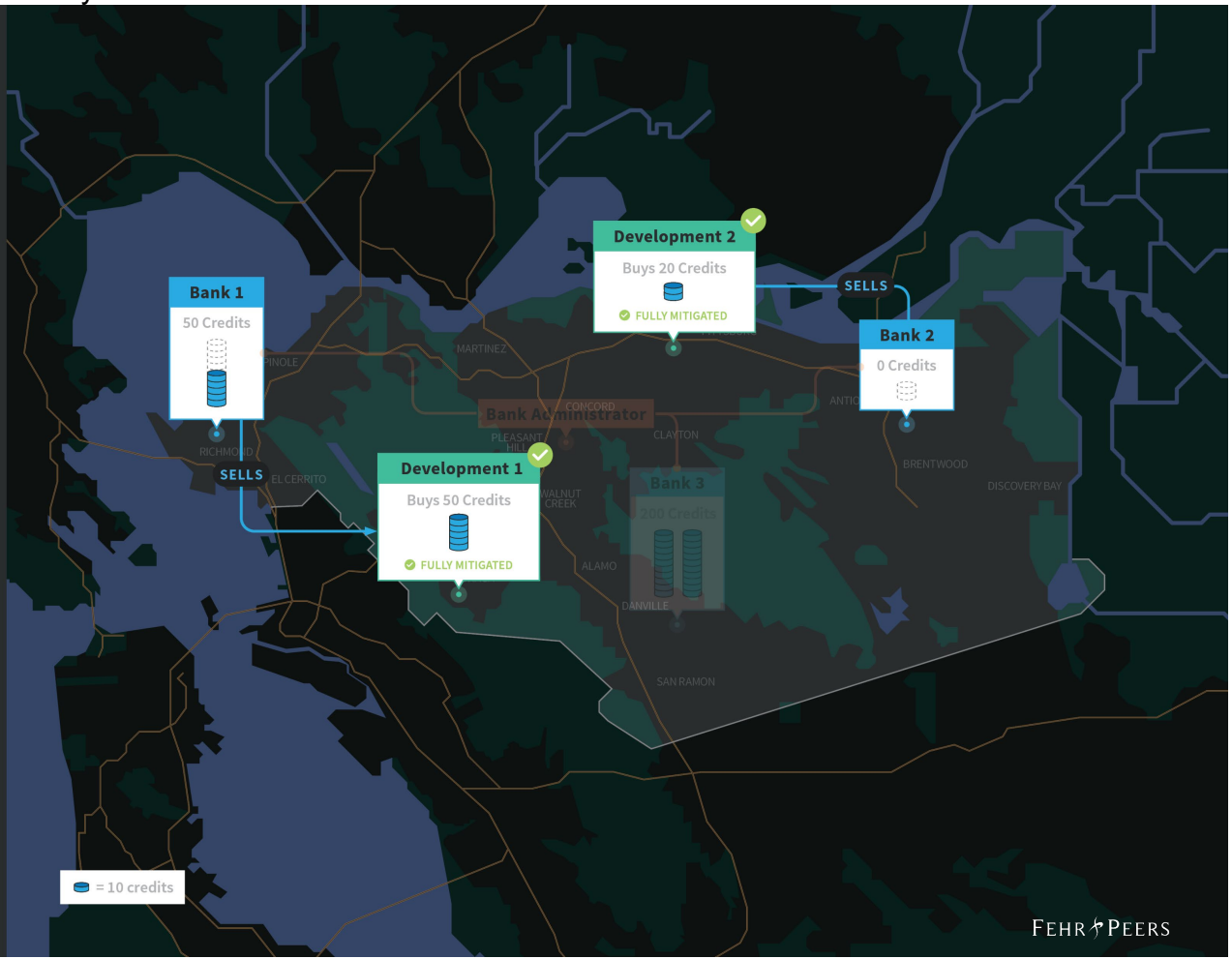


VMT Bank

STEP 4

Banks **SELL** those **CREDITS** to **Developers** to mitigate their projects.

Developers are able to **fully mitigate** their projects and **Banks** use their revenue to implement their infrastructure improvements and programs. **Banks** total number of credits available to sell are reduced.

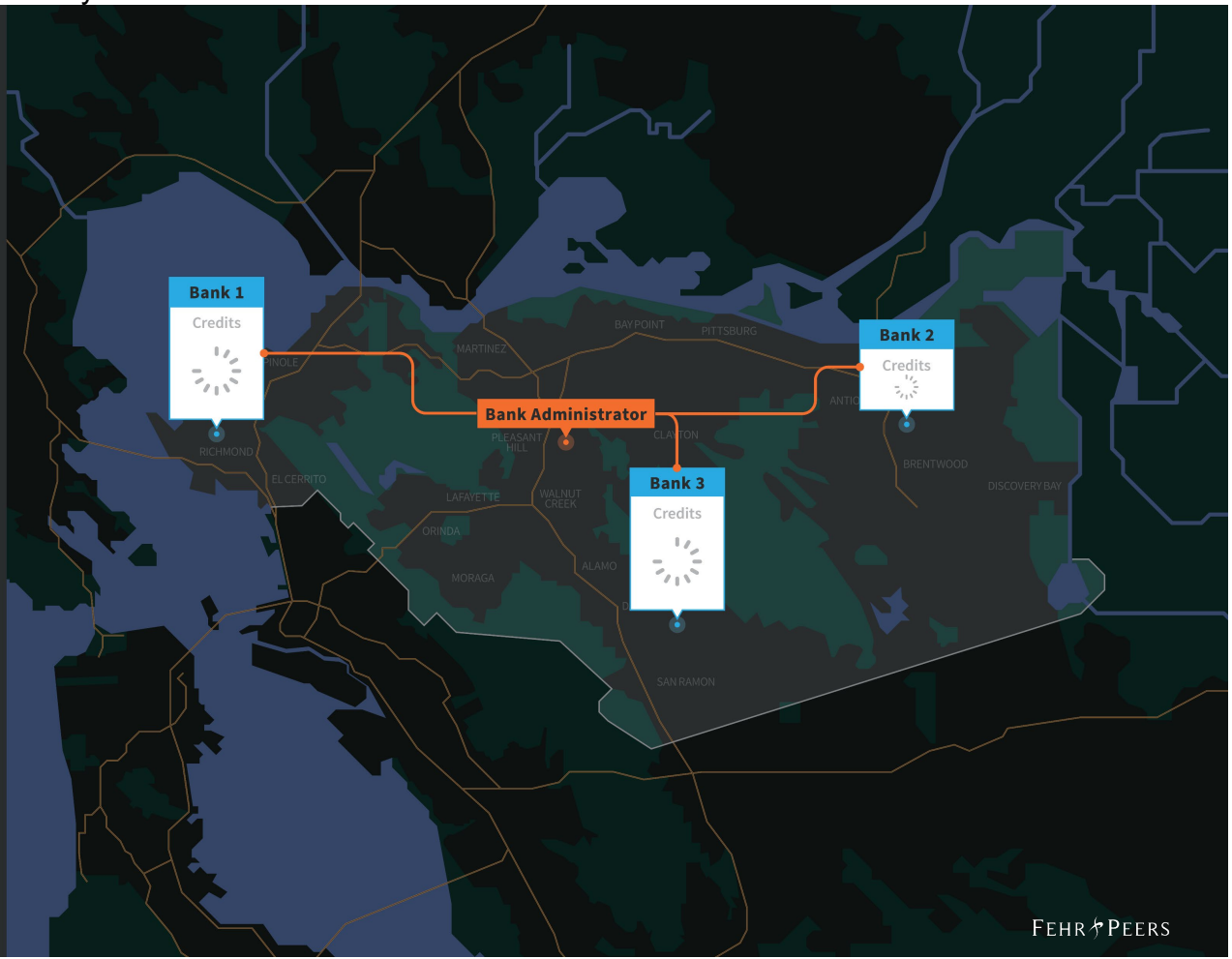


●●●●● VMT Bank

STEP 5

Bank Administrator re-assesses the value of VMT on a rolling basis (likely every 1-2 years). The value of VMT is based on current demand.

Banks re-apply for VMT credits.



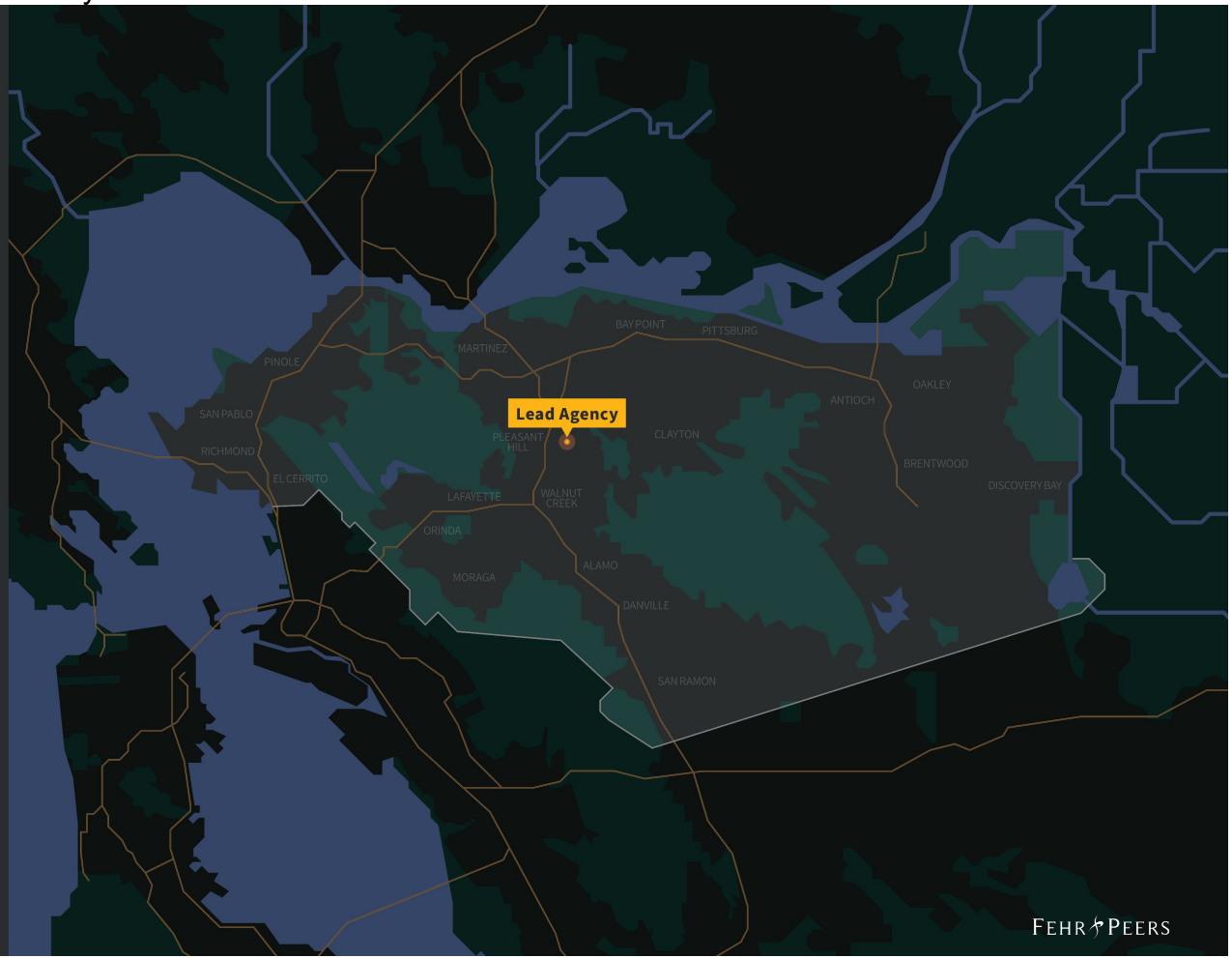
VMT MITIGATION APPROACHES

VMT Exchange

VMT Exchange

STEP 1

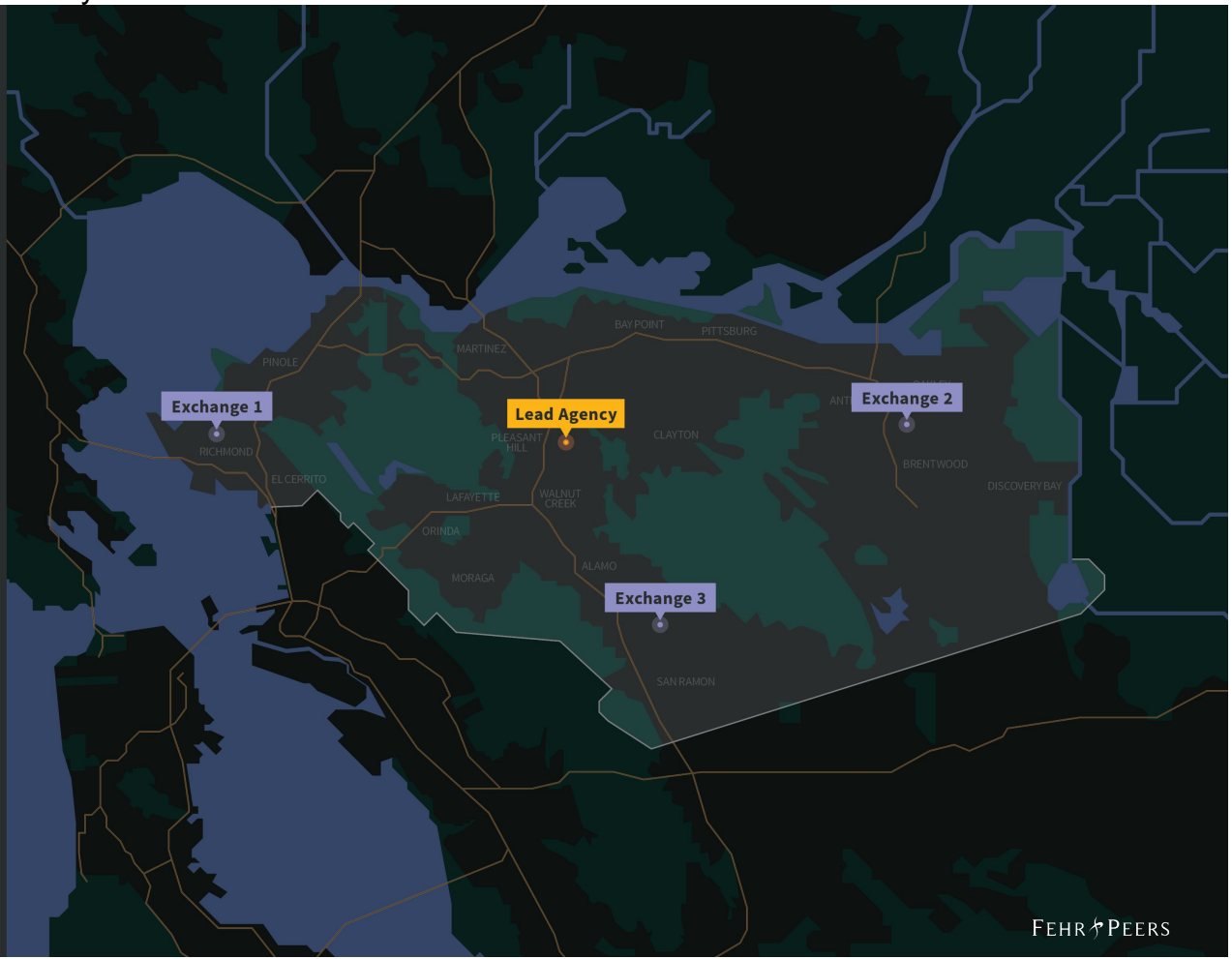
A **Lead Agency** is established.



VMT Exchange

STEP 1

Lead Agency establishes a list of VMT-reducing infrastructure improvements and programs.

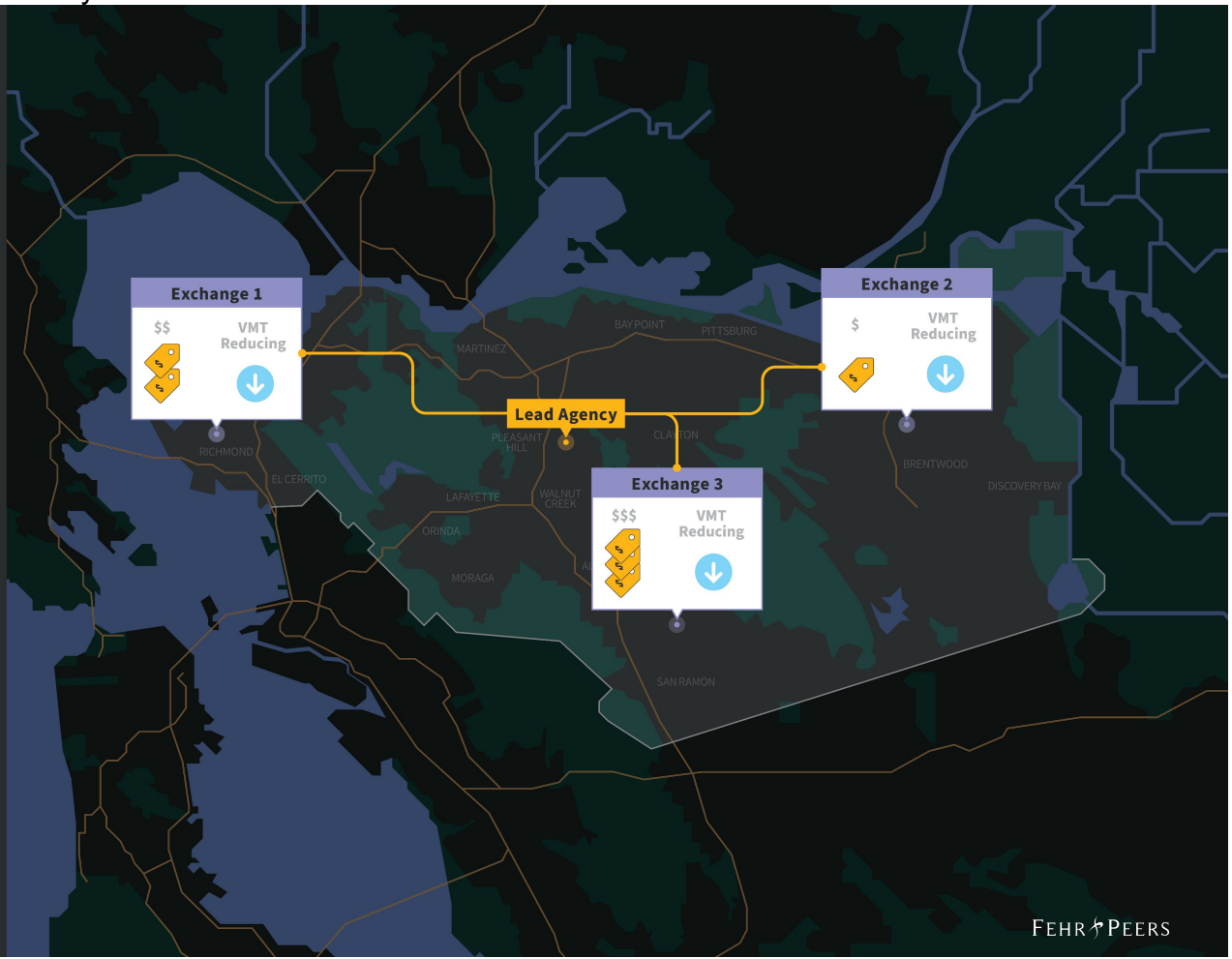


VMT Exchange

STEP 1

Lead Agency evaluates each **Exchange** to confirm **ADDITIONALITY** and cost to implement.

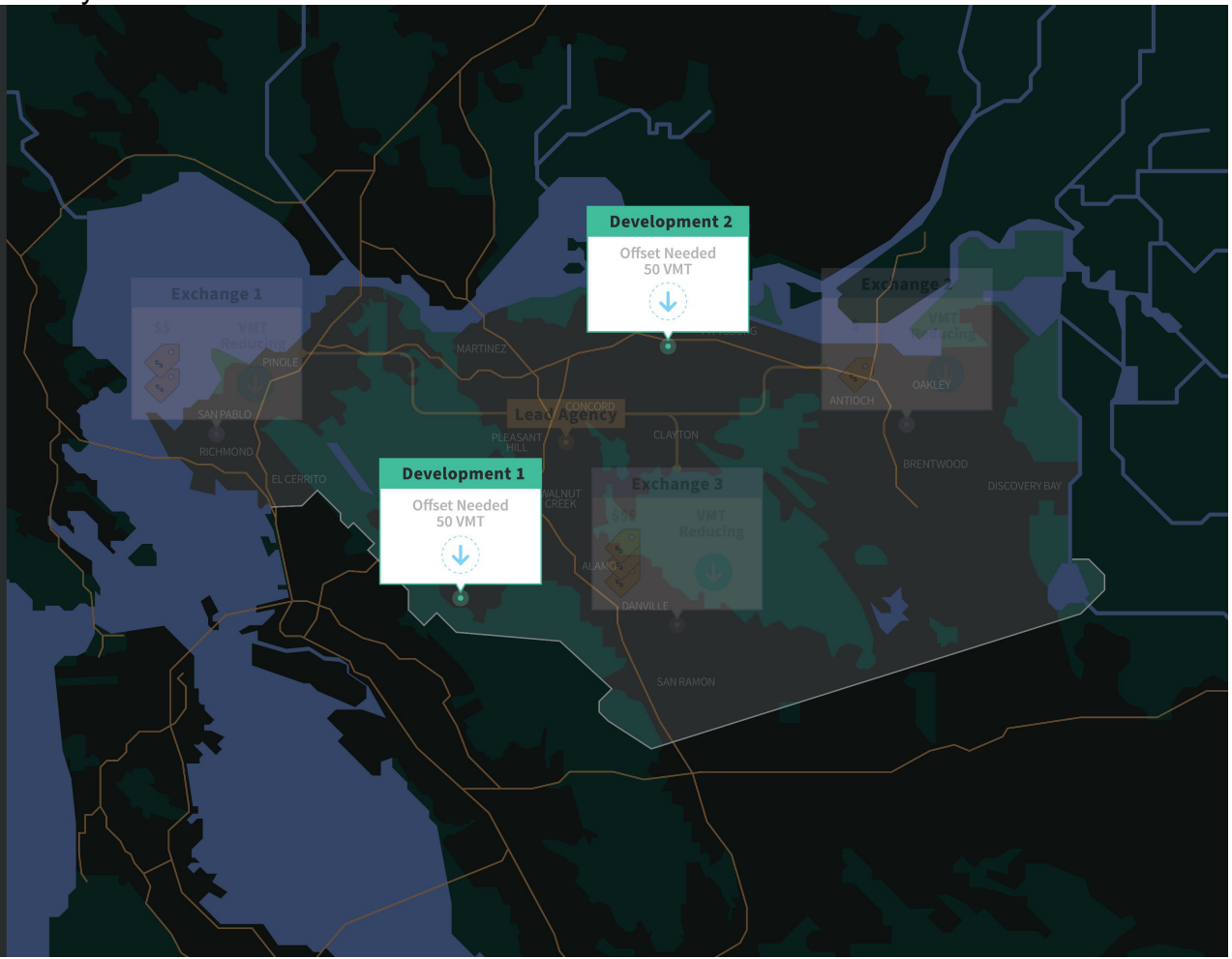
Depending on the rigor of analysis, each **Exchange** may be analyzed to quantify its **VMT reduction potential**.



VMT Exchange

STEP 2

Developers determine their project's mitigation needs.

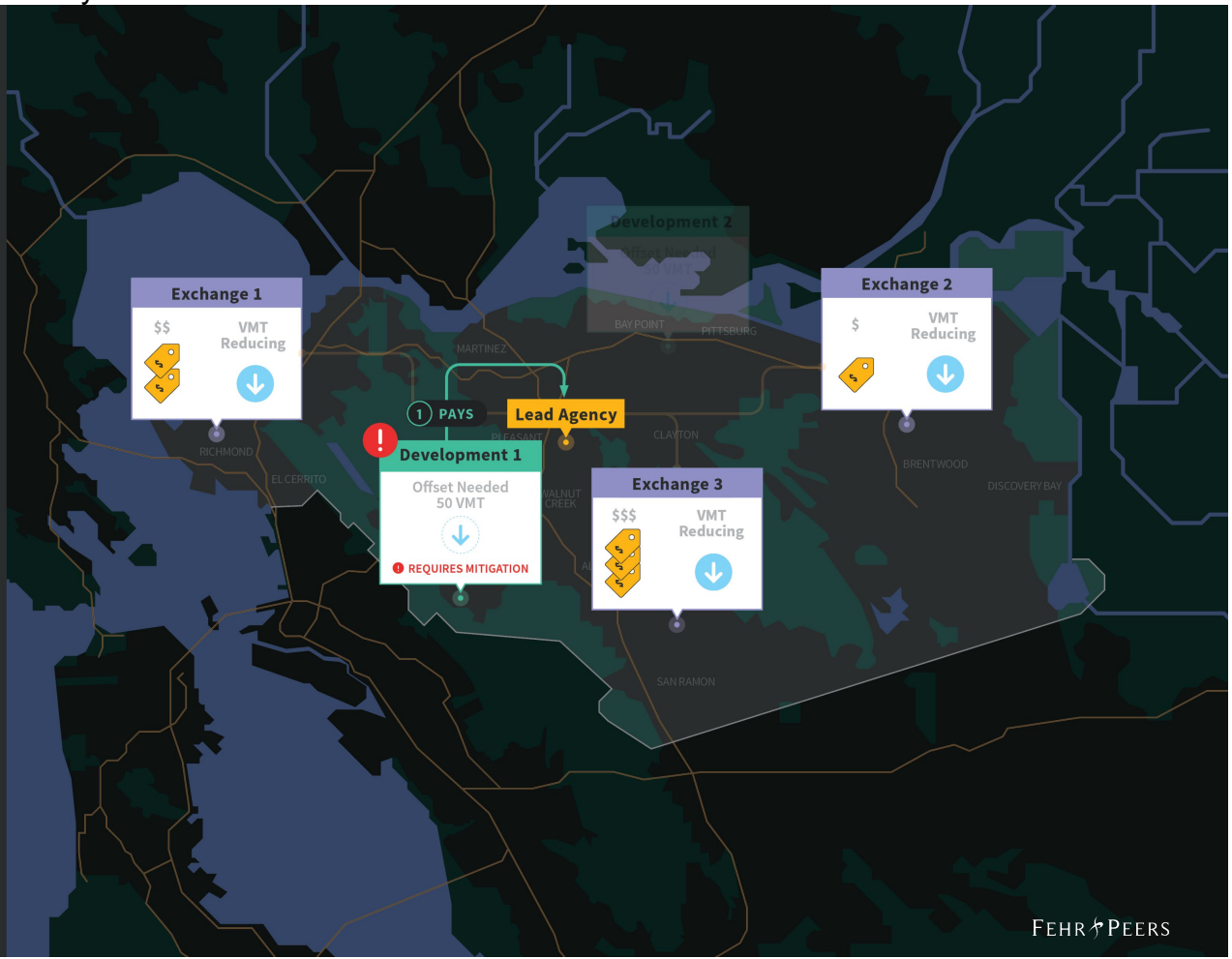


VMT Exchange

STEP 2

Developers determine their project's mitigation needs.

The first **Development** in the door gets their choice of all **Exchanges** and will likely choose the one that offers the lowest-cost option for VMT reduction.



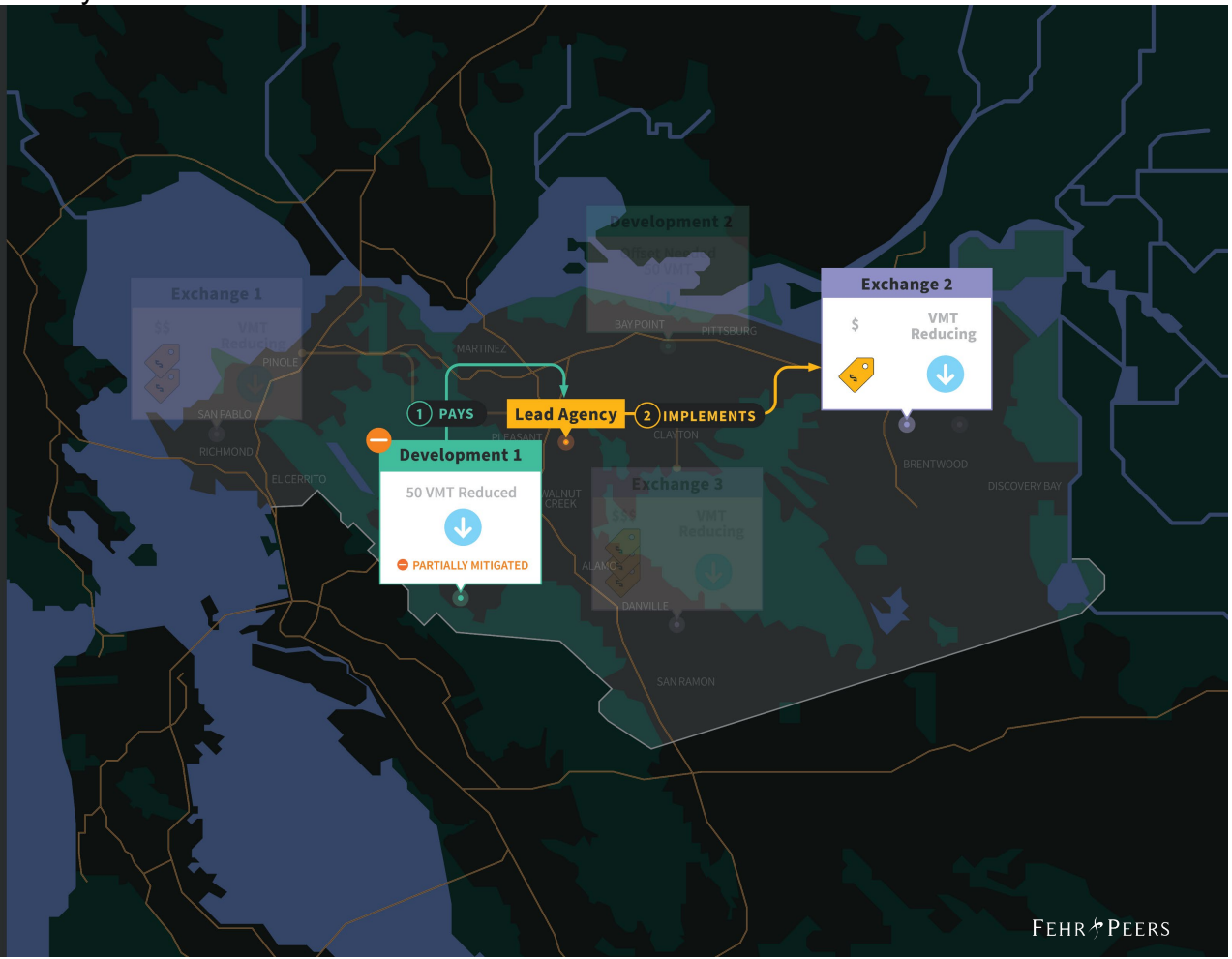
VMT Exchange

STEP 2

Developers determine their project's mitigation needs.

They then **PAY** for an **Exchange** that meets their needs and the **Lead Agency** **IMPLEMENTS** the **Exchange**.

With the implementation of the **Exchange**, the development can at least **partially mitigate** their project.



VMT Exchange

STEP 2

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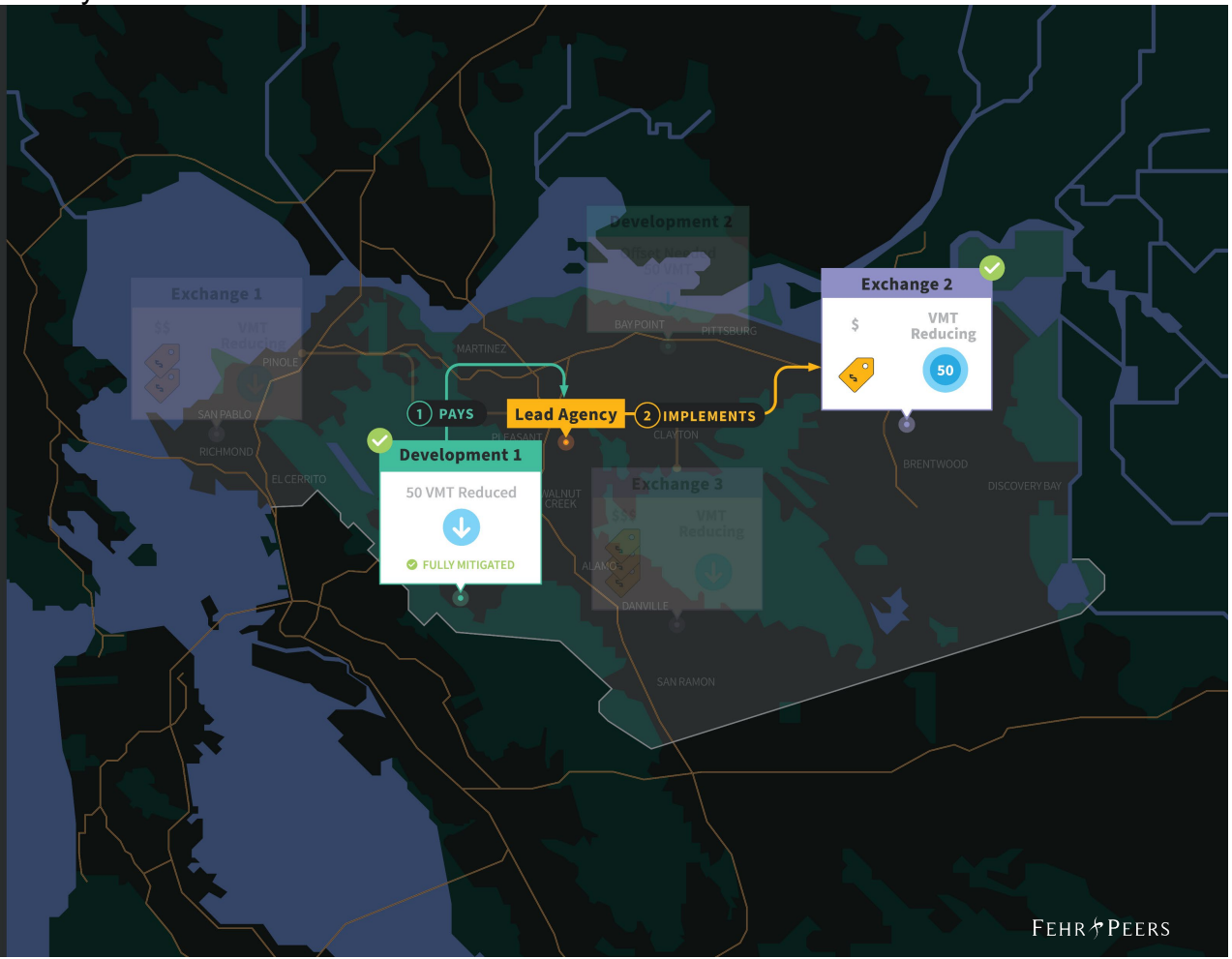
They then **PAY** for an **Exchange** that meets their needs and the **Lead Agency** **IMPLEMENTS** the **Exchange**.

With the implementation of the **Exchange**, the development can at least **partially mitigate** their project.

If the **Lead Agency** has completed the full data analysis required to quantify the VMT reduction potential of the **Exchange**, then the development can leverage that analysis to **fully mitigate** their project.



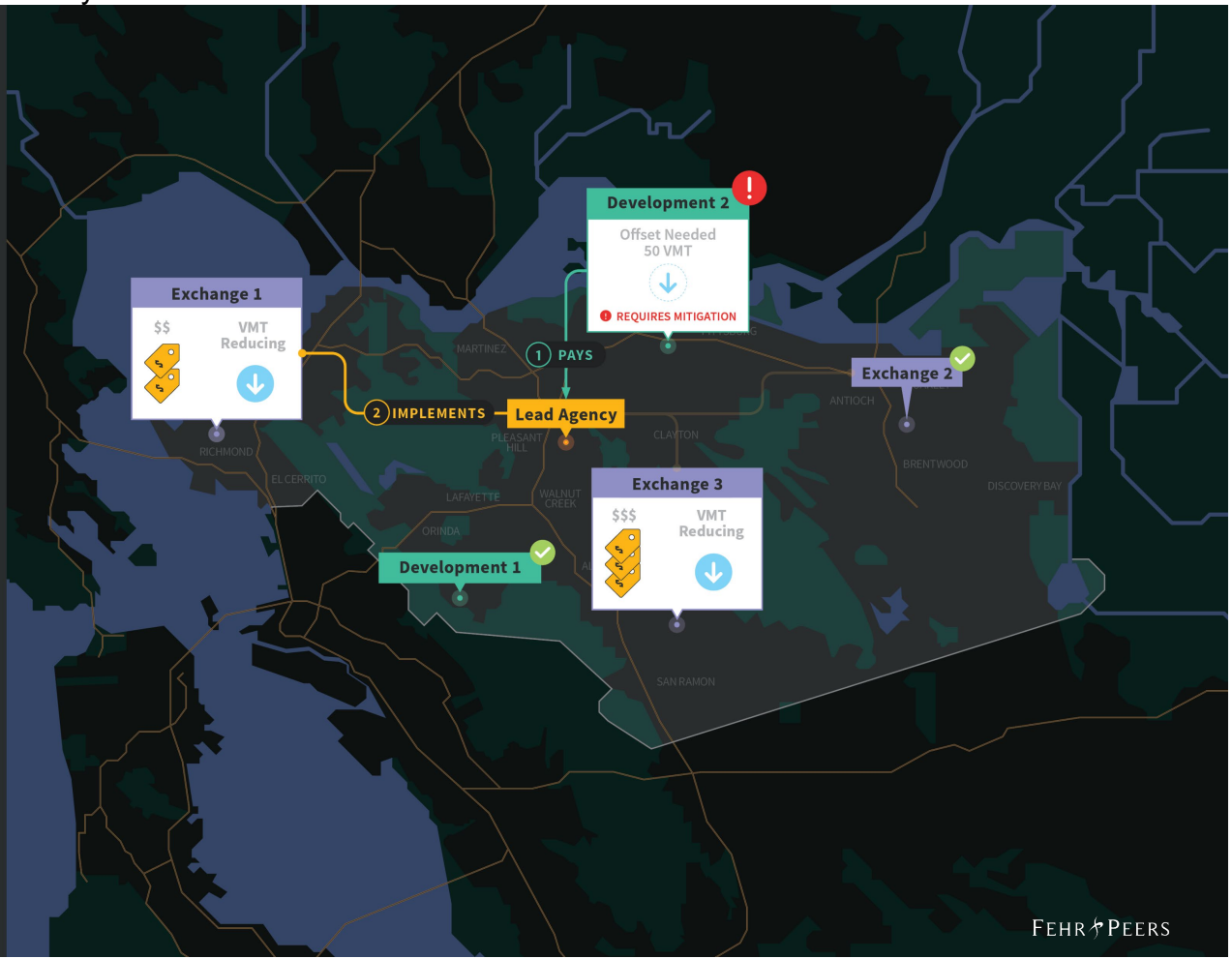
VMT Exchange

STEP 2

Developers determine their project's mitigation needs.

Then **PAY** for a VMT-reducing program that is available through the Exchange.

→ **Developers** cost is determined by the price of the VMT reduction available.



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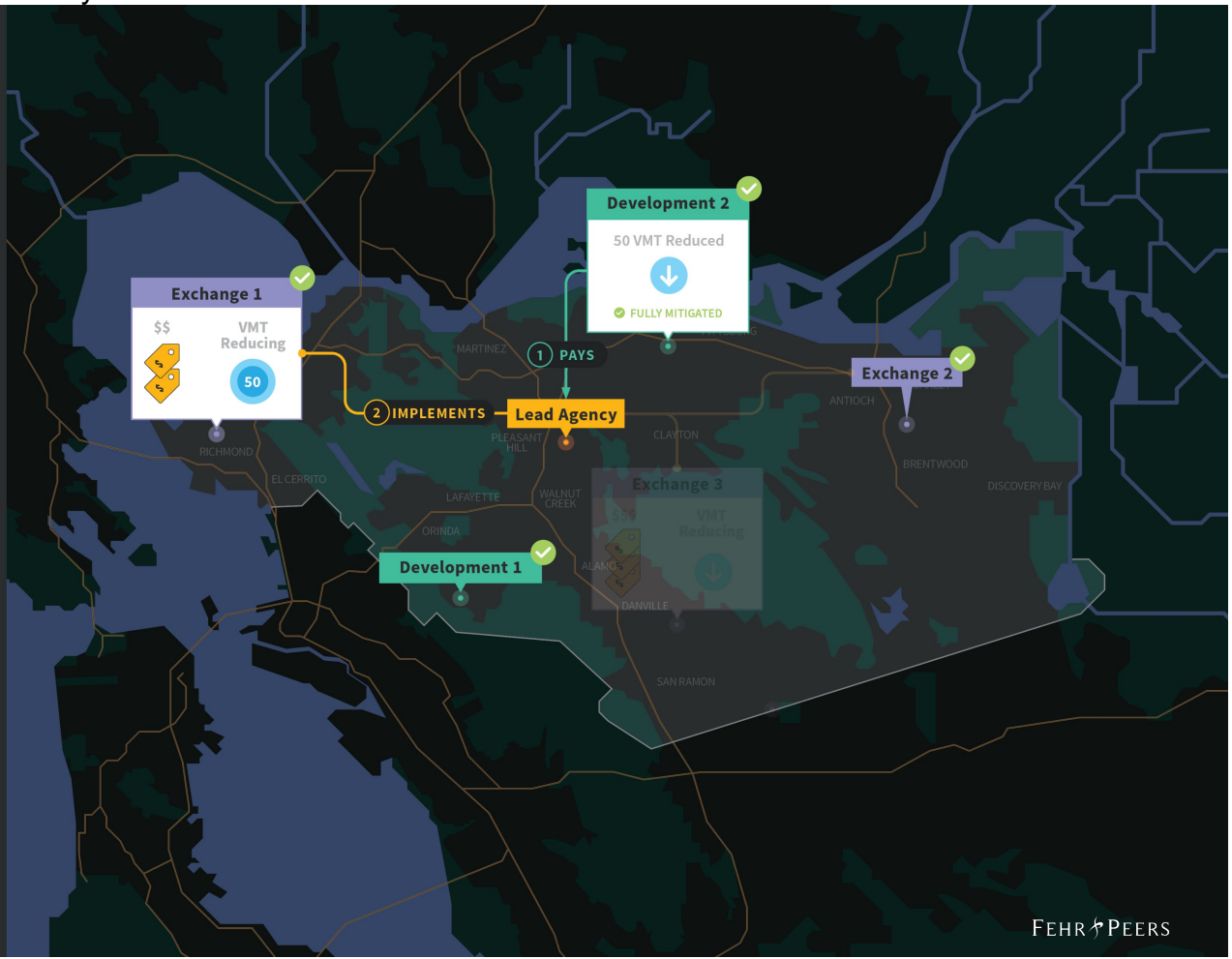

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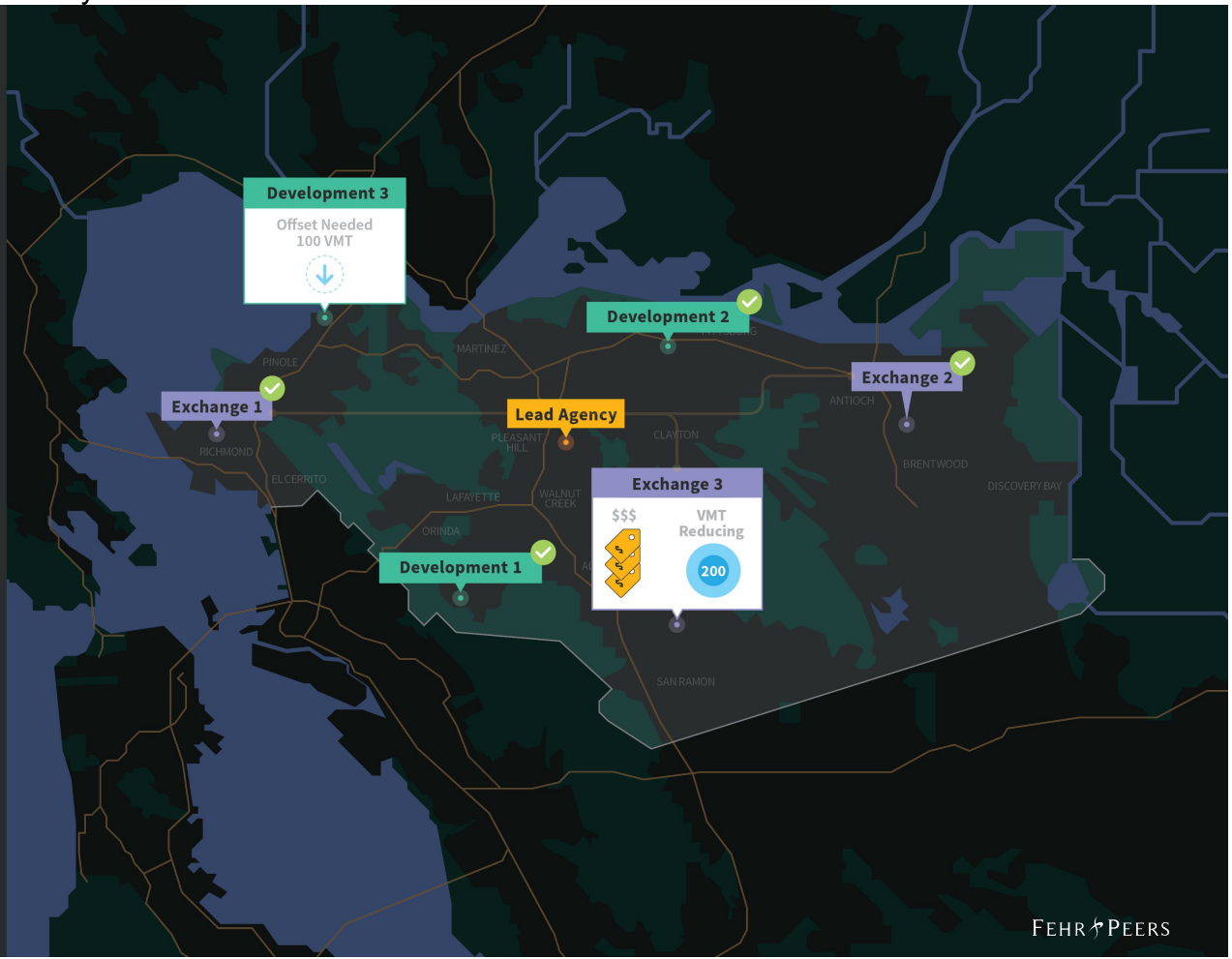

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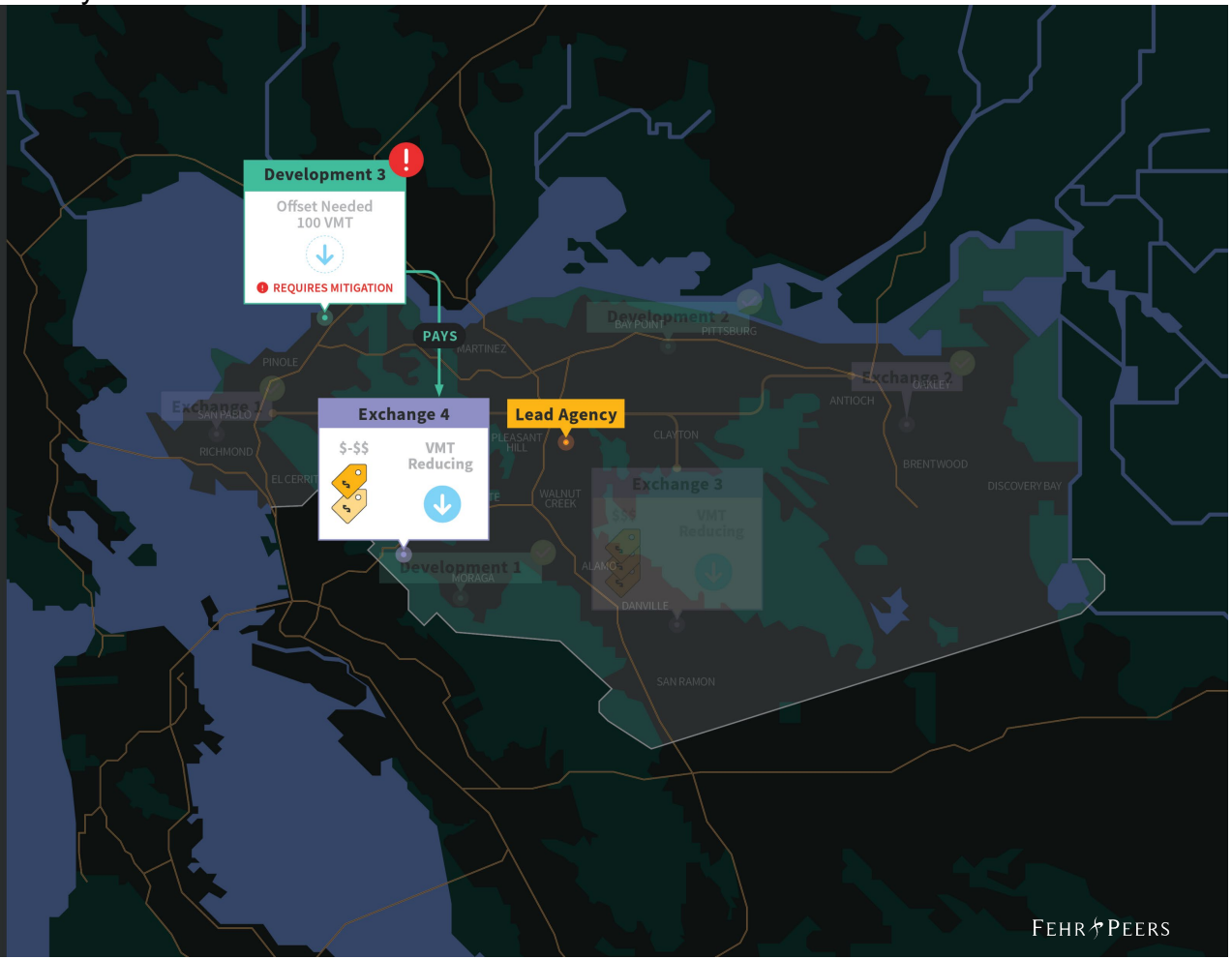

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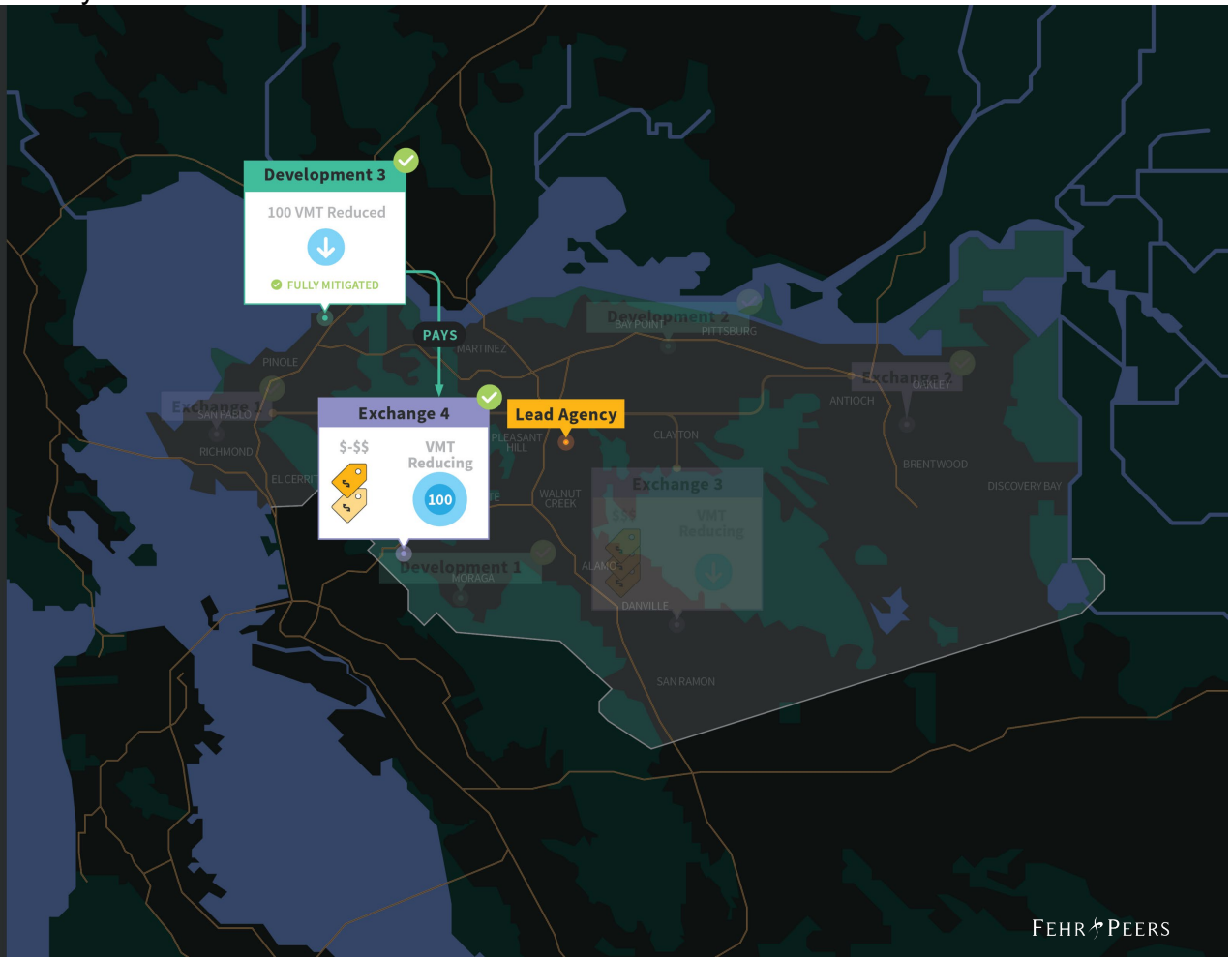
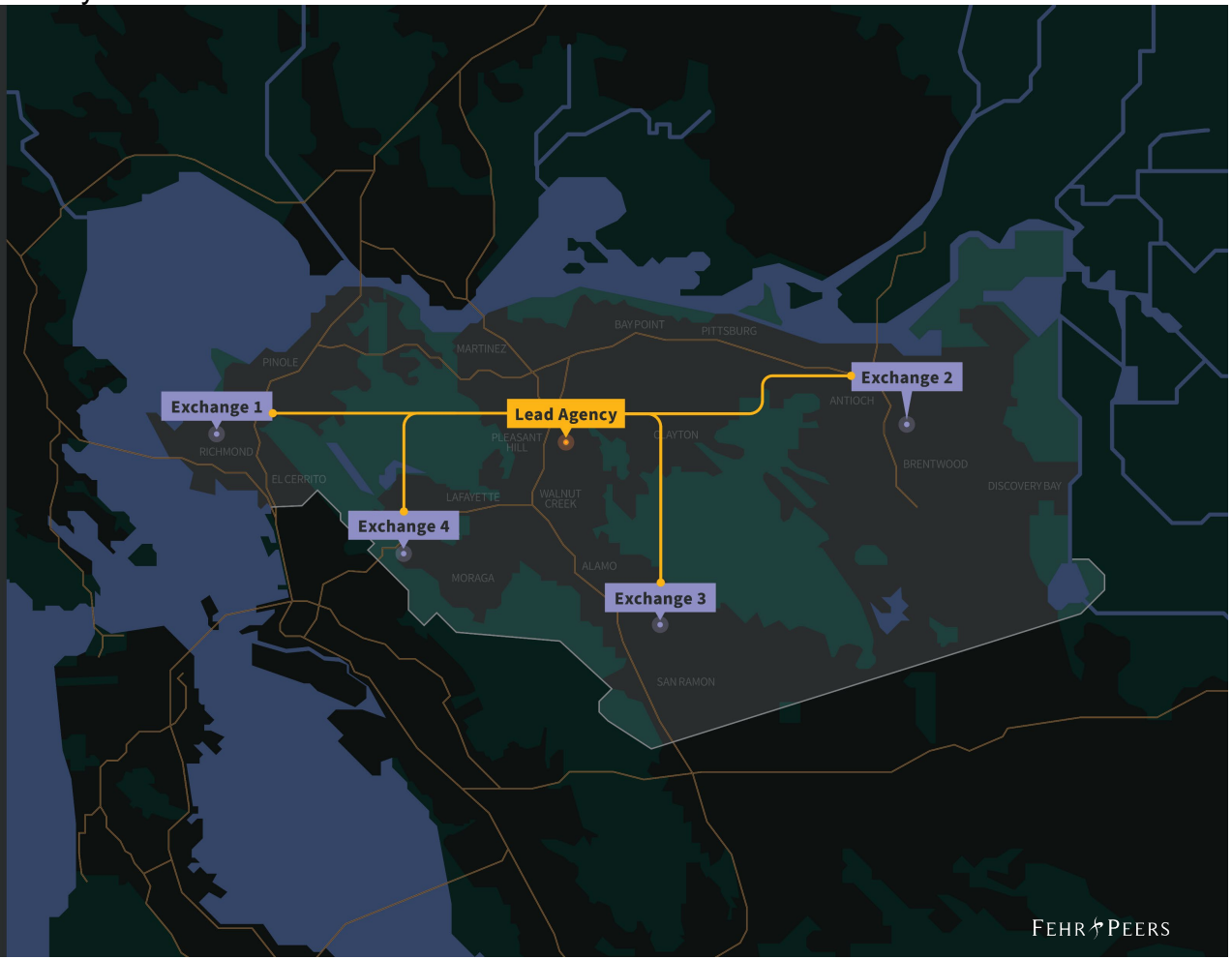


●●● VMT Exchange

STEP 3

Lead Agency monitors VMT performance of the **Exchanges**.



VMT Bank & Exchange

	Bank	Exchange
Who pays who?	Developer → Bank or Developer → Bank Administrator → Bank	Developer → Lead Agency or Developer → Own Exchange Program
Who delivers the project/program?	Banks	Lead Agency or Developer
What are you paying for?	VMT Credits	Infrastructure Improvement or Program
What is being evaluated?	Value of VMT Reduction	Infrastructure Improvement or Program's VMT Reduction Potential
How frequently is it evaluated?	Regularly—*possibly every year*	*To be determined*
What is the CEQA mitigation potential?	May allow for full mitigation, but depends on lifespan of bank mitigation strategies	Depends on rigor of data collection and analysis.

FEHR & PEERS

Breakout Discussions

BREAKOUT DISCUSSIONS

Breakout Session Guiding Questions

PROGRAM NEED
- **What problems are you hoping a VMT mitigation program helps solve for Contra Costa?**

AGENCY OVERSIGHT
- **Who is the right "bank administrator" or "lead agency"?**

LEGALITY/FEASIBILITY
- **What are your primary concerns from a CEQA perspective? From a political perspective?**

GEOGRAPHY & SCALE
- **What do you think is the right scale for a VMT mitigation program?**
- **How do we ensure equitable distribution of infrastructure improvements, programs, and funds?**

PROGRAM INTEREST
- **Given what you know right now, would your agency want to participate in this type of program? If unsure, what information would you need to decide whether to participate?**

BREAKOUT DISCUSSIONS

Breakout Session Report Back

PROGRAM NEED
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- **Given what you know right now, would your agency want to participate in this type of program? If unsure, what information would you need to decide whether to participate?**

CLOSING

Next Steps

- Develop evaluation criteria for a countywide VMT mitigation program
  - *Next steps for the PAC*: Brainstorm evaluation criteria
- Develop four program options
- Test effectiveness and costs of the program options

Thank you!

CCTA VMT Mitigation Framework: Project Advisory Committee Meeting #1

September 28, 2021
2:00 PM – 4:00 PM

LOCATION:
Zoom

PRESENTERS:
Matt Kelly, CCTA
Stephanie Hu, CCTA
Julie Morgan, Fehr & Peers
Ron Milam, Fehr & Peers
Sarah Peters, Fehr & Peers

Meeting Notes

Introductions

Introductions

Agenda

Project Background

- Included funding in recent transportation expenditure package, which did not pass
- Funding provided through Caltrans Sustainable Communities Transportation Planning Grant

Framework Project Goals

Goals of the Project

Project Advisory Committee Role

- Provide feedback on efficacy, feasibility of various options

Technical Background

SB 743

Current VMT Mitigation Approaches

VMT Mitigation Approaches

Impact Fees

Questions and Comments

- For transportation projects, are you making a distinction here between "impact fee programs", as in a standardized measurement of impact/payment vs project-specific ad hoc pro-rata fair share contributions...?
    - *Response:* Caltrans is in a somewhat unique position - it is enabled to accept ad-hoc pro-rata fair share contributions

- Will these fees for transit include operating and capital? How are the fees collected over the course of 30 years?
  - *Response:* Banks and Exchanges allow for program and operations funding; impact fees generally do not.

Banks vs. Exchanges

- How does the developer know how much a VMT reduction is worth? The cost per VMT reduced (Capital and operating) is a lot more on BART than on a bus service.
  - *Response:* The Bank administrator would need to determine this - so while the Bank approach seems simple, there's a great deal of background work that needs to happen.
- Related to the complexity of administration - big ask here, but have you all looked at a "hybrid model" that incorporates some of the simplified/ standardized assumptions & admin. structure that go into LU impact fee programs w/ the expansive options & flexibility of banks/exchanges, but with the long-range monitoring needed for VMT reduction?
  - *Response:* Not yet, but this could be explored. There's no standard for the length of time that VMT reductions would need to be monitored.
- *Question:* Over the course of the project (30 years) one developer sells to another developer – are there laws in place to transfer the responsibility from one developer to the next?
  - *Response:* This is typically incorporated into a project's deed and included in the sales contract.

Breakout Discussions

- *See summaries (attached)*

Report Back

- Mitigations add costs - only so much cost can be added onto project costs; this could result in lead agencies needing to pick and choose between impacts that must be mitigated.
- Support for funding transit agency operations through mitigation fees.
- Consider leveraging existing RTPC structures along with CCTA to administer and monitor this kind of program.
- Concerns around cost and effect of adding more mitigation pressure to the cost of development. CEQA has not been a force for simplification in California.
- Support for spurring more cohesive/coordinated programs to reduce VMT - address some of the intra-jurisdictional challenges of current project/program development.

Attachments:
Attendee List
Breakout Session Summaries

Attachment 1: Attendee List

- Matt Kelly, CCTA
- Julie Morgan, Fehr & Peers
- Ron Milam, Fehr & Peers
- Sarah Peters, Fehr & Peers
- Neil Peacock, Senior Environmental Planner, Caltrans HQ Division of Local Assistance
- Steve Ponte, COO at Tri Delta Transit
- Stephanie Hu, Director of Projects for CCTA
- Misha Kaur, Senior Project Manager, City of Pinole
- Laurel Sears, Grant Manager, Caltrans D4
- Andy Dillard, Transportation Manager, Town of Danville
- Ben Schuster, Transportation Planner with City of Martinez
- Kristen Connelly, CEO of East Bay Leadership Council
- Lisa Vorderbrueggen, Building Industry Association, East Bay
- Linsey Willis, Director of External Affairs for CCTA
- Trishia Caguiat, Associate Planner, City of Pittsburg
- John Hoang, CCTA
- John Nemeth, Executive Director, WCCTAC
- Lisa Bobadilla, Transportation Division Manager, City of San Ramon
- Melody Reebs, Manager of Planning, County Connection
- Saravana Suthanthira, Transportation Program Manager, City of Concord
- Smadar Boardman, Traffic Engineer, City of Walnut Creek
- Kamala Parks, Senior Planner, BART
- Corinne Dutra-Roberts, Vice President, Advanced Mobility Group
- James Choe, Climate Program Manager at MTC/ABAG, filling in for Krute Singha
- Jamar Stamps, Principal Planner, Contra Costa County
- John Cunningham, Principal Planner, Contra Costa County
- Jody London, Sustainability Manager at Contra Costa County
- Juan Pablo Galvan Martinez, Senior Land Use Manager, Save Mount Diablo
- Rob Thompson, Planning Manager, WestCAT

Attachment 2: Breakout Discussion Summaries

Discussion Questions

- PROGRAM NEED: What problems are you hoping a VMT mitigation program helps solve for Contra Costa?
- AGENCY OVERSIGHT: Who is the right "bank administrator" or "lead agency"?
- LEGALITY/FEASIBILITY: What are your primary concerns from a CEQA perspective? From a political perspective?
- GEOGRAPHY & SCALE: What do you think is the right scale for a VMT mitigation program? How do we ensure equitable distribution of infrastructure improvements, programs, and funds?
- PROGRAM INTEREST: Given what you know right now, would your agency want to participate in this type of program? If unsure, what information would you need to decide whether to participate?

Group 1 Discussion

- Program could be a good source of funding for transit improvements
- Wonder if VMT-reduction strategies could include widespread parking pricing or congestion pricing?
- Strong desire to encourage better land use development patterns
- Wary of adding yet more complexity and cost to development projects when we already have such a problem building affordable housing. Having a program like this in Contra Costa but not in nearby counties could mean that development just goes elsewhere.
- "CEQA abuse" is a real phenomenon.
- Feels that developments should first do all they can to mitigate VMT impacts on-site, and only then be able to buy credits to finish mitigating.
- Hoping this program will spur mitigation ideas that are more cohesive, coordinated, and robust than the very haphazard and fragmented mitigation that currently occurs.
- Advocates for a countywide network of bicycle facilities that serve functional transportation purposes.

Group 2 Discussion

- Program should actually change development patterns or encourage more compact land use development.
- Does this conflict with goals for infill and changing the built environment and traditional development patterns?
- Limit VMT mitigation strategies that reinforce the above and make transit and active transportation more effective

- Getting people out of cars reduces transit revenue from gas tax.
- Higher costs for development further away from centers and transit.
- Bus passes only cover 20% of operating costs. Higher operating costs for the longer distance trips.
- Buyers pay higher mitigation costs. Can increase use of HOAs with higher costs for housing.
- Developers have fixed mitigation costs. An increase in VMT mitigation will reduce dollars for other mitigations or public improvements.
- Want mitigation dollars to have a clear nexus.
- No in perpetuity mitigation.
- Program need – both land use and transportation project mitigation.
- *Question:* Can building more infill housing qualify as a VMT mitigation? *Response:* This depends on the legal authority of the entities involved in the development review and CEQA process. We can ask this question of our legal experts.
- Need to be synced with the RTP and SCS.
- Legal – Need assurance of mitigation effectiveness and appropriate verification. Need alignment of local actions with regional and state goals.
- Representing a transit poor community: Split on concept. Want to maintain high quality of life. Concerned about buying way out of VMT impacts, especially if dollars go to another community.
- Positive that transit operating costs can be covered in a bank or exchange.
- Prioritize accelerating VMT reduction projects in RTP/SCS in equity areas of concern.

Group 3 Discussion

- *Question:* Is there a possibility of project development happening in a piecemeal fashion? Transportation projects tend to require large capital investments and may be hard to finance by small-scale VMT mitigation payments.
- *Question:* What other projects are being developed around the state? There are so many projects in terms of scale, depth, geography.
- *Question:* What does the bank fund? *Response:* VMT-reducing projects and potentially programs.
- As a CEQA lead agency, Contra Costa County would want a program that allows projects with minor VMT impacts to be able to pay into a fund to reduce impacts.
- For Concord, most transportation projects are complete streets-oriented - not necessarily concerned about those.
- Could address jurisdictional challenges in making improvements that reduce VMT (e.g., an SRTS improvement that stops at the city limit)
- CCTA seems like a good option as “bank administrator” or “lead agency.”

- One administrative option: have CCTA be the lead agency but delegate administration to the RTPCs (aligns with recommendations from Innovate 680).
- Many lead agency options to consider: Joint Powers Authority model (especially relevant if the relevant geography goes beyond the County line), MTC, Caltrans, CCTA.
- Lead agency will need to be able to use some of the funding to pay for administration to cover fee. There will be complexity in establishing administrative fees, cost and effort required to monitor mitigations.
- From Caltrans D4 POV, it's important to think about:
    - Enforceability (CCTA has power to ensure that mitigations and monitoring are enforced).
    - Monitoring is the most challenging part of ensuring that TDM and other programmatic VMT reduction measures are enforced.
- Concerned about feasibility of establishing a nexus for mitigations. How do we ensure that mitigations are related to the projects whose impacts they mitigate?
- RTPC model could help establish a reasonable nexus. Projects within one RTPC region can fund improvements within that region.
- May be easier to mitigate impacts if VMT impact metric is established with a significance threshold defined at the Countywide level.
- Geography of program should match the geography at which the impact is evaluated.
- Currently, significance thresholds are being established at the local level.
- Geography of program should encompass the entire County.

PAC Questionnaire: Guidance for a Potential Contra Costa Countywide VMT Mitigation Program

Please complete this questionnaire by Friday, November 19th. You may select more than one option on each question. Please choose all options that reflect your opinion, and feel free to add clarification in the comments section

1. ***Creation of a Program:*** A countywide VMT mitigation program might expand the range of possible mitigation strategies for VMT impacts, streamline the approval process for projects with VMT impacts, and increase the costs associated with VMT mitigation. Should there be such a program in Contra Costa?
    - ***a.*** Yes
    - ***b.*** No (please describe concerns below)
    - ***c.*** Unsure

      Comments: _____

2. ***Types of Projects Eligible to Participate:*** Should the program be available to sponsors of:
    a. Land development projects?
    b. Transportation infrastructure projects?
    c. Other project types (please specify)?

      Comments: _____

3. ***Types of Mitigation Strategies Funded:*** Should the program be used to fund:
    a. Capital improvements that encourage walking, bicycling, and transit use, such as new sidewalks, expanded bike facilities, or extensions of transit lines (for more information, refer to strategies T-17 through T-19, T-24, and T-26 in the draft Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity)
    b. Transportation service operations, such as increased frequency on bus routes, or operating a bikeshare or scooter share service (for more information, refer to strategies T-20, T-21, and T-25 in the draft Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity)
    c. Programs that aim to change travel behavior, such as commute trip reduction marketing programs, ridesharing programs, or subsidized transit programs (for more information, refer to strategies T-4 through T-12 and T-22 in the draft Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity)
    d. Other options (please specify): _____

      Comments: _____

4. ***Level of Mitigation Achieved:*** Should the program offer:
    a. Full mitigation of VMT impacts (i.e., a project's impact must be reduced to a less-than-significant level in order to participate)?

b. Partial mitigation of VMT impacts (i.e., a project's impact would be reduced but not necessarily to a less-than-significant level)?
Comments: _____

5. ***On-Site Mitigation Requirement:*** Should the program be:
   a. Available only after the project has implemented all feasible on-site mitigation?
   b. Available in lieu of on-site mitigation?
   Comments: _____

6. ***Program Participation:*** Should the program be:
   a. Voluntary (optional) within participating jurisdictions?
   b. Mandatory within participating jurisdictions?
   Comments: _____

7. ***Program Administration:*** Should the program be administered by:
   a. An existing agency that can effectively oversee a countywide program (please specify)?
   b. A newly formed entity?
   Comments: _____

8. ***Additionality:*** Should the program fund VMT reduction strategies that are:
   a. Not funded through existing tax or exaction programs?
   b. Eligible for funding through existing tax or exaction programs but not currently included in a financially constrained countywide or regional transportation plan?
   c. Currently included in a financially constrained countywide or regional transportation plan?
   Comments: _____

9. ***Social Equity:*** Should the program:
   a. Address social equity concerns through evaluating differential VMT impacts on equity priority communities?
   b. Address social equity concerns through ensuring that mitigation funds are spent predominantly in equity priority communities?
   c. Address social equity concerns through some other mechanism (please specify)?
   d. Not include equity as an explicit goal of the program?
   Comments: _____

10. ***Cost Effectiveness:*** Should the program:
    a. Prioritize strategies that reduce VMT at the lowest possible cost?
    b. Be required to demonstrate that the cost of mitigations can be accommodated without compromising the viability of new housing construction?
    c. Prioritize the minimization of agency administrative costs?
    d. Address cost effectiveness concerns through some other mechanism (please specify)?
    Comments: _____

11. Geographic Scale: Should the program:

a. Require that VMT mitigation funds be spent in the same corridor or jurisdiction where the funds originated?

b. Require that VMT mitigation funds be spent in the same county sub-area where the funds originated?

c. Allow VMT mitigation funds to be spent anywhere in Contra Costa County?

d. Allow VMT mitigation funds to be spent anywhere in the Bay Area region or other geography (please specify)?
Comments: _____

FEHR & PEERS

CONTRA COSTA transportation authority

VMT Mitigation Framework for Contra Costa

Project Advisory Committee Meeting #2

November 29, 2021

INTRODUCTION

Agenda

2:00-2:15 pm	**Introduction**
2:15-2:40 pm	**Framework Survey Results**
2:40-3:00 pm	**Evaluation Criteria**
3:00-3:30 pm	**Breakout Sessions**
3:30-3:50 pm	**Report Back**
3:50-4:00 pm	**Next Steps**

INTRODUCTION

Welcome back!

PAC Member role

- Share your perspective on the needs for a VMT Mitigation Program in Contra Costa
- Provide guidance on how the program should be designed and evaluated
- Review deliverables and help shape the VMT Mitigation Program
- Spread awareness of the program in communities across Contra Costa County

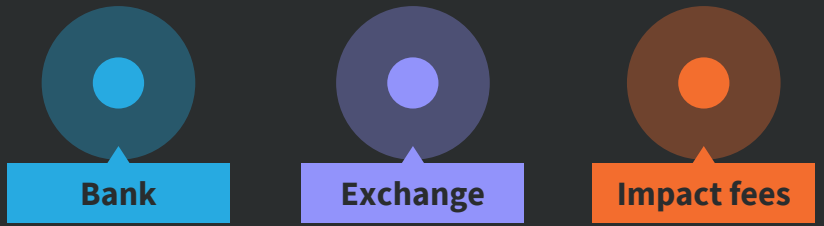
INTRODUCTION

September PAC Meeting

Technical background

- SB 743
- CEQA Impact and Mitigation Concepts

Program alternatives



INTRODUCTION

Observations from September Meeting

- **Concern** about program costs and effects on affordable housing development
- **Interest** in funding transportation projects and programs that experience challenging funding landscape
- **Support** for greater coordination in transportation project/program implementation
- **Interest** in leveraging existing agency structures to implement

INTRODUCTION

Following up

Further thoughts?

- **Legal/CEQA** questions
- Relevant **program models**
- Any particular **concerns?**

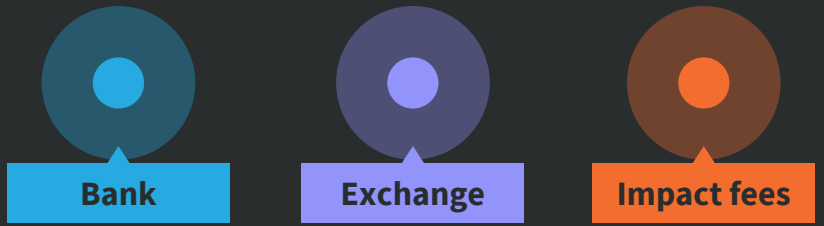
INTRODUCTION

Current Efforts

Develop evaluation criteria

- **Draft criteria** to evaluate program alternatives
- **Survey of PAC members** to shape criteria

Begin identifying program alternatives



Framework Survey

FRAMEWORK SURVEY

Framework Survey: What We Heard

Consensus

- Program should be available to mitigate impacts of **land use developments** (93%) and **transportation infrastructure projects** (80%)
- Program should fund **capital improvements** (100%), **transportation services** (88%), and **behavior change programs** (81%), and perhaps also other strategies such as areawide parking pricing programs or subsidizing infill development
- An **existing agency** should lead the program (100%)
- Program should address **social equity** (although approaches vary)

FRAMEWORK SURVEY

Framework Survey: What We Heard

Range of Opinions

Should maximum on-site mitigation be required first before participating in this program?

- "On-site mitigation will always be the most direct…and can address equity concerns better than indirect, off-site mitigations."

- "Most of the impacts will be felt at the countywide, regionwide, and mega-regionwide level, not just on-site." Better to use these funds to support a list of prioritized countywide projects.

Framework Survey: What We Heard

Range of Opinions

Should the program be mandatory?

- "The benefit of this program is an 'all-in' approach to ensure success." "Would need to be mandatory to be effective and provide the strongest nexus."
- "Requiring participation could backfire and create/exacerbate friction."

FRAMEWORK SURVEY

Framework Survey: What We Heard

Range of Opinions

How important is it that the program limit its cost burden?

- "Prioritize strategies that reduce the greatest amount of VMT, period."
- "Prioritize strategies that minimize cost."
- "Lowest possible cost is going to result in quick-build implementation only…There are high-cost, high-impact network issues that need to be addressed…How are we going to implement the more substantial projects?"

FRAMEWORK SURVEY

Framework Survey: What we heard

Range of Opinions

Should this program…

- Fund strategies that are **currently unfunded**? 50% yes
- Fund strategies that are **eligible for funding** (but not included in a financially constrained program)? 50% yes
- Fund strategies **included in a financially constrained program**? 52% yes
- Prioritize **low-cost strategies**? 60% yes
- Demonstrate that mitigation costs will **not impact new housing**? 53% yes
- **Minimize administrative costs**? 40% yes
- Fund mitigations in the **same county sub-area**? 53% yes
- Fund mitigations **anywhere in Contra Costa County**? 59% yes

Evaluation Criteria

EVALUATION CRITERIA

Essential Characteristics

- Legally sound
- Administratively sound
- Responsive to public/ stakeholder needs

EVALUATION CRITERIA

Optional Characteristics

A. Program achieves full mitigation for most projects (i.e., few projects will have SU VMT impacts and require a statement of override).
B. Program funds a very wide range of VMT reduction strategies including non-transportation strategies like subsidizing infill housing.
C. Program keeps mitigation funds relatively local.
D. Program applies an equity lens when making investment decisions.
E. Program minimizes the total cost per VMT reduced.
F. Program minimizes the year-to-year variation in cost per VMT reduced.
G. Each applicant makes a one-time payment to the program that satisfies their mitigation obligation.
H. Program includes methods for monitoring countywide VMT outcomes over a long-term period (at least 10 years).
I. It is easy to add more VMT strategies and more jurisdictions to the program.

Breakout Discussions

BREAKOUT DISCUSSIONS

Breakout Session Priority Exercise

Key concerns

- What is most important to you/your agency/your stakeholders?

Must have vs. good to have

- Which program elements are critical to success, from your point of view?
- Where do you see tradeoffs between different program elements?
- What pitfalls/consequences do you foresee if certain elements are not prioritized?

External issues

- Do you envision political, economic, or other hurdles that could be managed through program design?

BREAKOUT DISCUSSIONS

Breakout Session Report Back

Key concerns

- What is most important to you/your agency/your stakeholders?

Must have vs. good to have

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- What pitfalls/consequences do you foresee if certain elements are not prioritized?

External issues

- Do you envision political, economic, or other hurdles that could be managed through program design?

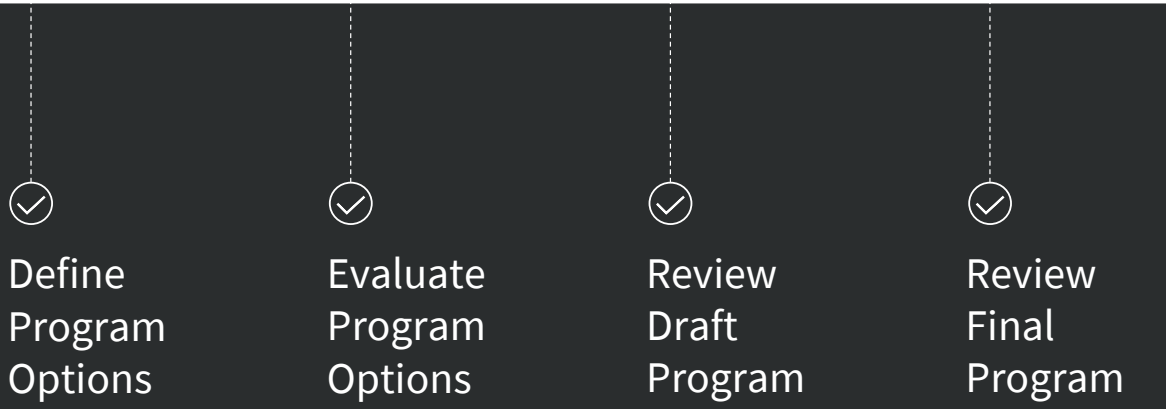
CLOSING

Next Steps

- **Refine evaluation criteria** for a countywide VMT mitigation program
- Develop **four program options**
- **Test** effectiveness and costs of the program options

FRAMEWORK PROJECT GOALS

PAC Meetings



FRAMEWORK PROJECT GOALS

Study Process

KEY QUESTIONS IN DEVELOPING A VMT MITIGATION FRAMEWORK

In the process of developing the VMT Mitigation Framework, we'll need to ask some important questions:

AGENCY OVERSIGHT & FUNDING

- Who pays who?
- Who administers?
- Who delivers the mitigation action?

PROGRAM CRITERIA & EFFICACY

- What types of mitigation actions can be funded?
- What are the equity goals and priorities of the program?
- How will the costs of VMT mitigation affect development feasibility?

DURATION

- For how long must the project applicant participate?

GEOGRAPHY

- What is the right scale for a program?
- How do we ensure equitable distribution of mitigation actions/funds?

LEGALITY

- What is the CEQA mitigation potential?

MONITORING & DATA NEEDS

- What is being evaluated?
- Who evaluates the mitigation action?
- How frequently does evaluation/ re-valuation occur?

FEHR PEERS

CONTRA COSTA transportation authority

Thank you!

CCTA VMT Mitigation Framework: Project Advisory Committee Meeting #2

November 29, 2021
2:00 PM – 4:00 PM

LOCATION:
Zoom

PRESENTERS:
Matt Kelly, CCTA
Julie Morgan, Fehr & Peers

Meeting Notes

Introduction

- Welcome
- Agenda
- Project Update & September meeting recap

Questions and Comments

- Is there support for exempting affordable housing developments from CEQA requirements or overriding determinations of significant and unavoidable impacts for affordable housing?
  - *Response:* Technical assessment of affordable housing trip generation supports exempting them from CEQA impact analysis. Lead agencies can also make a policy determination to exempt affordable housing.
- *Resources:* UC Berkeley paper on VMT Banking; Link 21 VMT banking document

Framework Survey

- What we heard

Questions and Comments

- Each city has their own requirements for developer actions (TDM programs, etc.) that could also be addressed by a Countywide VMT mitigation program. Would the countywide program supersede local requirements? How would the countywide program evaluate VMT reduction effects of local requirements?
  - *Response:* This will have to be addressed in program design. One question for stakeholders: would local agencies accept reducing local requirements in exchange for participation in a countywide program, or would they prefer to continue local requirements?

- Would like to continue to see a range of options and some kind of requirement for larger projects.
- The impacts of very small projects are hard to mitigate; these types of projects are most likely to benefit from this kind of program.

Evaluation Criteria

- Purpose of criteria
- Essential characteristics
- Optional characteristics
- Discussion

Questions and Comments

- Which of these characteristics are most likely to result in reduced GHG emissions?
  - *Response:* All would do so indirectly.
- Which approach is most likely to support the funding of ongoing transit operations?
  - *Response:* It can be a challenge to evaluate a new land use/transportation project's fair share of ongoing program costs. Another challenge is ensuring that mitigations continue for the life of the project. To stop making an ongoing contribution, a project would need to provide substantial evidence that its operations result in mitigation of VMT impacts and will continue to do so.
- Is it currently an option for a project to not achieve full mitigation of VMT impacts under CEQA?
  - *Response*: The CEQA requirement is mitigation "to the extent feasible." When feasible mitigation actions do not fully mitigate impacts to a "less than significant" level, then statements of overriding considerations are made.
- Would this program then be intended to mitigate residual impacts from projects that cannot fully mitigate their impacts internally?
  - *Response:* It could be used that way if that is the design; i.e., a project would be required to implement all feasible on-site mitigations first, and then if there are still residual impacts the project would participate in the countywide program to achieve enough additional mitigations such that its VMT impact is mitigated to a "less than significant" level.

Small Group Discussions

- *See summaries (attached)*

Report Back

- Individual projects must be accountable for their impacts; however, there must be a way to approve projects with a negative declaration.
- Important to provide a wide range of mitigation strategies. Difference of opinion on whether non-transportation projects should be funded.
- Countywide scale for mitigation funding preferred.
- Equity must be addressed; however, program should ensure that equity concerns do not affect legal defensibility of program under CEQA.
- Developers must have predictable costs.
- Performance monitoring is critical to ensure that the program is effective and retains support.
- Important to maintain flexibility as technology changes.

Attachments:
Attendee List
Breakout Session Summaries

Attachment 1: Attendee List

- Matt Kelly, CCTA
- Julie Morgan, Fehr & Peers
- Ron Milam, Fehr & Peers
- Sarah Peters, Fehr & Peers
- John Hoang, Director of Planning for CCTA
- Stephanie Hu, Director of Projects for CCTA
- Steve Ponte, COO, Tri Delta Transit
- Laurel Sears, Grant Manager, Caltrans D4
- Ben Schuster, Transportation Planner, City of Martinez
- Kristen Connelly, CEO of East Bay Leadership Council
- Lisa Vorderbrueggen, Building Industry Association, East Bay
- John Nemeth, Executive Director, WCCTAC
- Melody Reebs, Manager of Planning, County Connection
- Winnie Chung, Transportation Program Manager, City of Concord
- Smadar Boardman, Traffic Engineer, City of Walnut Creek
- Kamala Parks, Senior Planner, BART
- Jamar Stamps, Principal Planner, Contra Costa County
- Jody London, Sustainability Manager, Contra Costa County
- Juan Pablo Galvan Martinez, Senior Land Use Manager, Save Mount Diablo
- Rob Thompson, Planning Manager, WestCAT

Attachment 2: Breakout Discussion Summaries

Discussion Framework

Directions: Please give each characteristic a 1-2-3 rating. A 1 rating means you think that characteristic is essential. A 2 rating means it would be great if the program had that characteristic, but it wouldn't be a dealbreaker if it didn't. A 3 rating means you do not think that characteristic should be a priority at all.

Rating	Characteristic
	A. Program achieves full mitigation for most projects (i.e., few projects will have SU VMT impacts and require a statement of override.)
	B. Program funds a very wide range of VMT reduction strategies, including non-transportation strategies like subsidizing infill housing.
	C. Program keeps mitigation funds relatively local.
	D. Program applies an equity lens when making investment decisions.
	E. Program minimizes the total cost per VMT reduced.
	F. Program minimizes the year-to-year variation in cost per VMT reduced.
	G. Each applicant makes a one-time payment to the program that satisfies their mitigation obligation.
	H. Program includes methods for monitoring countywide VMT outcomes over a long-term period (at least 10 years).
	I. It is easy to add more VMT strategies and more jurisdictions to the program.

Group 1 Discussion Summary

Ratings	Characteristic	Notes
2,2,1, 2, 2	A. Program achieves full mitigation for most projects (i.e., few projects will have SU VMT impacts and require a statement of override.)	Program should allow projects a way to move forward by contributing to mitigating their impacts, particularly infill projects, which are often "dinged" for impacts. This gets to the heart of the legitimacy of this program - individual projects must be accountable for their impacts.
1, 1, 1, 1	B. Program funds a very wide range of VMT reduction strategies, including non-transportation strategies like subsidizing infill housing.	This is the essence of what we're trying to do here.
3, 3, 2, 3	C. Program keeps mitigation funds relatively local.	Impacts often spread beyond jurisdictional boundaries. If it's a countywide program the funds should be spent within the county, but not otherwise restricted.
1, 1, 1	D. Program applies an equity lens when making investment decisions.	Focus on socioeconomic equity. Historical disinvestment is a concern.
3, 3, 3	E. Program minimizes the total cost per VMT reduced.	Efficiency is important but can be difficult to implement.
2, 2, 2	F. Program minimizes the year-to-year variation in cost per VMT reduced.	Important from a developer's perspective to have consistency in costs.
2, 2	G. Each applicant makes a one-time payment to the program that satisfies their mitigation obligation.	
1, 1	H. Program includes methods for monitoring countywide VMT outcomes over a long-term period (at least 10 years).	Critical to measure performance – even if it's difficult to do.
1, 1	I. It is easy to add more VMT strategies and more jurisdictions to the program.	Program needs to be flexible enough to expand beyond the County and address new transportation technologies.

Group 2 Discussion Summary

These are the items that the group members felt strongly about. The items without rankings did not engender much discussion from the group.

Rating	Characteristic
1, 1	A. Program achieves full mitigation for most projects (i.e., few projects will have SU VMT impacts and require a statement of override.)
	B. Program funds a very wide range of VMT reduction strategies, including non-transportation strategies like subsidizing infill housing.
3, 1, 1	C. Program keeps mitigation funds relatively local.
	D. Program applies an equity lens when making investment decisions.
1, 1, 1, 1	E. Program minimizes the total cost per VMT reduced.
1, 1	F. Program minimizes the year-to-year variation in cost per VMT reduced.
1, 1	G. Each applicant makes a one-time payment to the program that satisfies their mitigation obligation.
1	H. Program includes methods for monitoring countywide VMT outcomes over a long-term period (at least 10 years).
	I. It is easy to add more VMT strategies and more jurisdictions to the program.

Home-builders perspective: Highest priority items are E, F, G, and H. Predictability of mitigation costs is very important. They prefer to do most of a project's mitigation on-site, since those changes would directly benefit the project's residents.

CCTA perspective: Highest priority items are A, E, and G. Keeping funds local (item C) is not a priority, because CCTA delivers large infrastructure projects that will probably require broad-scale mitigation options.

City perspective: Would like to achieve full mitigation so that findings of override are not required. However, realizes that this might be difficult to achieve for large projects, particularly big transportation infrastructure projects.

Transit agency perspective: Concerned about non-local agencies viewing the program as a source of dollars, so wants to keep the money local.

County perspective: Keeping the money local will be important for political viability of the program.

Business perspective: Concerned about adding costs to development, prioritize keeping costs managed and predictable.

Group 3 Discussion Summary

Rating	Characteristic	Comments
1,1,1	A. Program achieves full mitigation for most projects (i.e., few projects will have SU VMT impacts and require a statement of override.)	Important to allow for neg decs.
3,3,2	B. Program funds a very wide range of VMT reduction strategies, including non-transportation strategies like subsidizing infill housing.	Challenging enough to select and fund transportation strategies and there should be plenty of transportation strategies to choose from.
3,3	C. Program keeps mitigation funds relatively local.	County-wide scale provides the best bang for the buck.
2	D. Program applies an equity lens when making investment decisions.	Important but concerned that adding an equity lens could add legal risk if that means reducing the effectiveness of reducing the environmental impact.
1,3	E. Program minimizes the total cost per VMT reduced.	Depends on the types of projects/strategies being funded.
1/2,2,2	F. Program minimizes the year-to-year variation in cost per VMT reduced.	Developers need mitigation cost certainty.
3,3,3	G. Each applicant makes a one-time payment to the program that satisfies their mitigation obligation.	Developers need mitigation cost certainty.
2,1,1	H. Program includes methods for monitoring countywide VMT outcomes over a long-term period (at least 10 years).	Need the investments to have a high return to maintain support for the program.
2,2,2	I. It is easy to add more VMT strategies and more jurisdictions to the program.	Flexibility is important especially as transportation technology changes.

FEHR & PEERS

CONTRA COSTA transportation authority

VMT Mitigation Framework for Contra Costa

Project Advisory Committee Meeting #3

August 16, 2022

INTRODUCTION

Agenda

10:00-10:10 am	**Introduction**
10:10-10:30 am	**Project Update**
10:30-11:15 am	**Program Options**
11:15-11:55 am	**Discussion**
11:55 am-noon	**Next Steps**

Introduction

INTRODUCTION

Welcome back!

Reminder on PAC Member role:

- Share your perspective on the needs for a VMT Mitigation Program in Contra Costa
- Provide guidance on how the program should be designed and evaluated
- Review deliverables and help shape the VMT Mitigation Program
- Spread awareness of the program in communities across Contra Costa County

Project Update

PROJECT UPDATE

Recap of Prior PAC Meetings

Discussed

- ✓ **Program structure**
- ✓ **Desired outcomes**
- ✓ **Priorities**

PROGRAM OPTIONS

Program Structure Alternatives

PROJECT UPDATE

Program Evaluation Criteria

- Legal Foundation
- Agency Oversight & Funding
- Geography & Scale
- Applicability
- Data Analysis & Monitoring
- Program Risk Management

EVALUATION CRITERIA

Essential Program Characteristics

- Legally sound
- Administratively sound
- Responsive to public/ stakeholder needs

PROGRAM OPTIONS

Feedback on Program Characteristics

Agreement: Program *should*

- Apply Countywide
- Fully mitigate impacts for most projects
- Provide predictable, stable costs
- Have CCTA as likely administrator

Divergence: Program *could*

- Prioritize equity
- Fund only transportation-related strategies
- Fund land use and other non-transportation-focused strategies

PROJECT UPDATE

New VMT Guidance Available

Recent Caltrans Documents

- Mitigation Playbook
- Recommended Project Review Practices

PROJECT UPDATE

Caltrans Mitigation Playbook

Mitigating induced VMT for highway projects

- Wide array of eligible mitigation strategies: land use, commute trip reduction, active transportation, parking
- Costs and mitigation effectiveness evaluated over 20 years
- Tools available: Caltrans SB 743 Implementation Resources

PROJECT UPDATE

Caltrans Significance Thresholds

Project Review for Highway Projects

- Threshold: Any increase in lane miles will induce VMT, and any increase in VMT is a significant impact (i.e., threshold is net zero VMT)
- Process: Sets a very high bar for accepting a significant and unavoidable VMT impact
- Likely Result: Very limited number of highway projects of any type, even Express Lanes projects, may be approved; may have effects on increased local congestion and cut-through traffic

Mitigation Program Options

PROGRAM OPTIONS

Alternatives Development

Explored:

- Program structure
- VMT reduction estimates
- Level of feasible mitigation
- Equity factors

PROGRAM OPTIONS

Future Growth in Countywide VMT

Source:	Daily VMT to be Mitigated:
Adding highway lane-miles	100,000 – 200,000
Adding population and jobs	~ 450,000

PROGRAM OPTIONS

Program Structure

Countywide program funding some or all of the following:

- Bicycle and pedestrian network improvements
- Community-scale TDM strategies
- Expansion/addition of transit services
- Removal of existing travel lanes (e.g., road diets)
- Construction of new affordable housing units

PROGRAM OPTIONS

VMT Reduction Estimates

Source from CAPCOA Handbook: Effect varies widely by strategy

- Community-level strategies:
  - Small reductions applied to large populations
- Project-level strategies:
  - Larger reductions applied to small populations

VMT & GHG Reduction Strategies

Percentage of VMT or greenhouse gases that would be mitigated using each strategy

Filter strategies by:

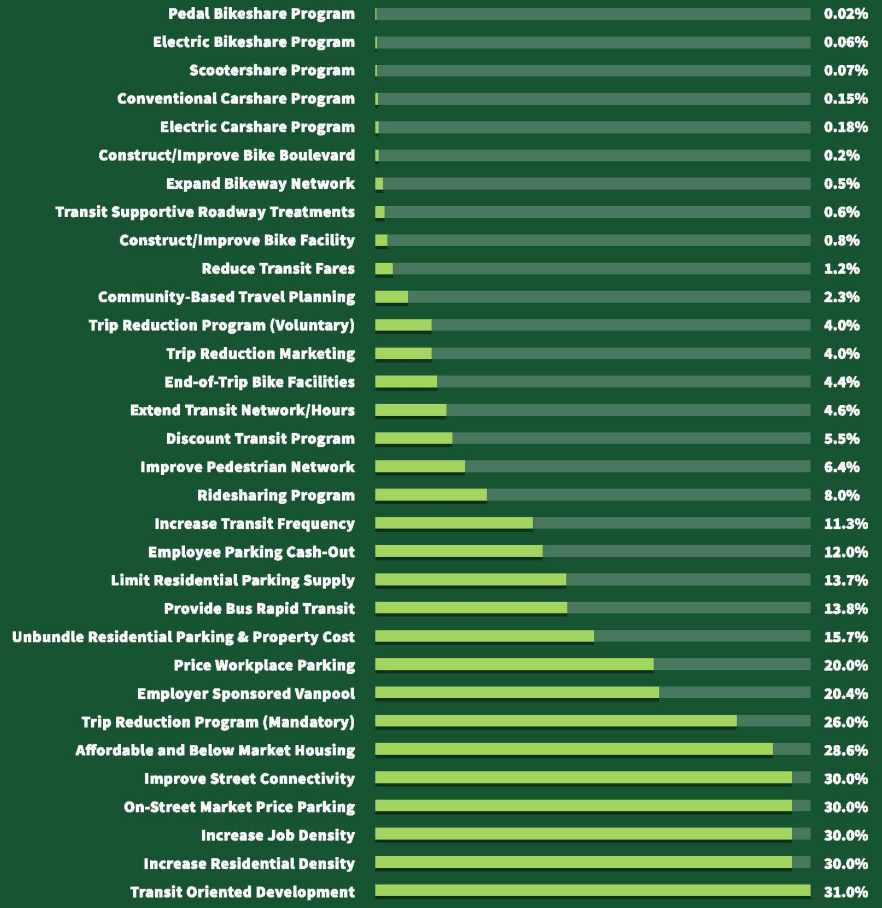
Location context

Urban & Suburban | Rural

Scale of application

Project | Community

FEHR & PEERS



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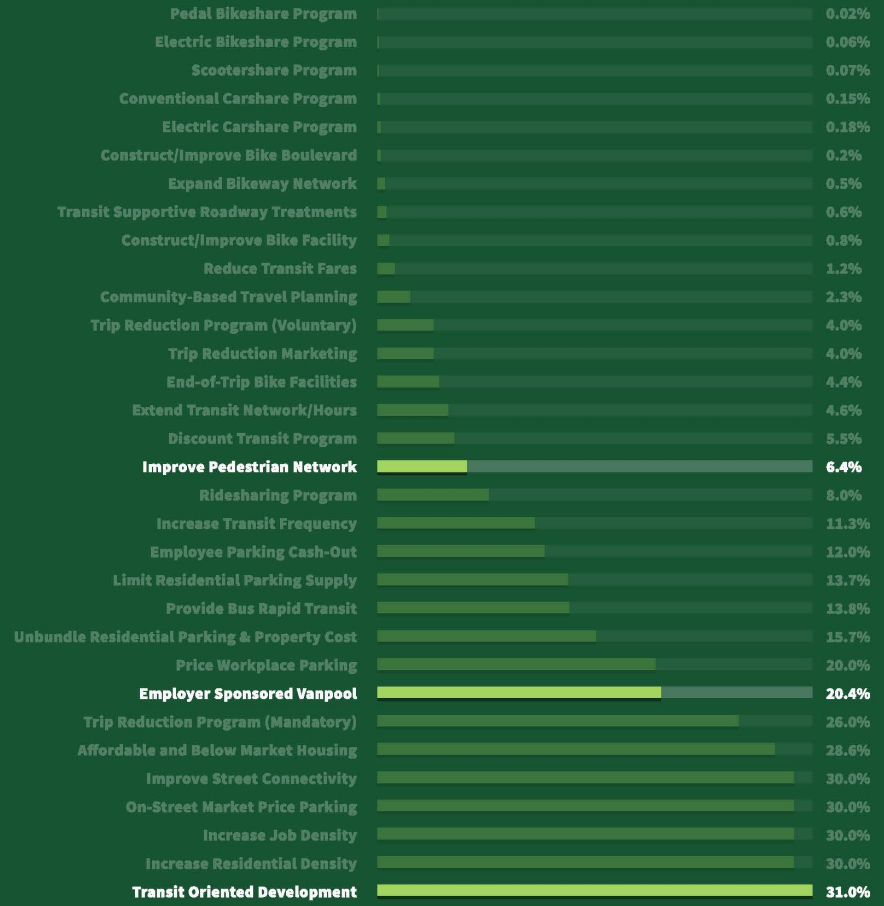
FEHR & PEERS



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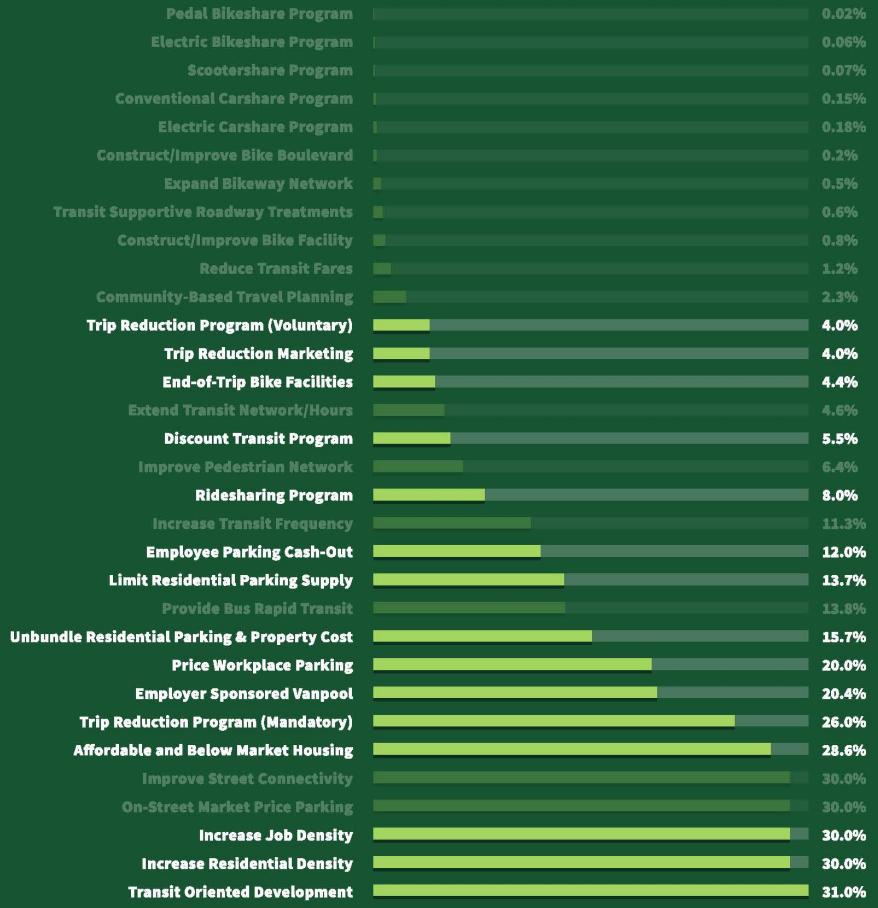

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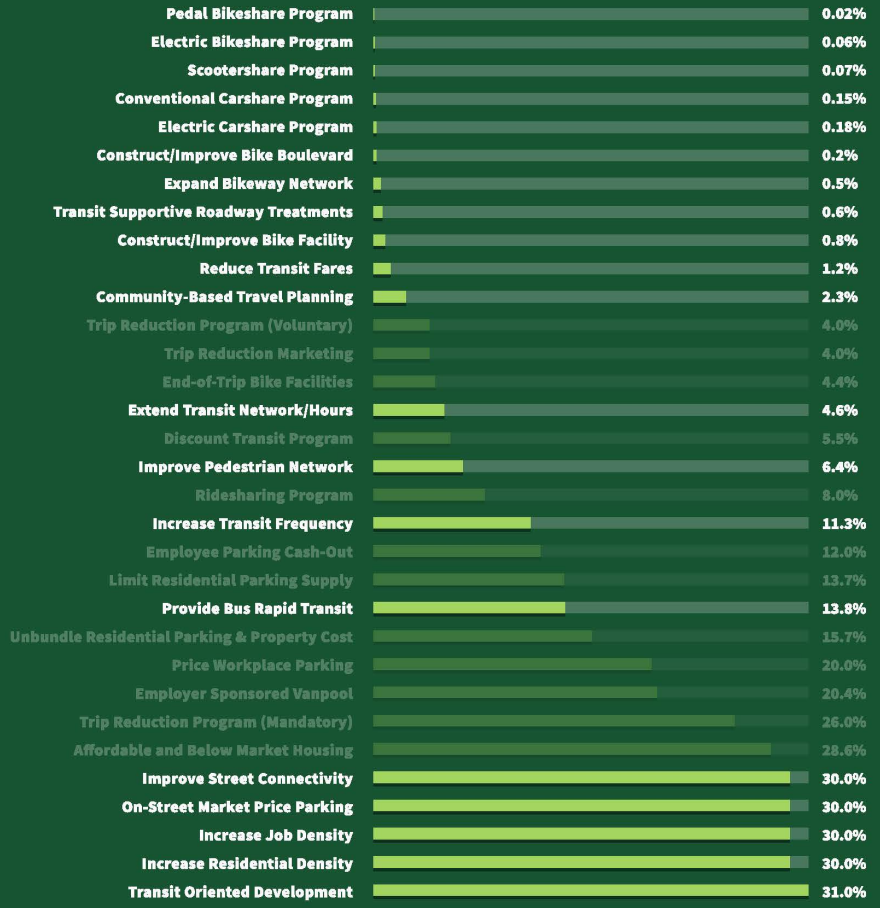


PROGRAM OPTIONS

Program Structure

Countywide program funding some or all of the following:

- Bicycle and pedestrian network improvements
- Community-scale TDM strategies
- Expansion/addition of transit services
- Removal of existing travel lanes (e.g., road diets)
- Construction of new affordable housing units

PROGRAM OPTIONS

Possible Mitigation Actions

- Bicycle and pedestrian network improvements
  - ✓ Build out countywide low-stress bicycle network
- Community-scale TDM strategies
  - ✓ Give free eBikes to all households below a certain income level
  - ✓ Price parking in all commercial districts countywide
- Expansion/addition of transit services
  - ✓ Make all bus routes countywide fare-free
  - ✓ Make all bus routes operate at 10-minute headways
- Removal of existing travel lanes (e.g., road diets)
- Construction of new affordable housing units

PROGRAM OPTIONS

Program Alternatives

- **Banks**: Program puts a monetary value on VMT reduction and applicant purchases VMT reduction credits
- **Exchanges:** Program creates a pre-qualified list of VMT reduction strategies and applicant chooses a strategy and funds it directly
- **Impact Fees:** Program funds capital projects that reduce VMT, applicant pays a set fee and administrator uses money to construct projects

PROGRAM OPTIONS

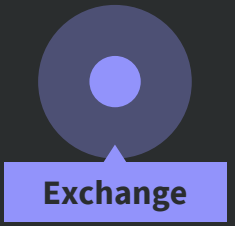
Mitigation Banks

- Can fund any type of mitigation strategy
- Could focus on specific geographic area, or could apply countywide
- Good potential to address equity issues and other policy priorities, as bank administrator has control over prioritizing funding

PROGRAM OPTIONS

Mitigation Exchanges

- Best for funding small-scale or incremental mitigation strategies
- Could be a countywide program, but applicants may prefer to fund mitigation strategies close to their project site
- Limited ability to address equity issues or other policy priorities, as applicants will choose the mitigation strategy that most closely matches their VMT needs at the lowest possible cost and administrator doesn't control the prioritization



PROGRAM OPTIONS

Impact Fees/In-Lieu Fees

Impact Fees

- Fund capital projects from a defined project list
- Establish clear nexus with VMT reductions
- Requires annual monitoring and reporting

In-Lieu Fees

- Fund actions that can be demonstrated to improve public welfare
- No annual monitoring or reporting requirements

PROGRAM OPTIONS

Approach to Achieving Less-than-Significant CEQA Findings

Depends on other actions taken by lead agencies:

- **Option:** Lead agencies prepare VMT impact analysis in General Plan/GP EIR, make findings about the jurisdiction-wide VMT impact (in some cases, this would be a significant and unavoidable impact), and identify a set of feasible mitigation actions to reduce the severity of the impact, which could include participation in a countywide mitigation program (like a bank , exchange, or fee program).

Discussion

DISCUSSION

Questions

1. What needs to be clarified?
2. What VMT reduction strategies are you most interested in, and why?

Next Steps

NEXT STEPS

Future PAC Meetings

Thank you!

CCTA VMT Mitigation Framework: Project Advisory Committee Meeting #3

Meeting Notes

August 16, 2022

10:00 AM – 12:00 PM

LOCATION:

Zoom

Click here to join

PRESENTERS:

Matt Kelly, CCTA
Stephanie Hu, CCTA
Julie Morgan, Fehr & Peers
Ron Milam, Fehr & Peers
Sarah Peters, Fehr & Peers
Grace Chen, Fehr & Peers

Introduction

Welcome

- Today we will share an update of what we've been working on, will be asking for input on program options to explore further

Project Update

Progress to date

Recap of takeaways from PAC Meeting #2

- *Clarification:* CEQA review does not currently include an equity component.
- *Clarification:* The types of mitigations that could be funded would be either transportation-only OR both transportation and land use-related.

Questions and Comments

- What were some of the concerns about incorporating land use strategies as a mitigation for VMT impacts? They can be very effective.
  - *Response:* Concerns about how enforceable/administratively feasible the land use strategies would be, especially because many stakeholders who would enforce the mitigations are in transportation agencies that may not have the capacity to enforce land use strategies.

New VMT Guidance from Caltrans

- Mitigation Playbook
  - Discrepancy between CAPCOA guidance and Caltrans Mitigation Playbook
  - Cost per VMT reduced is an important question for developers and local jurisdictions. Under CEQA, however, feasibility does not include an assessment of how affordable. Focus is on mitigations that are effective and enforceable.

- Recommended Project Review Practices: Caltrans Significance Thresholds for Highway Projects
  - Currently, the effective threshold is net zero VMT – that is, a "substantial and measurable increase in VMT."
  - Therefore, any increase in lane miles or reduction in delay results in an increase in VMT, which is a significant impact that would need to be mitigated.

Questions and Comments

- *Clarification:* Note - Caltrans does not set thresholds. The VMT review is to identify and mitigate substantial and measurable increases in VMT.
- Tolling and charging for parking, when priced properly, shouldn't induce demand.
  - *Response*: Pricing at the parking end can discourage vehicle trip making; however, tolling is unlikely to reduce demand unless tolls are set high enough to induce drivers to switch modes. Currently, Caltrans tolls lanes to optimize vehicle throughput, resulting in improved flow rates within a travel lane, which is a much lower price than the toll rate that would reduce demand for highway space.

Program Options

VMT reduction estimates

- Future growth in Countywide Daily VMT above adopted threshold (15% below existing daily VMT/capita).
  - Review this to understand how much VMT needs to be mitigated in CC County over the next 20 years.
  - Sources of VMT growth:
    - Added highway lane-miles/other effective increases to capacity: induced Daily VMT estimate of ~100-200,000 (using NCST calculator tool)
    - Added population and jobs: 450,000 VMT/day
    - ***Total:*** 550,000-650,000 VMT/day to achieve the thresholds adopted by local jurisdictions

Questions and Comments

- This seems assume that everyone who lives/works in Contra Costa County will drive as their primary means of transportation. This program should encourage the use of non-driving modes, encourage employers to work together to provide shuttles to/from transit, etc. Forgive me if this is coming up later in the presentation.
  - *Response*: Yes, that's coming up. What we're trying to show here is the scale of the problem. Next step looks at a grouping of strategies and evaluating how effective they would be.
  - *Response*: These projects are Measure J projects that are programmed to be constructed by 2040, most of which is coming from the I-680 Express Lanes project; the rest is growth that is projected in adopted city and County general plans. We are not predicting the future or trying to shift behavior - this is just what is projected based on current plans.

- It would be great to improve existing transit service rather than adding shuttles. It's very challenging to be a transit-dependent rider in the County.
- This seems to be punishing Contra Costa County for providing places for people to live and work.
  - *Response*: These numbers are coming from adopted local and regional plans and modeling.
  - *Response*: This is also a pre-pandemic forecast - so it may not fully reflect changes in where people live and how they commute that have occurred in the past few years.

Program structure

- Countywide program funding mitigations at a countywide scale.

Mitigation strategies

- Potential mitigations include reduction of existing vehicle capacity (e.g., road diets) and land use strategies as well as traditional transportation improvements.

Questions and Comments

- How would a travel lane reduction occur on a highway?
  - *Response*: Examples include road diets on "traditional highways" that might be the main route through a town - functioning like an arterial. Removing freeway lanes is very rare.
- So this would not mitigate the VMT resulting from freeway projects? What about allocating lanes to bus-only lanes?
  - *Response*: Any expansion of freeway capacity would induce VMT; mitigations would be targeted to reduce VMT from local travel. Alternatively, mitigations could take the form of aggressive tolling on freeway lanes or increasing parking prices. Technical analysis has not shown a VMT reduction from bus-only/HOV lanes on freeways.
  - *Response*: This *Question* has come up as well when examining freight-only lanes.
- Our experience with bus-only lanes in Alameda County has been that transit ridership increases massively when bus-only lanes. Conversely, when road diets have occurred that reduce vehicle capacity to add bike lanes, we see transit ridership fall. Road diets need to consider effects on transit.
- Very important, however, to ensure buses can enforce the bus only lane with cameras. The BRT mentioned got state legislation passed to enable AC Transit to enforce the use of bus only lanes. Some other bus only lanes that haven't been enabled hasn't worked as well because they are used by freight delivery, passenger pick-ups and drop-offs, and parking for other services.

CAPCOA Mitigation menu

- Scale of application: Project-scale and Community-scale strategies.
  - Note that community-scale strategies tend to have smaller percentage effects but will apply to a much larger population.
- Location context: Urban/Suburban/Rural

- Note that some other strategies may be feasible (as shown in Mitigation Playbook) but may not have robust enough data to qualify as foundations of significance findings under CEQA.

Questions and Comments

- The regional-scale (and corridor-specific) mitigation 'target' shared a moment ago simply helps guide the makeup of the program's suite of services & investments. As Julie is sharing now, what exactly those mitigation strategies are, and what their collective effectiveness is, and how to tailor them to specific users & communities becomes the real challenge. The point regarding first/last mile solutions to link land use & mobility services is well-taken & I would recommend be a big focus for the program because they can help maximize different measures.
- There is round-trip car share, but also point-to-point car share (AKA one-way car share), which I think might have stronger mode-shift impacts and can also discourage some multiple vehicle ownership.

Possible mitigation actions

- Build out countywide low-stress bike network - $350M-1B for a modest reduction in VMT.
- Community scale TDM: free e-bikes to low-income households, price parking in all commercial districts

Questions and Comments

  - I would use the term "manage parking" and include 1/2 mile around major transit stops and stations.
  - Most employers offer free parking. I'm sure you know that. Making people pay to park at work would probably make a big difference if you could pull it off politically.
  - Important to identify strategies that could help workers commute without their cars.
- Expand/add transit services: fare free buses countywide; 10-minute headways countywide

Questions and Comments

  - 10-minute headways are not likely to be feasible without much greater densities along bus routes. Important to do a gut check when proposing updates to headways. Would prefer to see land use strategies to support transit service before expanding service.
  - I think you also need to solve for last-mile challenges if you want people to take transit.
- It seems like some of these strategies would be much more effective than others. How do we measure and prioritize among these mitigations? The way these actions are presented makes them seem to be equally effective.
  - *Response*: Correct, these are not all equally effective. The point here is to get stakeholders thinking about countywide-scale actions that could be funded by this type of program.
- We need to see these mitigations presented in order of effectiveness to prioritize among them.
  - *Response*: Yes, we will come back with estimates of cost and effectiveness with each of these kinds of strategies.
- It seems that the housing and other land use strategies are the most effective.
  - *Response*: Yes, but this does not yet include cost. Need to understand cost per VMT reduced.

- Construction of affordable housing needs to be built in places that have good transportation and access to goods and services.
- I would be very interested to see what the costs and associated effectiveness would be. This funding must come from somewhere, and fees currently contribute significantly to high housing construction costs. Any fee needs to produce direct and demonstrable impacts under CEQA if this would be an impact fee program.
    - *Response*: Thank you for pointing that out.
- One point that is missing is the cost of meeting minimum parking requirements, which increase the cost of construction. If thinking about e-bike distribution, we also need to provide a safe place to park them - usually a locker or something similar, which would add to the cost. Also note that bus or shuttle transit to a BART station tends to be much less used than walk/bike/drop off at BART.
    - *Response*: Also note that all our research is pre-COVID - there are still open questions about how long the COVID effects on transit will last.
    - *Response*: Three big outstanding questions regarding transit and reduction in VMT: 1) Lasting effects of COVID and how it affects travel behavior. 2) National decline in transit ridership across the country and increase in # autos/household (starting in 2015). 3) Since 2015, there's a question about what transit's role is in reducing VMT - it has become less effective since then. Concern is that improved transit may not substantially reduce VMT without adjusting other factors that influence decisions (e.g., bus-only lane added in a road diet).
- Pricing is important; currently, parking is free and often on public streets. Looking at unbundling parking from housing, removing parking minimums, and pricing parking are most effective at encouraging people not to drive when it is an option for them.
    - *Response*: Local jurisdictions have a lot of control over parking policy and pricing.
- Can this program consider economic development initiatives that will create jobs closer to jobs in East County?
- I think it would be worthwhile for this group to consider a post-implementation evaluation. It would be good to build our local database to show the effectiveness of these strategies. This could help reinforce the confidence in these strategies from local agencies and developers. Also, travel behavior changes so much over time - we need to take that into account when thinking about the effectiveness of certain strategies.
    - *Response*: That sounds like an excellent topic for a Caltrans SCS grant.
    - *Response*: VMT monitoring is done at the city, county, MPO, and state level through the Caltrans HPMS. https://dot.ca.gov/programs/research-innovation-system-information/highway-performance-monitoring-system. This is an aggregate level look at VMT trends. Other methods such as using mobile device data are also available through vendors such as Replica and StreetLight.
- I am waiting to hear about how all this will tie into individual jurisdictions' roles and responsibilities. Establishing nexus is critical for the City to agree on this. As mentioned, I don't see any of the local road projects triggering VMT increase - most of them are bike/ped improvements. So, it goes to the land development projects - for which the Cities have already

adopted local VMT threshold. How will this program interface with that already adopted local policies? If I'm jumping the gun, I'll wait to see at the end.

- *Response*: To clarify, the two numbers here are countywide. Each individual city's portion would depend on its context and its share of future growth. In some cities, most of the growth is likely to happen in very transit-oriented areas and will result in lower VMT impacts; in others, growth will occur far from transit and result in higher VMT impacts.

Approach to achieving less-than-significant CEQA Findings

- One option: Lead agencies prepare VMT impact analysis in General Plan/GP EIR, which could include participation in a countywide VMT mitigation program.

Questions and Comments

- To be clear, will this project be determining the structure of that countywide mitigation program?
  - *Response*: Yes.

Next steps

Questions and Comments

- Will this be presented to individual city councils?
  - *Response:* Not as part of this project - since we are not yet implementing anything through this effort - but before any of this would be implemented, we would of course present to City Councils. If there is interest, we can present on the feasibility study to City Councils and commissions.
- Will we have an opportunity to review and provide comment on these materials?
  - *Response:* Yes, we will send out the slide deck and work with Matt to establish a timeline for your comments.
- What's the expected timeline for analysis to be complete so we can review and provide additional feedback?
  - *Response:* We will have results for you this fall - anticipating a late October/early November meeting to review results, and reconvening in early 2023.

PAC Members Attending

- John Cunningham, Contra County
- Steve Ponte, TriDelta Transit
- Kamala Parks, BART
- Krute Singa, MTC/ABAG
- Laurel Sears, Caltrans D4
- Saravana Suthanthira, City of Concord Transportation Program Manager
- Jody London, Contra Costa County Sustainability
- Melody Reebs, Contra Costa County Connection
- John Hwang, CCTA
- Lindy Johnson, East Bay Leadership Council
- Laurie Talbert, 511 Contra Costa
- Lisa Vorderbrueggen, BIA Bay Area
- Jamar Stamps, Contra Costa County
- Juan Pablo Galvan Martinez, Save Mount Diablo
- Yun Na Rhee, City of Walnut Creek
- Chris Kuzak, Caltrans HQ Sustainability
- Neil Peacock, Caltrans HQ SB 743 advisor
- Leah Greenblat, WCCTAC
- Jim Cunradi, AC Transit

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CONTRA COSTA transportation authority

VMT Mitigation Framework for Contra Costa

Project Advisory Committee Meeting #4

October 26, 2022

INTRODUCTION

Agenda

3:00-3:10 pm	**Introduction**
3:10-3:25 pm	**Project Update**
3:25-4:15 pm	**VMT Mitigation Cost Effectiveness**
4:15-4:50 pm	**Discussion**
4:50-5:00 pm	**Next Steps**

Introduction

INTRODUCTION

Welcome back!

Reminder on PAC Member role:

- Share your perspective on the needs for a VMT Mitigation Program in Contra Costa
- Provide guidance on how the program should be designed and evaluated
- Review deliverables and help shape the VMT Mitigation Program
- Spread awareness of the program in communities across Contra Costa County

Project Update

PROJECT UPDATE

Recap of Prior PAC Meetings

Discussed

- Program structure
- Program priorities
- Mitigation strategies

PROJECT UPDATE

Program Structure

- Countywide program
- Designed to fund strategies with demonstrated VMT reduction benefits
- Could be structured as a bank, exchange, or fee program
- Should have clear linkage to the VMT impact determinations of local agencies (for land development projects) and of Caltrans (for highway projects)

PROJECT UPDATE

Feedback Received on Program Characteristics

Ideally, Program *should:*

- Apply Countywide
- Fully mitigate impacts for most projects
- Provide predictable, stable costs
- Have CCTA as likely administrator

Program *could:*

- Prioritize equity in a variety of ways
- Fund only transportation-related strategies
- Fund transportation plus land use and other non- transportation-focused strategies

PROJECT UPDATE

Feedback on Mitigation Strategy Options

Program should be open to funding these categories of strategies:

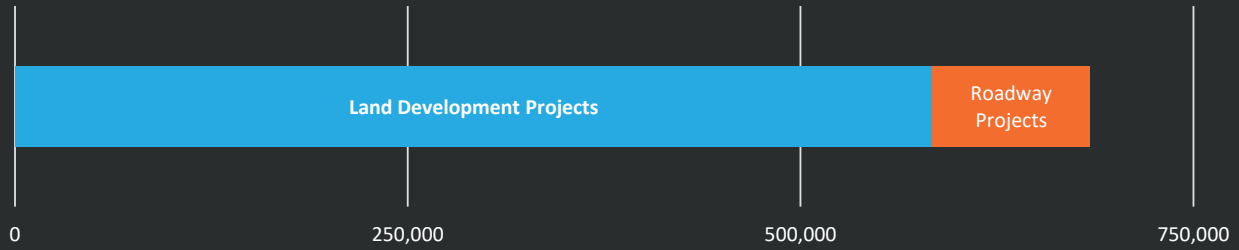
- Bicycle and pedestrian network improvements
- Community-scale TDM strategies
- Expansion/addition of transit services
- Removal of existing travel lanes (e.g., road diets)
- Land use strategies, such as construction of affordable housing units or rental/mortgage subsidies for local workforce housing

Costs and Effectiveness of VMT Mitigation Strategies

VMT MITIGATION COST EFFECTIVENESS

Projected Countywide VMT Growth above CEQA Threshold

- Land use projects: *~580,000 daily VMT above CEQA threshold over next ten years*
- Transportation projects: *~100,000 daily VMT above CEQA threshold over next ten years*



For context, total countywide VMT is currently estimated at ~47 million.

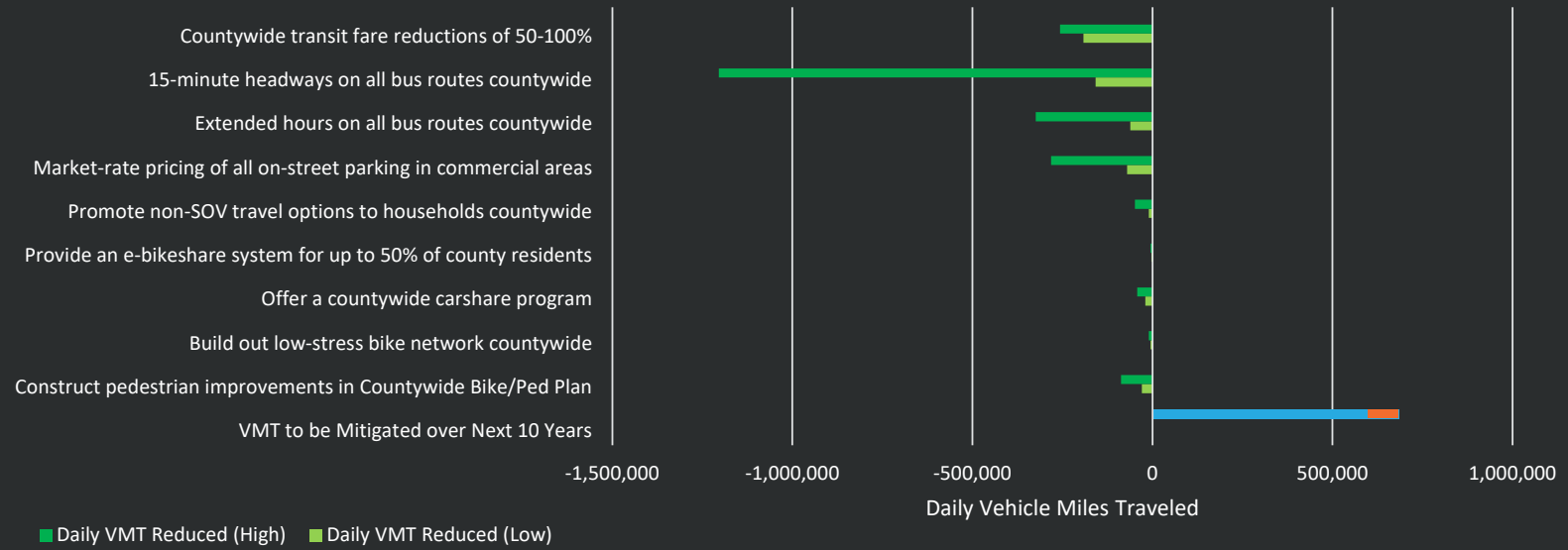
VMT MITIGATION COST EFFECTIVENESS

Possible Mitigation Strategies

- Bicycle and pedestrian network improvements
  - Build out countywide low-stress bicycle network and pedestrian network
- Community-scale TDM strategies
  - Countywide eBike-share system
  - Countywide carshare program
  - Price parking in all commercial districts countywide
- Expansion/addition of transit services
  - Reduce or eliminate fares on all bus routes countywide
  - Make all bus routes operate at 15-minute headways
  - Extend hours on all bus routes
- Land use strategies – *results forthcoming*

VMT MITIGATION COST EFFECTIVENESS

Potential VMT Reductions from each Strategy



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VMT MITIGATION COST EFFECTIVENESS

Caveats

"Best available" evidence doesn't tell us everything we want to know

- There is little available data about applying some of these strategies at a large geographic scale (such as citywide or countywide)
- There have been big changes in travel behavior since the available data was collected
  - All data predates COVID-19
  - Much of the data was collected prior to the mid-2010s, so is prior to the emergence of ride-hailing services and the sustained downturn in transit ridership

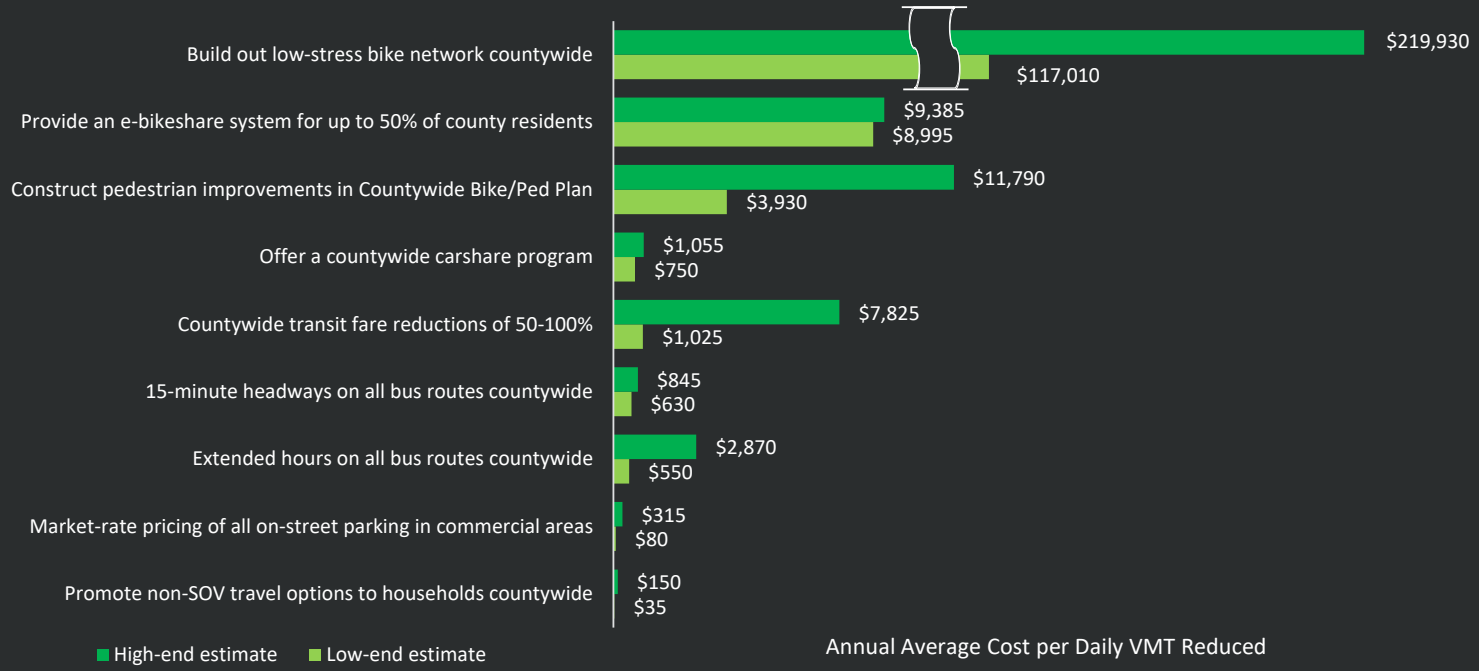
VMT MITIGATION COST EFFECTIVENESS

Estimating Costs of the VMT Strategies

- Cost estimates are presented as ranges
- Used data from prior implementations of similar strategies, to the extent available
- Used locally-specific data, to the extent available

VMT MITIGATION COST EFFECTIVENESS

Cost per Daily VMT Reduced



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VMT MITIGATION COST EFFECTIVENESS

Potential costs for typical developments

Residential Project

Description:	Approx 150 single-family units in suburban location
VMT Impact:	VMT per capita is 20% above threshold
On-site Mitigation:	Assume on-site TDM is required, will partially mitigate
Remaining Impact:	Approx 800 daily VMT
Cost to Mitigate:	$800,000 - $3.2 million (i.e., $1000-$4000 per daily VMT)

VMT MITIGATION COST EFFECTIVENESS

Potential costs for typical developments

Commercial/Industrial Project

Description:	Approx 500,000 sq ft warehouse/office in light industrial location
VMT Impact:	VMT per capita is 50% above threshold
On-site Mitigation:	Assume on-site TDM is required, will partially mitigate
Remaining Impact:	Approx 7,000 daily VMT
Cost to Mitigate:	$7 million - $28 million (i.e., $1000-$4000 per daily VMT)

VMT MITIGATION COST EFFECTIVENESS

Suggested Program Structure

Countywide Mitigation Program

- Administered by CCTA, with support from an advisory committee
- Lead agencies within Contra Costa can suggest VMT reduction strategies
- CCTA vets the strategies against the eligibility criteria, including effectiveness and readiness for implementation, and creates a final list
- Advisory committee would make recommendations about how to prioritize the funding
- CCTA would provide regular reporting about how the funds are used

VMT MITIGATION COST EFFECTIVENESS

Suggested Program Structure, continued

Countywide Mitigation Program

- Program sets a fee per daily VMT reduced, with consideration for amount that could be accommodated while maintaining financial viability
- Projects that have VMT impacts could pay the fee on the VMT they are unable to mitigate through on-site measures
- The program may be focused on partial mitigation of VMT impacts; claiming full mitigation could be challenging because of the uncertainties involved in which VMT reduction strategies will be funded and how effective they will be

Discussion

DISCUSSION

Questions

1. Which VMT mitigation strategies make the most sense to pursue, given the cost-effectiveness estimates? Are there specific strategies from your jurisdiction that you would like to suggest?
2. Are we missing anything?
3. What would be a reasonable cost to developers?

Next Steps

NEXT STEPS

Future PAC Meetings

December 2022

Review Draft Program

Early 2023

Review Final Program

Thank you!

CONTRA COSTA transportation authority

CCTA VMT Mitigation Framework: Project Advisory Committee Meeting #4

Meeting Notes

October 26, 2022
3:00 PM – 5:00 PM

LOCATION:
Zoom
Click here to join

PRESENTERS:
Matt Kelly, CCTA
Stephanie Hu, CCTA
Julie Morgan, Fehr & Peers
Ron Milam, Fehr & Peers
Sarah Peters, Fehr & Peers
Grace Chen, Fehr & Peers

Introduction

Welcome

- Today we will share an update of what we've been working on, will be asking for input on program options to explore further

Project Update

Costs and Effectiveness of VMT Mitigation Strategies

Projected Countywide VMT Growth above CEQA Threshold

- Sources: land development projects and roadway expansion projects

Questions and Comments

- Is the CEQA threshold on this chart 15 percent below countywide average?
  - *Response:* Yes. This shows how much of the VMT generated by new growth will be above the CEQA threshold (15% below countywide average)
- Could you talk about where these numbers come from? Was the NCST calculator used?
  - *Response:* This is from the regional travel demand model, using land use assumptions from Plan Bay Area. NCST calculator used to estimate induced VMT from roadway projects.
  - *Follow up:* My understanding is that NCST calculator is pretty broad and may overstate the impact at the county level. Has its output been compared to the model outputs?
    - *Response:* Yes, this is a little higher than what the CCTA model would estimate. The CCTA model has some blind spots when it comes to estimating long-term estimates of induced travel. Tough to judge, but NCST does come out a bit high when compared to observed data.
  - Does this include through trips?

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- *Response:* This includes only VMT from trips starting or ending in Contra Costa County.

Possible Mitigation Strategies

- Bike/ped network improvements
- Community-scale TDM
- Expansion/addition of transit services
- Land use strategies – coming out later

Questions and Comments

- I recall that affordable and infill housing seemed promising in earlier meetings. Are those included in the upcoming land use analysis?
  - *Response:* Yes.
- Were there no improvements that would make buses more reliable?
  - *Response:* Not explicitly, although roadway improvements may be needed to make transit run more frequently.

Potential VMT Reductions from Each Strategy

- Assumptions – based on available data
- Lots of uncertainty – best available evidence doesn't reflect the scale or circumstances of the proposed application (countywide, post-COVID-19, pre-late 2010's transit ridership declines)
- Therefore, apply a lot of caution when thinking about potential effectiveness

Questions and Comments

- Since the objective of SB 743 is related to GHG reduction, will a strategy related to increasing the share of EVs in the traffic mix be considered in this group of strategies? It can be supported by installing more EV chargers at strategic locations across the county.
  - *Response:* EV strategies were not considered. While SB 743 is intended to reduce GHG emissions, OPR set the thresholds in terms of VMT only.

Estimating Costs of the VMT Strategies

- Assumptions – local cost data used as much as possible
  - Bikeshare: relied on data from City of Richmond's recent re-launch of bikeshare
  - Transit service strategies – relied on agency profiles in National Transit Database
- Results shown in terms of cost per daily VMT reduced
  - Costs shown over a ten-year period, averaged to a single year, to better align

Questions and Comments

- Is it correct to interpret this as showing that bike network buildout is less cost-effective than other strategies?
  - *Response:* Yes, for a few reasons. First, the data available on VMT reductions from bike network buildout only applies to commute trips, so even though we know that people will make other kinds of trips (school, shopping, etc.), the available evidence doesn't support a

substantial reduction. There are also a lot of other benefits to bicycle networks beyond VMT reduction. Also, bicycle facilities can be quite expensive to build.

- My request is that you caveat this heavily in the report if it is published, because this could misrepresent the benefits of bicycle networks.
  - *Response:* We would have to put it in context of VMT mitigation and remember that this is a narrow lens. CCTA supports building out the bike network.
  - *Response:* Davis, CA for example has an excellent bike network, but also has very high VMT per capita. There are so many factors that go into VMT – and bike trips tend to be very short, so increasing them will not reduce VMT as much as longer-distance results (see,
- Appreciate the clarity around the limitation of the data and analysis. CAPCOA looks to be fairly crude regarding bike data when applied to Contra Costa County context, particularly with the BART access and off-road network available. This data was also pre-ebike. This should be validated for the local context.
- Is it possible to evaluate the cost-effectiveness of the bike network based on where it's located? And can there be an evaluation of feasibility similar to the evaluation of costs?
  - *Response:* For cost-effectiveness, local cost estimates for local projects would help us refine this estimate.
  - *Comment:* Bike routes of regional significance have been identified in the Contra Costa County.
- Some of these programs are operational funding, which we don't believe are eligible costs under the Mitigation Fee Act.
  - *Response:* If funding of transportation operations rose to the top, CCTA would be interested in sponsoring some sort of legislation that would allow for fee funding of this program.
  - *Response:* It's literally just one sentence in AB 1600 that would need to be changed; there may be some movement on that in the next legislative session.
- Is it possible to compare the cost-effectiveness of the land use strategies to these strategies?
  - *Response::* Yes.
- It seems like there's a lot of funding to build the bicycle network, and I'm wondering if this fee vehicle may not be the best suited to implementing that strategy. Returning to 15-minute headways, you need to look at operational improvements that could be done at little/no cost.
- Would reducing parking supply be a replacement for market-rate public parking?
  - *Reply:* Data is only available for housing parking reduction; generally, reducing parking supply tends to result in a mode shift. However, there's a risk of inducing more VMT by shifting driving trips to Uber/Lyft trips, which result in more VMT than driving oneself.

Potential costs for typical developments

- Weighted average cost (excluding bicycle facilities buildout): $1000-4000 per daily VMT reduced
- Residential example: 800 daily VMT above threshold, $800k-$3.2M for total development (150 SF units)
- Commercial example: 7,000 daily VMT above threshold, $7M-28M for total development (500 ksf warehouse/light industrial)

- Elsewhere in the state, developers have indicated that they would be open to an increase of up to 1% of total development costs.

Questions and Comments

- Bottom line for BIA members is that they would support a regional VMT fee program that is faster, more predictable, and no more expensive than the current approach. If it costs more, or adds time or uncertainty, it will not be supported. This is new, and there's a concern about this especially for suburban development outside of transit areas. A lot of our members are feeling very nervous about how this will turn out.
    - Point of comparison: Habitat Conservation Program collects a fee used to fund permits, etc. – this has been wildly successful, makes costs more predictable. I see this program as being potentially along those same lines if the payment of a fee allows development to move forward at the same or lower cost and with more certainty than they currently can.
    - *Response:* Note that if this kind of program does not exist, the amount of mitigation available to developers is reduced – resulting in an unavoidable impact that would require a full EIR and the associated time, cost, and uncertainty. The determination of feasibility can include cost, but that is dependent on the local jurisdiction's determination.
        - One approach would be to have the general plan include the CEQA analysis and adopt a statement of overriding considerations, allowing developments that comply with the GP to avoid EIR. City of Roseville has used this approach.
        - *Comment:* That would make this program mandatory, rather than voluntary. Also, the development community and perhaps a lot of elected officials would not support that does not fully mitigate impacts.
- We are heading to a tough decision about VMT – generally, when you are building in outlying areas, VMT will be higher. Infill building requires a concomitant policy approach (rezoning, etc.) – but we've been prioritizing sprawling development for decades now. Other nations have prioritized development that is close-in, which requires less infrastructure and has less impact on the environment.

Suggested Program Structure

- Administered by CCTA with advisory committee
- If program were to stand on its own, it would be focused on partial mitigation of VMT
- If program were used to supplement a city or countywide General Plan, it could be used to mitigate impacts identified in the GP, allowing development projects consistent with the GP to fully mitigate VMT impacts by paying the VMT mitigation fee

Discussion and Questions

- Can developing a Mobility Hub be one of the strategies? This is being looked at across the region.
    - *Response:* Would need to be more specific about what would be included in the mobility hub to allow us to evaluate their VMT effects.
    - *Response:* For a mobility hub to qualify as a VMT reduction strategy it must contain elements that reduce the cost, or increase the convenience, of using transit,

bicycle/scooter, and walking. Would need to change the ability to transfer, reduce travel time, and/or reduce cost.
    - *Response:* Mobility wallet concepts were initially about spreading the wealth to encourage travel for members of disadvantaged. Now there's a focus on VMT reduction.
- Currently, developers must track VMT mitigation effectiveness. Would this program track usage and VMT reduction effectiveness, or would the developer still have to track this?
    - *Response:* Historically, CEQA mitigations have not required ongoing monitoring.
- A lot of our members would be encouraged to use this program if they were not responsible for ongoing monitoring.
    - *Response:* We didn't do verification with LOS improvements. For whatever reason, people want to hold VMT to a higher bar. The emerging nature of VMT has led consultants to be more careful about our recommendations.
    - *Response::* The administrator could be responsible for the monitoring and tracking.
- E-car share program in pilot in Richmond: www.miocar.org. Antioch is working with Richmond Community Foundation to bring it to Antioch. Focus on Impacted Communities. Very low cost.
- This program could serve as sort of a streamlining mechanism if agencies fold this into their general plan. However, a project would need to be consistent with the General Plan to use this streamlining – is that right?
    - *Response:* Right, this would streamline approvals for projects that are consistent with the GP.
    - *Comment:* The vast majority of GPs in the Bay Area are outdated.
    - *Response:* There is an amazing amount of streamlining that GPs can provide, but jurisdictions vary substantially in how frequently they update them.
- That makes me wonder how this kind of program would respond to a local agency's update of the GP. Does a program like this get updated so it can appropriately respond to the changing land use context that it's serving?
    - *Response:* This type of program isn't necessarily determined by land use decisions.
    - *Response:* Similar programs (like a CIP) are updated to reflect cost changes every year; other programs may be updated every 5-10 years. Land use context (e.g., suburban vs. urban) also affects the effectiveness.
- What is being found in pilot programs around the state?
    - *Response:* Biggest effects come at a regional scale; many jurisdictions are waiting to see how pilots play out before launching their own.
- Will we get the presentation?
    - *Response:* Yes, Matt can distribute.
    - *Comment*: If you do share the slides, please share the context as well.
- Will the next meeting have the land use strategies? And will there be a fee associated with them? It would not make sense to attach a fee to an affordable housing overlay.
    - *Response*:: The first question would be, what additional funding could a program like this bring to the table to increase affordable housing supply. The second question would be, how much VMT reduction would this program provide, and how much credit could the program take?
    - *Comment:* Would like to see how this relates to the Growth Management Program.
- What are the next steps? Or are you getting to them after discussion?

- *Response:* We are planning to get together with this group twice more – once in early December and another early next year. We will be back in touch when we are ready to schedule the next meeting.

PAC Members Attending

- John Cunningham, Contra County
- Krute Singa, MTC/ABAG
- Saravana Suthanthira, City of Concord Transportation Program Manager
- Jody London, Contra Costa County Sustainability
- Melody Reebs, Contra Costa County Connection
- Lisa Vorderbrueggen, BIA Bay Area
- Jamar Stamps, Contra Costa County
- Juan Pablo Galván Martínez, Save Mount Diablo
- John Nemeth, WCCTAC
- Chris Kuzak, Caltrans HQ Sustainability
- Kristin Connelly, East Bay Leadership Council
- Jim Cunradi, AC Transit
- Mark Leong, Caltrans D4 Land Development & Review

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VMT Mitigation Framework for Contra Costa

Project Advisory Committee Meeting #5

January 26, 2023

Agenda

2:00-2:10 pm	**Introductions**
2:10-2:40 pm	**Project Update**
2:40-3:15 pm	**VMT Program Options**
3:15-3:50 pm	**Discussion and Feedback**
3:50-4:00 pm	**Next Steps**

Introductions

Project Update

Recap of Prior PAC Meetings

Discussed

- Program structure
- Program priorities
- Mitigation strategies
- Cost effectiveness

Priorities for Program

- Countywide program, led by CCTA
- Would fund strategies with demonstrated VMT reduction benefits
- Could be structured as a bank, exchange, or fee program
- Ideally would allow for full mitigation of VMT impacts for most projects
- Would have predictable, stable costs

Input from Development Community

- Met with developer representatives in December
- Discussion topics
  - Pro forma analysis conducted by economic consultants
  - Potential effect on cost of new development
  - Reaction to potential for a broad-scale VMT mitigation program

Input from Development Community

- Feedback received
  - Comments about some cost assumptions in pro forma
  - Interested in VMT mitigation strategies that directly benefit their customers, while also unsure that localized VMT mitigation will be effective
  - Concern about current market volatility (interest rates, continued uncertainties about customer preferences post-pandemic, regulatory changes)
  - Interest in VMT mitigation program if costs were reasonable and if participation resulted in streamlining of CEQA procedures

Possible Mitigation Strategies

- Bicycle and pedestrian network improvements
  - Build out countywide low-stress bicycle network
  - Close gaps in existing system (trails, sidewalks, crossings, bike lanes)
- TDM programs
  - Countywide eBike-share system
  - Mobility On Demand app pilot
- Transit service improvements
  - BRT projects
  - Increased frequencies, extended hours
- Land use strategies
  - Workforce housing subsidies (rental and purchase)

Mobility on Demand app

- App-based, real-time, multimodal trip planning
- Provides incentives for using low-VMT/low-GHG travel modes
- Encourages increased use of transit, shared mobility modes, carpooling
- Phase 1 included in Innovate 680; future expansion/improvements in Phase 2

Note on Cost Effectiveness Metric

- Metric that allows for reasonable comparison between strategies that have very different cost structures (some require large upfront investment and limited ongoing costs, others have small upfront investment but significant ongoing costs) and that affect different categories of VMT
- **Previous metric:** Total Cost over 10 years / Daily VMT reduced
- **Revised metric:** Total Cost over 10 years / Total VMT reduced over 10 years

Cost per Total VMT Reduced over 10 Years

Category	Estimated Cost per Total VMT Reduced over 10 years
VMT Reducing Infrastructure: bike and pedestrian networks	$60 - $225 (could be as high as $500)
Transit Strategies: Extend transit hours or network	$4 - $25 (could be as high as $130)
Transit Strategies: BRT	$1 - $4
Transit strategies: Increase frequencies	$0.25 - $3
Housing Strategies: subsidies for workforce housing	$1 - $2
TDM Programs: MOD app, bikeshare, carshare	$0.10 - $3
Pricing Strategies: parking pricing, transit fare reductions	Up to $0.50

Strategy implementation challenges

Timing of funds compared to timing of implementation

- *Some strategies (infrastructure, new transit service) require substantial amounts of upfront investment to become fully functional and begin to realize VMT reductions.*
- *A mitigation program (especially if voluntary) will create unpredictable and possibly relatively small funding streams, so may take a long time to generate enough money to implement strategies with high upfront costs.*

Need for public subsidy/investment on untested strategies to establish effectiveness and best practices

- *Emerging strategies such as workforce housing subsidies are very interesting, but lack any quantitative data about effects on VMT*

Program Option

Countywide Pilot Program

Structure

- Administered by CCTA, with support from an advisory committee
- Optional participation by lead agencies within Contra Costa County

Implementation

- Fund implementation of the Mobility on Demand (MOD) app to provide streamlined trip planning and payment for non-SOV travel and incentives for shifting from SOV to non-SOV modes
- CCTA to provide regular reporting about funds collected and expended, metrics about VMT reductions and other effects

Countywide Pilot Program

Mobility on Demand App

- Estimated cost: $0.10 - $0.35 per VMT reduced over 10 years
- Uncertainty in cost effectiveness due to innovative nature of the MOD app
- In-app data collection and performance monitoring would refine this estimate over time
- If MOD proves to be effective, could use demonstrated VMT reductions and cost data as the basis for a future fee program

Cost per Total VMT Reduced over 10 Years

Category	Estimated Cost per Total VMT Reduced over 10 years
VMT Reducing Infrastructure: bike and pedestrian networks	$60 - $225 (could be as high as $500)
Transit Strategies: Extend transit hours or network	$4 - $25 (could be as high as $130)
Transit Strategies: BRT	$1 - $4
Transit strategies: Increase frequencies	$0.25 - $3
Housing Strategies: subsidies for workforce housing	$1 - $2
TDM Programs: MOD app, bikeshare, carshare	$0.10 - $3
Pricing Strategies: parking pricing, transit fare reductions	Up to $0.50

Potential costs for a typical development

Residential Project

Description:	150 single-family units in suburban location
VMT Impact:	VMT per capita is 20% above threshold
On-site Mitigation:	Assume on-site TDM is required, will partially mitigate
Remaining Impact:	2,950,000 total VMT over 10-year period
Cost to Mitigate:	$295,000 total, or $2,000 per house

Potential costs for a typical development

Commercial/Industrial Project

Description:	500,000 sq ft warehouse/office in light industrial location
VMT Impact:	VMT per capita is 50% above threshold
On-site Mitigation:	Assume on-site TDM is required, will partially mitigate
Remaining Impact:	25.8 million total VMT over 10-year period
Cost to Mitigate:	$2.58 million, or $5 per square foot

Discussion

Questions

1. What questions do you have about the potential for a MoD-focused mitigation program?
2. Does the program seem reasonable in cost and implementation?
3. Would your agency be interested in participating in such a program led by CCTA?

Next Steps

Draft Report to be reviewed by CCTA staff

Report will be presented to CCTA Planning Committee and Board

Thank you!

CCTA VMT Mitigation Framework: Stakeholder Advisory Meeting #5

Meeting Notes

January 26, 2023
2:00 PM – 4:00 PM

LOCATION:
Zoom
Click here to join

PRESENTERS:
Matt Kelly, CCTA
Stephanie Hu, CCTA
John Hoang, CCTA
Julie Morgan, Fehr & Peers
Ron Milam, Fehr & Peers
Bruce Griesenbeck, Fehr & Peers
Sarah Peters, Fehr & Peers

Introduction

Welcome

- Today we will share an update on mitigation cost effectiveness and share a potential pilot program to test a countywide VMT mitigation program

Project Update

Progress to date

Recap of prior meetings

- Input from Development Community
  - Interested in strategies that directly benefit customers
  - Concern about market volatility and regulatory changes
  - Interest in program if costs were reasonable and participation resulted in CEQA streamlining
  - Concern about ongoing monitoring requirements - who is responsible for providing ongoing mitigation once original developer/CEQA project lead has moved on?

Mitigation strategies

- MOD app
- Cost effectiveness
  - Updated metric - total 10 year cost per total vmt reduced over 10 years
  - Broad range of cost effectiveness
- Implementation challenges
  - Timing of funds vs. funding of implementation
  - Need for investment in untested strategies to establish effectiveness and best practices

Comments/questions

- What about denser/increased development in PDA/transit priority areas? Not seeing a lot of action to rezone for density around BART stations in Contra Costa County. This aligns with MTC's transit-oriented metrics for investment.
    - *Response:* We assumed that many jurisdictions would already be making changes to densify those areas. This could be more of a comment for local agencies, who have that zoning authority. Are you thinking that the funds generated by this program would be used to provide grants to help local agencies conduct density-forward zoning updates that support transit and other [low-VMT] modes of travel?
    - Contra Costa County's General Plan update is looking at zoning and how we can increase access to transit, with a focus on the two BART stations that are within County's jurisdiction (Pleasant Hill and BayPoint)
- Was housing density addressed in previous meetings?
    - *Response:* yes, per CAPCOA
- From a mitigation standpoint, how could you use funds to support increased density? The workforce housing subsidy makes sense since it's a direct subsidy. Would the mitigation action be something like funding affordable housing within a TOD?
    - *Response:* Potentially. We did review what it would take to directly incentivize/subsidize affordable housing production - takeaway was that it was highly uncertain, expensive, and hard for a local agency to implement. Workforce housing provides a more certain reduction and a more direct role for cities.
- Developers brought up the question of streamlining. Would another possible VMT strategy be to help cities streamline their development review process? Would that be a strategy to get [denser, lower VMT-generating] housing built sooner rather than later?
    - *Response:* Interesting possibility, but the VMT connection would be yet more tenuous.
- Challenge is developing the nexus and quantifying the benefits of mitigation. This could be a potential future action. Challenging for cities as well since density is not fully within their control.
- Under the possible mitigation strategies - is this the complete list or are these strategies highlighted and there are others considered?
    - *Response:* These strategies are highlighted as examples - we reviewed a broad range of strategies, including specific projects drawn from in capital improvement plans.

Proposed Pilot Program

Suggested program structure and implementation

- Countywide Pilot program - initial funding of MOD app, allowing for research as implementation rolls out
- Cost per development
    - $2,000 per housing unit (assuming low end of cost range)
    - Economic analysis indicates that this would cost less than 1/2of 1% of the cost to develop
    - $5 per square foot assuming development of 500 ksf warehouse

Outstanding questions

- What does the app do?
    - *Response:* It's an app that amalgamates all transportation information, markets and provides incentives for using low-VMT modes.
- I'm dubious about the effectiveness of this strategy.
- MOD app is cool, new, exciting: the costs are just for the use of the app. How do you decide if the app is the right way to go -if you don't have the structure/services in place that the app enables?
    - *Response:* The cost effectiveness is based on just the app for now, but there would be additional costs to provide additional services.
- Developers would pay a fee contributing to the use of this app. Developers are already providing incentives on top of this app. If this is just an informational app, the question is what the developers would be getting beyond what they're already providing.
    - *Response:* Up to lead agencies to determine how participation in this program would relate to other requirements.
- Curious about how you developed the cost figures for these estimates.
    - *Response:* Report will provide more detail on how these calculations were developed. Note that these are cost effectiveness estimates, not cost estimates. Part of the challenge for bike/ped infrastructure is that infrastructure alone has limited effect on mode shift and that walk/bike trips replace short car trips.
- Do these potential costs assume that 100 percent of the VMT reductions would be through the regional fee?
    - *Response:* These potential costs assume that some onsite TDM is required by the local jurisdiction and would partially mitigate the project's VMT impacts.
- When transit is evaluated, estimates often assume frequencies that are not supported by existing densities and street networks. It's hard to imagine that BRT would be very successful in Contra Costa County without significant revisiting land uses and street networks.
- I'm a bit curious about the methodology underneath these numbers. Is it fair to compare the app to transit, given that the app depends on transit for its effectiveness?
    - *Response:* Good question. At this point, we're assuming that the app will push people to existing transit services. If it is successful, there will likely be a need to expand services, and there would be costs associated with that as well.

Discussion and Feedback

- This still seems pretty speculative to me. I'm not seeing enough action that would actually get people out of their cars.
- I agree. I'd be curious about the methodology behind this conclusion; seems like a pretty narrow basis for the basis for the entire program.
    - *Response:* Part of the thinking is that these kinds of programs are very new; this would be a method by which CCTA would learn more about what is effective at encouraging mode shift and would provide more locally-specific data on effectiveness.

    - *Response:* Regarding the technical methodology: in some cases, we are relying on research from CAPCOA, which are broad averages from multiple studies from across the US and California. This is the best available information but is not specific to CCTA.
    - *Response:* What kind of evidence would you need to see to have confidence in this type of strategy? To the extent that this report can specify what kind of additional data or information is needed, that would be helpful.
- I agree. I'm skeptical of MoD, it's quite untested and hasn't really been transformative in places where it's been implemented. I'd like to see evidence of where MoD has actually shifted modes and what are the conditions where it's successful (urban, suburban, etc.).
- It would be helpful to see the full range of strategies to see how this mitigation program would be rounded out.
    - *Response:* yes, we can provide that.
- Consider integrating unfunded components of regional transit pass programs.
- Transit providers currently have on-demand transit pilot. Interested in participating.
- How have studies teased out the effectiveness of these kinds of apps beyond simply providing the service?
    - *Response:* The research on presenting information to people about their travel choices has a demonstrated behavioral effect before and after the information is presented.
    - *Response:* Just a reminder that this is a list of actions that an incoming project could contribute to as a way to mitigate its impacts. Dense development near transit is generally exempt from CEQA analysis under SB 743 because they are inherently low-VMT.

Next Steps

- When can we expect to see the draft report?
    - *Response:* The report will be out by the end of April.
- Will you be presenting this to local agency leaders?
    - *Response:* We are presenting this to our board in March or April.
- How will we know when the report is ready to be reviewed? Will we be providing comments on a draft document, or will we receive the document when its
    - *Response:* We will share this report when it's ready to go to the board. We will incorporate any comments you have now based on the presentation into the report.
    - *Response:* Thank you for your time and input. Please send any additional comments to Matt or to Julie.

PAC Members Attending

- Steve Ponte, Chief Operating Officer, Tri Delta Transit (outgoing)
- Chris Kuzak, Caltrans HQ Sustainability
- Mark Leong, Caltrans LDR-D4
- Jody London, Sustainability Coordinator, Contra Costa County
- Toan Tran, Chief Operating Officer, Tri Delta Transit (incoming)
- Andrew Dillard, City of Danville
- Melody Reebs, agency
- John Cunningham, Contra Costa County
- Jim Cunradi, LRP manager at AC Transit
- Kamala Parks, Principal Station Planner, BART
- Krute Singa, MTC Planning Section
- Lisa Vorderbrueggen, BIA Bay Area
- Jamar Stamps, Contra Costa County
- John Nemeth, Executive Director, WCCTAC
- Smadar Boardman, Traffic Engineer, City of Walnut Creek
- Juan Pablo Galván Martínez, Senior Land Use Manager, Save Mount Diablo
- Saravana Suthanthira, City of Concord
- Nathan Landau, Senior Transportation Planner, AC Transit

Appendix D – Presentation for Small Group Meeting with Residential Developers

SINGLE FAMILY DEVELOPMENT COSTS/ DYNAMICS

Contra Costa County Transportation Authority

VMT Mitigation Program Study

December 9, 2022

Economic & Planning Systems, Inc.
The Economics of Land Use

1330 Broadway, Suite 450 ▪ Oakland, CA 94612
510.841.9190 ▪ www.epsys.com

INTRODUCTION

- Understand development costs and real estate dynamics
- Important to have baseline as VMT Mitigation Program options explored
- For Single Family Detached development, considering illustrative Single Family Detached Prototype in City of Antioch
- EPS developed Planning-Level Estimates of Development Costs
- Interested in feedback on assumptions as well as dynamic market for housing in Contra Costa County

ACTIVE SUBDIVISIONS IN ANTIOCH

Project Name	Total Planned Units	Home Size Range (sq ft)	Base Price Range	Base Price per sq ft Range
Cielo at Sand Creek	162	2,091 - 2,833	$810,990 - $924,990	$326.51 - $387.85
Crest at Parkridge	300	2,078 - 3,553	$751,000 - $992,000	$279.20 - $361.41
Luca	179	1,448 - 2,738	$669,000 - $795,000	$290.36 - $462.02
Luna	102	2,035 - 3,183	$636,880 - $800,880	$251.61 - $312.96
Oriana	115	2,328 - 3,637	$686,880 - $890,880	$244.95 - $295.05
The Hills at Park Ridge	118	1,948 - 2,820	$695,900 - $834,900	$296.06 - $357.24

ILLUSTRATIVE PROTOTYPE

- **Development Program**
  - 2-story Single Family Detached Home
  - 2,500 sq ft of Living Space and 400 sq ft of Garage

- **Information Sources**
  - Marshall & Swift
  - The Gregory Group
  - City of Antioch
  - CoStar/ Redfin
  - Prior EPS Analyses

ILLUSTRATIVE DEVELOPMENT COSTS

Single Family 100-Unit Subdivision Prototype -- Total Development Costs

DEVELOPMENT PROGRAM ASSUMPTIONS			Total	Per Unit	% of Value
15-Acre Site (Gross Square Feet)			653,400	6,534	N/A
Residential Units			100	N/A	N/A
Gross Building Area (Square Feet)	2,900	SF per Unit	290,000	2,900	N/A
Net Area (Square Feet)	2,500	SF per Unit	250,000	2,500	N/A
Parking Spaces			*Integrated Garage*		
DEVELOPMENT COSTS, LAND VALUES, AND RETURN					
LAND ACQUISITION	$400,000	per site acre	$6,000,000	$60,000	8%
DIRECT COSTS					
Basic Site Work/ Lot Improvements	$45,000	Per Lot	$4,500,000	$45,000	6%
Direct Construction Cost	$140	Cost/SF (GBA)	$40,600,000	$406,000	55%
Direct Cost Total			$45,100,000	$451,000	61%
INDIRECT COSTS					
Architecture and Engineering / Other Consultants	6.0%	of Direct Cost	$2,706,000	$27,060	4%
Taxes and Insurance	2.0%	of Direct Cost	$902,000	$9,020	1%
Financing	4.0%	of Direct Cost	$1,804,000	$18,040	2%
Sales and Marketing	3.0%	of Direct Cost	$1,353,000	$13,530	2%
Developer Fee	4.0%	of Direct Cost	$1,804,000	$18,040	2%
Permits and Fees	$62,645	per Unit	$6,264,469	$62,645	8%
Total Indirect Costs			$14,833,469	$148,335	20%
TOTAL LAND/ DEVELOPMENT COSTS	**$227**	**per square foot (GBA)**	**$65,933,469**	**$659,335**	**89%**
DEVELOPER RETURN REQUIREMENT	**12.5%**	of Total Development Costs	$8,241,684	$82,417	11%
TOTAL COST/ RETURN	**$256**	per gross square foot	**$74,175,153**	**$741,752**	**100%**
	$297	per net square foot			

Sources: City of Antioch; Costar; Marshall & Swift; The Gregory Group; EPS

FEEDBACK

- General feedback on Cost Estimates
- Feedback on Specific Assumptions:
  - Any missing cost categories?
  - Construction Cost per Square Foot
  - Land Acquisition Cost per Acre
  - Permits and Fees per Unit
- Broader Market Context/ Prospects: pandemic, interest rates, other

Appendix E – Evaluation Criteria Memorandum

FEHR PEERS

Memorandum

Date: August 11, 2022

To: Matt Kelly and Stephanie Hu, CCTA

From: Julie Morgan and Sarah Peters

Subject: VMT Mitigation Framework: Evaluation Criteria

WC21-3806

The Contra Costa Transportation Authority (CCTA) is developing a regional framework to mitigate Vehicle Miles Traveled (VMT) impacts associated with new development and transportation infrastructure. The resulting VMT Mitigation Program will support CCTA member jurisdictions as they make land use and transportation decisions that reduce reliance on single-occupant vehicles. To complete this work, CCTA has engaged a consultant team led by Fehr & Peers to evaluate VMT mitigation program alternatives and to develop recommendations reflecting the priorities of project stakeholders.

To assess the program alternatives, the project team has developed and refined a set of evaluation criteria. Defined evaluation criteria enable project sponsors, stakeholders, and team members to develop a clear understanding of the benefits and drawbacks of different program alternatives. Aligning criteria with the goals and values of project stakeholders ensures that programs that meet the criteria will advance those goals and values.

This memorandum describes the process used to develop these criteria, including outreach to and feedback received from project stakeholders. The memorandum concludes with a set of recommended evaluation criteria, which will be used to assess different program alternatives.

Criteria development process

The consultant team developed an initial list of evaluation criteria, drawing on experience with similar projects and on priorities expressed by CCTA staff and members of the Project Advisory Committee (PAC). This initial list was refined after review by CCTA staff, and then shared with members of the PAC.

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www.fehrandpeers.com

The initial list identified draft criteria under six categories:

- **Legal Foundation:** Does the program alternative meet statutory requirements established under CEQA?
- **Agency Oversight & Funding:** Which public agency would manage the program, and how would that administration be funded?
- **Geography & Scale:** Could the program be applied at multiple geographic scales? How would the location of VMT impacts relate to the location of impact mitigations?
- **Applicability:** To what types of projects would the program apply, and what types of mitigations would it support? Would the program promote equitable outcomes for members of underserved communities?
- **Data Analysis & Monitoring:** Would the program establish a standardized approach to evaluating VMT impacts and reductions, and does it have clearly defined methods for ongoing data collection and monitoring?
- **Program Risk Reduction:** Is the program clear and easy to understand, and does it result in predictable and affordable results?

To gather focused input from the PAC, the project team developed a survey that asked questions about a VMT mitigation program's purpose, priorities, and structure. Seventeen responses were collected, representing about two-thirds of the PAC membership. Additional input from PAC members was collected during a two-hour Zoom meeting on November 29, 2021.

Feedback on draft criteria

PAC members provided feedback on nearly all draft criteria. They reached broad consensus on a few issues – program geography, desired CEQA outcomes, and program stability – but shared divergent opinions on other issues, including the role that equity should play in evaluating program alternatives and which types of mitigation strategies should be funded.

Areas of Agreement

PAC members agreed on several issues:

- **Program funds should be invested countywide** and should not be restricted to the communities in which impacts are identified. A countywide program would be more effective than a locally restricted program, and the program should prioritize funding mitigations that most effectively reduce VMT.
- **The program should fully mitigate VMT impacts on most projects**, allowing lead agencies to make findings of less-than-significant impacts under CEQA.
- **The program should offer predictable and stable costs** to provide certainty for project applicants when determining project mitigation costs.

Mixed Responses

PAC members diverged on a few issues:

- **Should the program focus on funding only transportation-related mitigation strategies or should it encompass a broader spectrum of strategies?** Some PAC members expressed an interest in funding a broad range of strategies, with a particular interest in using mitigation funds to support the construction of affordable housing. Other members were concerned that funding too broad a range of strategies could make the program less effective and overly complex.
- **Should the program apply an equity lens when making investment decisions?** Some PAC members felt that the VMT mitigation program should prioritize actions that would address historic disinvestment and environmental justice issues. Other members felt that the program's highest priority should be to achieve the greatest VMT reductions in the most cost-effective way.

Proposed Evaluation Criteria

Based on feedback received from the PAC, the evaluation criteria were revised as shown in **Table 1.**

Table 1: Proposed Evaluation Criteria

Criteria/Metric	Description
Legal Foundation	
CEQA Requirements	Does the program alternative meet statutory requirements established under CEQA?
Agency Oversight & Funding	
Administering Agency	Has a public agency been identified to administer the program?
	Does that public agency currently have authority to implement the program? If not, would leadership be willing to acquire that authority, and is there a clear path to do so?
Transparency and Accountability	Does the program have transparency and accountability measures built into its design?
Dedicated Funding Source	Is the program structured to allow the administrator to recoup administration costs?
Geography & Scale	
Scalability	Can the program be scaled up from a smaller to larger geographic area as additional jurisdictions express interest in participation?

Table 1: Proposed Evaluation Criteria

Criteria/Metric	Description
Geography	Would the program fund mitigations countywide?
Applicability	
Flexibility	Is the program able to mitigate the impacts of both land development and transportation infrastructure projects?
	Would the program result in less-than-significant impacts for most projects?
	Does the program provide flexibility in the choice of mitigation actions, in terms of costs, location, co-benefits, and other factors??
Coordination	Does the program support mitigation actions that are cohesive and well-coordinated, regardless of jurisdictional boundaries?
Equity	Does the program include equity factors, such as in the selection of mitigation actions and/or in distribution of funds?
Data Analysis & Monitoring	
Standardized Analysis	Does the program establish a standardized approach to evaluating VMT impacts and VMT reductions?
Program Monitoring	Does the program have clearly defined methods for ongoing data collection and monitoring to evaluate its long-term success in reducing VMT?
Program Risk Reduction	
Program Legibility	Is the program intelligible and intuitive to public agency staff, developers, advocates, and other concerned stakeholders?
Cost Certainty	Does the program offer certainty in costs to project applicants?
	Does the program offer certainty in revenue to ensure mitigation actions can be implemented?
	Does the program result in mitigation costs that are financially viable for project applicants?
Cost of Mitigations	Could the cost of mitigations achieved through the program be accommodated without compromising the viability of new housing development?

Source: Fehr & Peers, 2022.

Next Steps

The draft evaluation criteria will be used to narrow down program options and to evaluate how well those options meet priorities identified by PAC members. Program alternatives will be presented to PAC members at upcoming meetings.

Appendix F – White Papers on Land Use Strategies

CONCEPT: Going from "Drive Until You Qualify" to "You Don't Have to Drive—You're Qualified!" VMT Mitigation by Reducing Barriers to Living in Low VMT Neighborhoods

The higher cost of housing is one factor that reduces the opportunities for homeowners and renters to reside in highly accessible, centrally located neighborhoods. The catchphrase "drive until you qualify" is a shorthand for the dynamic of a prospective homeowner or renter looking for a residence close to work or school, failing to qualify for financing, and taking the search for housing further and further out. This dynamic forces workers to commute longer distances. However, it also may force other members of the household to live in less accessible, auto-dominated locations where driving is required for nearly every household activity. Some see this dynamic with an equity lens, too—lower wage workers and lower income households are more likely to be forced out of the higher cost residential areas.

This concept for a VMT mitigation program focuses on reducing the housing cost differential between highly accessible neighborhoods, where a low VMT lifestyle is easier to establish and maintain, and low-accessibility areas on the fringe of a region, where daily activities generate more VMT. One part of the program would identify candidates. An ideal candidate would:

- Currently work in Contra Costa County, and reside well outside the County, in a low-accessibility/high VMT area;
- Prefer to live in a high-accessibility/low VMT area within the County, but unable to afford a suitable residence;
- Are willing to commit to a minimum residence term in the low VMT area, and commit to doing periodic surveys to monitor program (not individual) travel; andHave employment in the County that is likely to continue through the minimum residence term mentioned above (e.g. public employees, or other employees with long tenure).

This Housing Relocation-Subsidy Program (HRSP) would require the CCTA to fund grants, zero-interest loans, or monthly subsidies to offset the housing cost differential for the ideal candidates described above. The program would require CCTA or a contractor to administer the program (recruiting and screening candidates for the grants or subsidies, monitoring to ensure that households receiving grants or subsidies continue to reside in a high-accessibility/low-VMT area, and to deal with households that need to transition in or out of the program).

The VMT mitigation would come from tallying the reduction in VMT generated by the residents of a households in a HRSP-enabled location in a high-accessibility/low-VMT area, compared to the VMT that the households generated in low-accessibility/high VMT areas. The reduction could be calculated in a number of different ways:

- The most rigorous would be based on ACTUAL travel by households relocating from a low-accessibliity/high VMT areas, and similar surveys of the relocated households in the high-accessibility/low VMT areas. This would limit the program to households willing to relocate from one area to another.
- Another approach would be to base the VMT reduction calculation on the AVERAGE RATES for households in the low-accessibility/high VMT areas and high accessibility/low VMT areas. This approach would still be limited to households willing to relocate, but the survey and monitoring of the program would be far less intensive. Candidates for calculation of average rates are:

reliable travel model estimates (e.g. MPO's published rates); estimates from big data sources like Streetlight or Replica; or rates based on household travel surveys, and keyed to observable land use and demographic characteristics of the candidate program participants.

- In all cases, VMT reductions would come from not just one day or one year, but for the full term of the expected relocation of the households. Most of the residential subsidy programs in use currently have some minimum term residents receiving the subsidies. HRSP should have a relatively long minimum term, like 5 years or more—but the number of years of likely benefit should extend beyond that minimum term, presuming that some households will remain after the minimum term is expired.

Although the impetus and main goal of this program is facilitating a long-term reduction in household-generated VMT, to offset VMT increases generated by highway capacity projects, other goals could be served by this program as well:

- Because more low-wage workers and lower-income households are priced out of higher cost housing in high-accessibility/low-VMT neighborhoods, it is likely that more of these lower-income households will be ideal candidates for grants, and could increase access to housing for those households, and increase income diversity in those areas.
- Most current residential subsidy programs already in use are motivated by workforce concerns—basically, wanting to help employees of a large organization to find suitable housing closer to their worksite. This program, if targeted to workers in Contra Costa County, will have a similar impact.

Establishing a program would require several significant findings and determinations.

- Identifying high-accessibility/low-VMT areas and low-accessibility/high-VMT areas should be based on the best available data on household-generated VMT and land use. Travel models, household travel surveys, and regional GIS datasets are all candidates for doing this. Having sources for area identification that have some level of consistency with the sources of VMT impacts for transportation projects is desirable, at least. See Figures 1, 2 and 3 for examples of VMT per capita estimates for Contra Costa County.
- An analysis of housing costs in the different areas needs to be prepared, to establish what the grants or subsidies need to be in order to stimulate the household relocations that drive this program. Some level of housing market analysis should be performed on a sample of housing in both high-accessibility/low-VMT areas, and low-accessibility/high-VMT areas. Initial data on housing costs is provided below.
- Finally, the logic of this program would require that to truly reduce household-generated VMT over the longer term, the program would result in a shift or acceleration of housing production in high-accessibility/low-VMT areas. If it doesn't do this, the program could reduce VMT for subsidized households, but those reductions would simply be offset by other households backfilling the dwellings in low-accessibility/high VMT areas. For this reason, the program would work best if Contra Costa County or the jurisdictions within had explicit infill housing priority programs that mesh with the goals of the VMT mitigation program.

Examples of Similar Programs

Many examples of "employer-assisted housing" programs exist, in which a specific employer offers some form of subsidy or other assistance to offset high housing costs that may be a dis-incentive to a new or prospective hire relocating to the employer. Many also provide assistance to existing employees, to facilitate relocating residence closer to the employer, or within a jurisdiction in the case of a public employer like a city or county. Housing assistance is offered by many universities (e.g. Stanford, most of the UC's), and some cities or counties. A few examples of documented programs are provided below.

- Detroit, Michigan—this program offered housing subsidies primarily as a strategy to develop neighborhoods within Detroit. The program offered subsidies for both renters and buyers, and 2000 households used the subsidies to move into targeted neighborhoods. What happens when you give people cash to move to Detroit - DETOUR (detourdetroiter.com)
- University of Chicago—this program offered interest-free loans to U of C employees, to purchase housing in targeted neighborhoods near the university. Subsidies have been provided to 228 households. Employer-Assisted Housing - Metropolitan Planning Council (metroplanning.org)
- Aurora Healthcare, Milwaukee, Wisconsin—Aurora sought to facilitate "walk to work" potential for their workforce, and used interest free loans to households to assist in finding housing in targeted neighborhoods near their clinics. A unique and in-depth case study of the 208 participants in the program is available. Microsoft Word - EAH Value Proposition_finalformatted.doc (hawaiihousingalliance.org)

The HRSP program for CCTA would be a variant of these existing programs. One variantion would be, the existing programs are run by individual employers, targeting their own employees or prospective employees. The HRSP described here would target employees working within Contra Costa County, but would not be limited to one employer. A second difference would be the inclusion of VMT reduction as an explicit program goal would require some level of monitoring that existing programs do not have.

Cost Effectiveness

For purposes of estimating cost effectiveness, the following assumptions are made about the basic form of a residential subsidy program:

1) The program would target workers in Contra Costa County, who currently reside in low accessibility/high VMT locations outside the county. See the attached Table 1 (Worker Residence to Workplace Flows).
2) The program would provide subsidies to allow worker households to relocate to preferred locations in high accessibility/low VMT areas within Contra Costa County. See attached Table 2 for some VMT statistics for several potential residential relocation "pairings" for program participants.
3) Subsidies would be sized based on the housing cost differential between the current low accessibility/high VMT residential location, and a targeted high accessibility/low VMT location within Contra Costa County. (Note: housing research needs to be completed to assess the cost

differential for some of the potential relocation "pairings"). See Tables 3 and 4 for an initial summary of housing cost differences for rented and owned units. For purposes of this analysis, rental subsidy was assumed to range from $300 to $600 per month, and down payment assistance was assumed to range between $75,000 and $100,000. The assumed ranges for owned units are unlikely to fully make up housing cost differences shown on Tables 3 and 4.

4) Subsidies for owned homes would be provided as a forgiveable loan to the worker, to eliminate the housing cost difference and allow the worker household to relocate. The loan would be forgiven entirely if the worker met conditions on term of residence in the new location, and on participation in annual travel surveys to monitor program performance. Subsidies for rental homes would be provided for each month a worker resided in the new rental home or apartment, and participated in annual travel surveys. (Note: see Tables 5a and 5b shows scenarios showing sensitivity to some of the key factors).

Major factors will affect the cost effectiveness of a residential subsidy program targeted at reducing VMT:

1) VMT differential between the current low accessibility/high VMT locations of targeted residents of a subsidy program, and the future residential location in a high accessibility/low VMT location. All other things being equal, the cost effectiveness of the program would be highest if residents are moving from a very high VMT location, and to a very low VMT location within Contra Costa County.
2) Duration of program participation. Especially for owned homes, a one time subsidy (i.e. the foregivable loan) could generate many years of VMT reduction in the new residence location.

Table 1

DRAFT Residence to Workplace Flows, MTC Region and Surrounding Counties

Based on 2015 ACS 5-year Sample Data

	Working in...																	
Residing in...	Alam.	C.Costa	Marin	Napa	S.Fran.	S.Mateo	S.Clara	S.Cruz	Sol.	Son.	S.Joaqin	Stanis.	Yolo	Sacram.	Mont.	S.Benito	All Other	Total Workers
Alameda	462,270	41,010	4,823	304	92,246	35,263	70,878	410	1,670	962	2,500	619	304	899	291	114	4,569	719,132
Contra Costa	100,160	283,631	8,564	1,653	58,089	11,201	14,023	219	7,534	968	2,271	389	788	1,687	330	11	4,239	495,757
Marin	4,052	1,957	81,726	476	27,614	2,485	1,097	45	472	4,387	11	37	29	38	-	-	1,186	125,612
Napa	1,047	1,873	1,312	51,743	1,788	525	460	10	4,422	2,423	87	17	189	370	8	-	727	67,001
San Francisco	21,561	4,116	6,933	321	353,484	48,768	27,100	389	506	990	177	77	162	403	-	-	3,363	468,350
San Mateo	12,423	1,916	1,004	114	81,943	218,287	58,936	475	302	149	47	31	35	225	72	25	2,518	378,502
Santa Clara	37,913	**3,310**	323	90	14,241	45,818	774,477	4,249	267	389	338	420	108	299	2,727	1,333	6,408	892,710
Santa Cruz	862	156	30	34	714	1,242	17,458	99,105	68	55	17	75	20	88	6,583	700	938	128,145
Solano	10,315	19,504	5,272	11,850	8,974	2,616	1,496	-	109,059	2,780	538	32	5,058	5,287	38	-	2,052	184,871
Sonoma	2,271	1,155	15,863	4,434	6,811	1,233	1,095	32	1,009	197,589	67	27	190	260	16	27	2,938	235,017
																		3,695,097
San Joaquin	26,485	**5,861**	156	325	2,023	2,040	10,075	99	1,051	197								
Stanislaus	7,159	1,571	75	49	753	1,021	4,639	190	196	28								
Yolo	681	611	96	300	526	220	293	11	4,979	64								
Sacramento	2,558	1,992	550	308	2,212	940	1,801	56	5,850	608								
Monterey	404	147	24	-	156	461	5,200	9,640	6	23								
San Benito	185	74	12	-	83	114	9,030	1,038	1	52								
All Other Places	9,395	3,818	1,479	2,472	9,442	8,158	17,199	1,171	3,249	3,865								
Total Workplaces	699,741	372,702	128,242	74,473	661,099	380,392	1,015,257	117,139	140,641	215,529								

Workers with jobs in Contra Costa County
Workers residing in Contra Costa County

Table 2
DRAFT Potential VMT Savings for Residential Subsidy Program

Current residence & Daily VMT per Capita		Relocated residence & Daily VMT per Capita		VMT Difference
SJC: Tracy (Hwy 205 / West Byron Rd)	30	Pleasant Hill (680 / Monument / Walnut Creek)	15	-49%
Morgan Hill (SW Quad US-101 / Cochrane Rd)	29	Central El Cerrito (NE Quad of San Pablo Ave / Moeser Rd)	16	-46%

Source: Fehr & Peers. Based on VMT per capita estimates from Streetlight data.

Table 3. Comparison of Selected Rents

County	City	Average Sq Ft [1]	Average Rent [2]	Average Rent per Sq Ft
Contra Costa	Alamo	974	$2,834	$2.91
	El Cerrito	843	$2,488	$2.95
	Pleasant Hill	800	$2,461	$3.08
	Martinez	760	$2,295	$3.02
	Pittsburg	870	$2,124	$2.44
San Joaquin	Stockton	803	$1,573	$1.96
	Tracy	916	$2,497	$2.73
Stanislaus	Modesto	808	$1,626	$2.01
Solano	Vallejo	789	$1,802	$2.28
Santa Clara	Milpitas	841	$3,329	$3.96
	Morgan Hill	946	$2,917	$3.08
Alameda	Livermore	785	$2,542	$3.24

[1] Source: Costar

[2] Average of 2-bedroom rents reported in Costar, Zillow, and Rent.com

Table 4. Comparison of Selected Single Family Home Sales

		Redfin, 3-bedroom houses sold last 1 year			
County	City	Number of Records	Average Sq Ft	Average Sale Price	Average Price per Sq Ft
Contra Costa	Alamo	24	2,165	$1,817,500	$895
	El Cerrito	116	1,488	$1,275,000	$842
	Pleasant Hill	197	1,408	$1,000,000	$721
	Martinez	247	1,490	$800,000	$540
	Pittsburg	147	1,493	$531,380	$341
San Joaquin	Stockton	1,562	1,432	$431,500	$302
	Tracy	406	1,631	$680,000	$437
Stanislaus	Modesto	1,395	1,440	$435,000	$303
Solano	Vallejo	594	1,324	$550,514	$417
Santa Clara	Milpitas	125	1,328	$1,430,000	$1,016
	Morgan Hill	136	1,629	$1,133,000	$701
Alameda	Livermore	423	1,421	$1,110,000	$782

Source: Redfin.

Both tables prepared by Economic & Planning Systems (EPS), January 2023.

Table 5a
DRAFT Cost per VMT, Owned Residence

VMT Change	Daily VMT per Capita	Annual VMT per Household	Daily VMT per Capita	Annual VMT per Household
Current	30	75	25	55
Relocated	15	38	18	40
Change		-38		-15
Cost Effectiveness Factors:				
Duration of Relocation (Years)		10		10
VMT Annualization Factor		350		350
Total Daily VMT Saved (10 years)		131,250		53,900
Relocation Subsidy (one-time)		$100,000		$75,000
Overhead (25%)		$25,000		$18,750
Cost per VMT saved		$0.95		$1.74

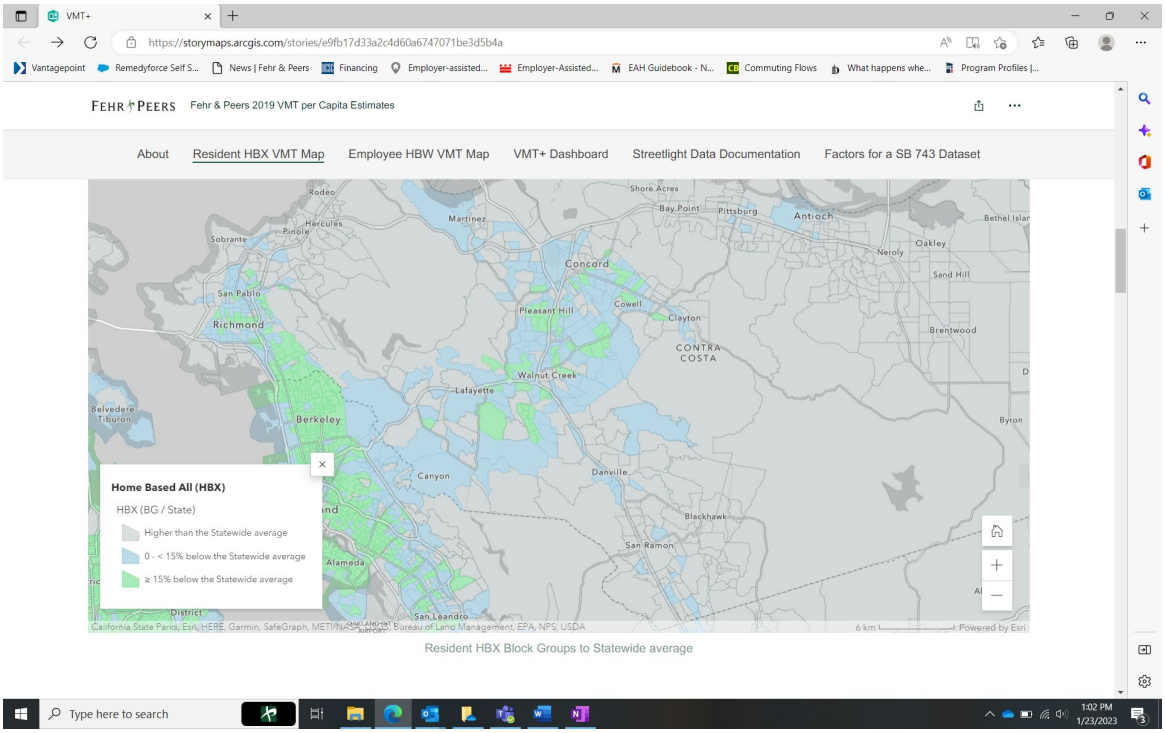
Source: Fehr & Peers, January 2023.

Table 5b
DRAFT Cost per VMT, Rented Residence

VMT Change	Daily VMT per Capita	Monthly VMT per Household	Daily VMT per Capita	Monthly VMT per Household
Current	25	55	20	36
Relocated	12	26	16	29
Change		-29		-7
Cost Effectiveness Factors				
Duration of Relocation (months)		120		120
Annualization Factor		350		350
Total VMT Saved (10 years)		100,100		25,200
Relocation Subsidy (monthly)		$600		$300
Overhead (25%)		$150		$75
Cost per VMT saved		$0.90		$1.79

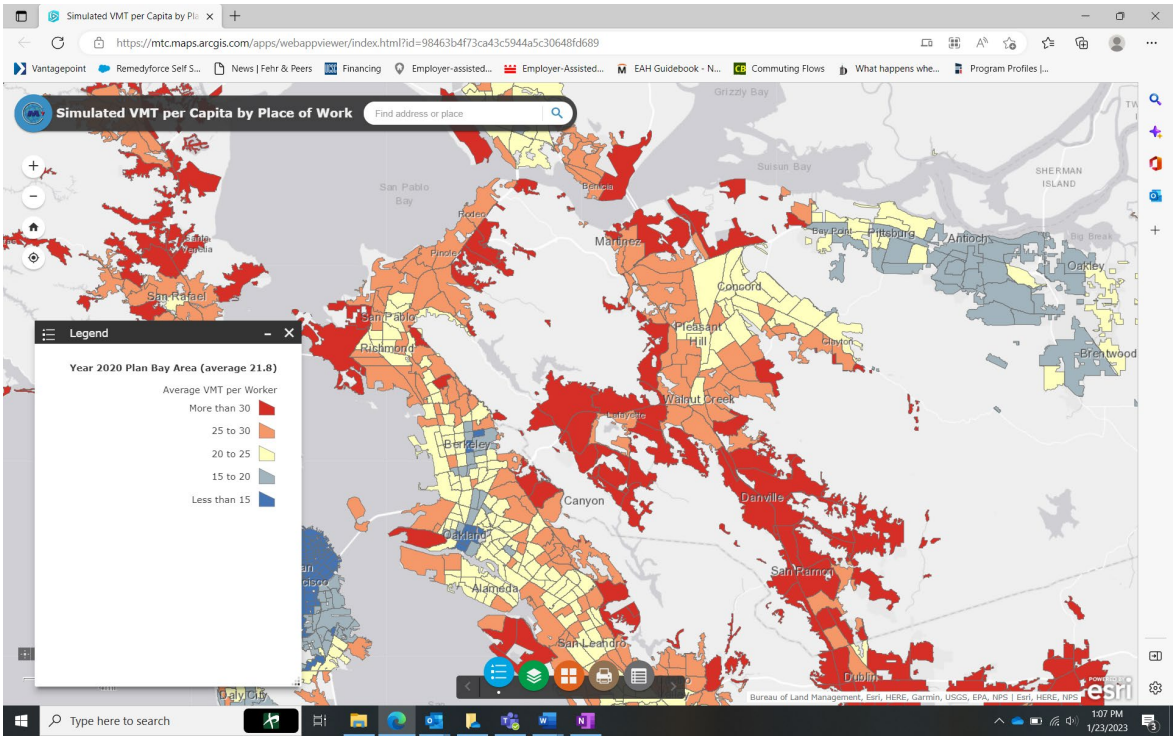
Source: Fehr & Peers, January 2023.

Figure 1. VMT+ "HBX VMT Per Resident" for Contra Costa County



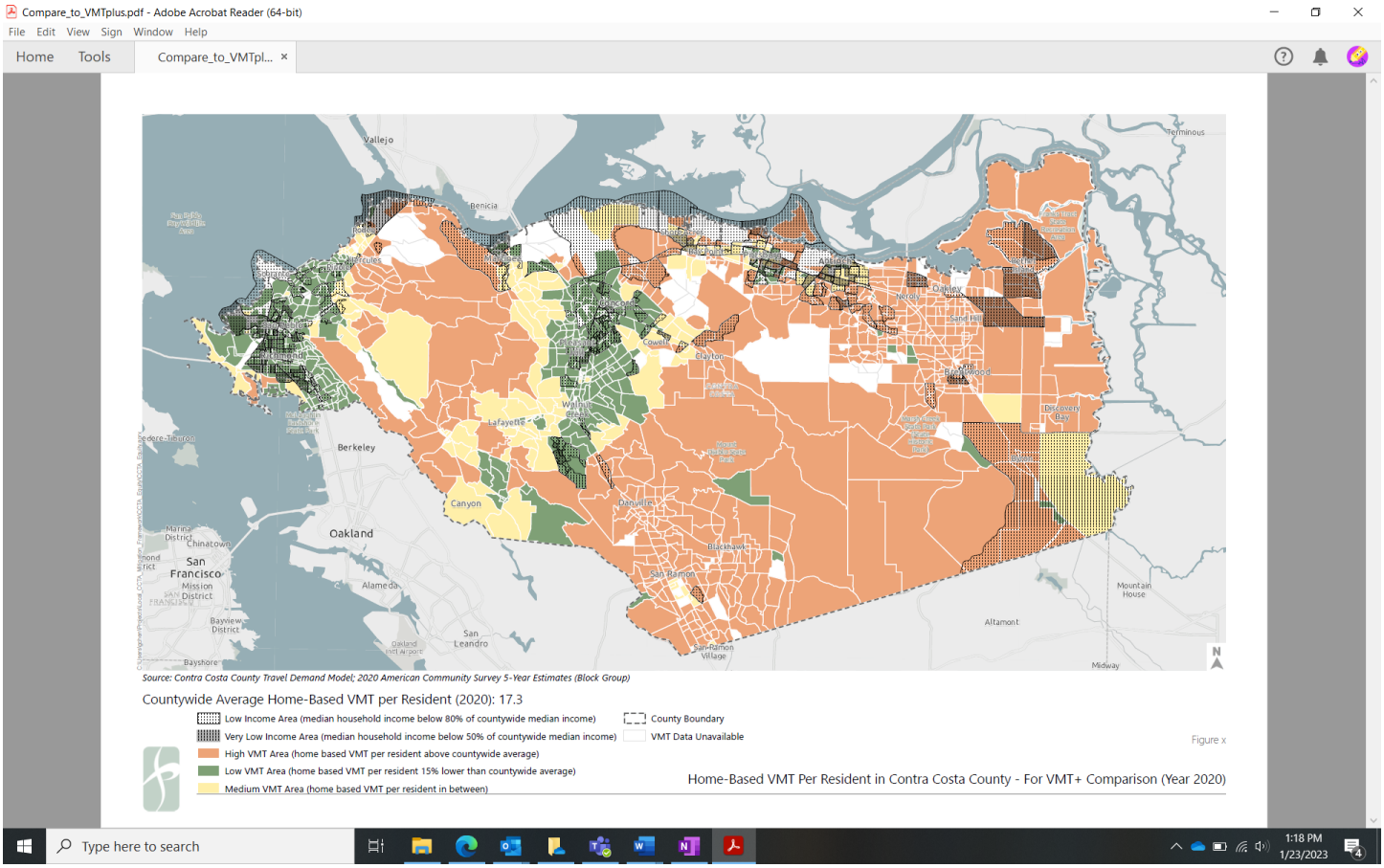
Source: Fehr & Peers.
https://storymaps.arcgis.com/stories/e9fb17d33a2c4d60a6747071be3d5b4a

Figure 2. MTC VMT per Capita Map for Contra Costa County



Source: MTC.
https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=98463b4f73ca43c5944a5c30648fd689

Figure 3. CCTA Model Home-Based VMT Per Capita for Contra Costa County



Source: Fehr & Peers, based on CCTA model.

DRAFT Programmatic Infill Development Incentives
CCTA VMT Mitigation Framework

Significant state, regional and local policies promote accelerated development in infill areas to increase sustainability of land development in general, and reducing overall vehicle miles traveled (VMT) in particular. Lower VMT generated by residents and workers in infill areas is caused by:

- Higher accessibility of infill areas, due to being amidst existing developed areas, allowing needed trips by residents or workers to be shorter than comparable development in greenfield areas.
- Proximity to existing transit services, bike lanes, pedestrian networks, etc., allowing trips to be made by modes other than driving.

The most recent state policy promoting accelerated development in infill areas is the Regional Early Action Planning Grants (so-called "REAP") program. The state program of grants was set up partly in response to regional and local agencies reports of significant obstacles to infill development: lack of adequate infrastructure to support development, scale/size of developable parcels, NIMBY-ism, and others factors. REAP is intended to help regional and local agencies in their efforts to overcome these obstacles and increase the rate at which new housing is developed in infill areas.

Some examples of regional programs aligned with the state's REAP program are:

- SACOG's "Green Means Go" program—the program is currently allocating up to $34M in state grants to locally designated "Green Zones", which are by definition infill areas (SACOG Green Zone map). Green Zones have much lower-than-average VMT per capita than other areas within the region, and by stimulating new development in those areas, an overall reduction of VMT in the region will result. The majority of the funding is targeted to infrastructure improvements in Green Zones needed to support new housing development in those areas.
- MTC's "Priority Development Areas" (PDA's)—the program is currently allocating grants to finalize plans and begin implementation of development in PDA's, which are also infill areas with significant transportation assets, such as high density of transit service (MTC PDA map).

The concept proposed for further exploration as part of the CCTA VMT Mitigation Framework is to recognize the significant existing policies and programs at the state and regional level to promote lower-VMT, infill development and contribute to those programs, through CEQA mitigations, to stimulate new development in those areas. Two potential approaches to connecting a project's VMT mitigation to an infill development program are an *exchange* or a *bank*.

- The exchange approach would require a project developer to support a low-VMT, infill development project. An example could be a proposed affordable housing project in an infill area like SACOG's Green Zones, or MTC's PDA's, that is short of funding. Funding from one or more CEQA projects with VMT impacts could be used to complete funding for the affordable housing project. VMT savings creditable to the CEQA project would be based on a pro-rata share of the project cost. The lead agency for the CEQA project, or some other agency involved in the example project, would need to fulfill the administrative and technical requirements for the exchange.
- The bank approach relies on the agency sponsoring a regional, sub-regional, or local infill development program, to establish a bank and set up procedures for receiving contributions from CEQA projects. The bank could more easily calculate VMT savings from a pool of proposed development projects in infill areas, and establish funding needed to complete projects in that

same pool. The VMT savings creditable to the CEQA project would be based on the cost of VMT savings established by the bank, and the amount of the contribution from the CEQA project.

In both cases, the agency sponsoring the exchange or bank would need to perform the administrative, technical and procedural work to establish the mechanism, and to make it possible for CEQA projects with VMT impacts to contribute. Providing substantial evidence of VMT savings and monitoring the programs would also fall to the sponsoring agency.

In both cases, it is also assumed that the CEQA project's contribution would not normally fully fund any one infill development in its entirety. The project contribution would be part a pool of other funding needed to get an infill project in a low-VMT area "across the finish line" to completion.

The advantages of the concept of infill development incentives as a potential CEQA mitigation for VMT impacts of a project are:

- Scale—this concept expands the scale of mitigation from the project to jurisdiction, sub-regional or regional scale.
- Leverage existing state, regional, and (in some cases) local policies and investments—this concept recognizes that no one source can fully fund most land use changes that result in long-term VMT savings, and that pooling available funding and resources from multiple sources will be needed.
- Duration of impact—because the concept would fund housing in low-VMT areas, the duration of VMT savings is extended. A one-time investment of mitigation funds leads to a long-term savings of VMT, with very low ongoing operational or maintenance costs.

This concept is included in the "Innovative" category primarily because the mechanisms needed to implement it (e.g. banks or exchanges), while not new, have not been applied to VMT savings. Exchanges or banks are normally established for more "static" mitigations, like habitat replacement. Using the mechanism for a more dynamic mitigation like VMT savings would require new technical approaches to calculate savings, and new monitoring approaches to ensure that savings endure over time.

Additionally, the concept requires either the agencies establishing infill development incentive programs (like SACOG and MTC, mentioned above) to expand their programs to include CEQA mitigation, or for other agencies to stand up programs with that purpose in mind. Both of those are longer term propositions, and would require dialog and partnership with those agencies.

Appendix G – Cost Effectiveness Calculations

STEP 1: Raw Total 10-Year VMTR (Sum from Table 13)

Total	**1,545,408,616**	

STEP 2: Within-Subsector Reduction

Type of VMT	Subsector	Reduction %	Total 10-Year VMTR	Subsector Cap	Within Subsector Cap?
Employee Commute Boundary VMT	Neighborhood Design (#1,2,3,4)	0.0016%	212,490	10%	Yes
	Trip Reduction Program (#17)	1%	132,806,805	45%	Yes
Total Boundary VMT	Neighborhood Design (#5, 15)	0.1700%	168,308,749	10%	Yes
	Transit (#6,7,8,9,10,11,12,13,14)	1.2512%	1,238,957,873	15%	Yes
	Total		**1,540,285,917**		

STEP 3: Across-Subsector Reduction

Type of VMT	Subsector	Reduction %	Total 10-Year VMTR	
Employee Commute Boundary VMT	Neighborhood Design (#1,2,3,4)	0.0016%	212,490	
	Trip Reduction Program (#16)	1%	132,806,805	
Total Boundary VMT	Combined	1.4190%	1,405,160,766	
	Total		**1,538,180,060**	
	Which is		**75%**	**of total 10-Year VMT that needs to be mitigated**

Total 10-Year VMT To Be Mitigated (Report p. 21)

Daily VMT	Annualization factor	Years	Total 10-Year VMT
584,100	351	10	**2,050,191,000**

	Strategy Name	Strategy Description	Category	Source	Costs (millions)			Total VMT Reduced	10-year Cost per VMT Reduced	Reduction %	10 Year VMTR (from 2030)	Countywide VMT Applied	CAPCOA Strategy	Subsector	Scale	Strategy Cap	Within Strategu Cap?
					Capital	Operating (Annual)	Total (10 Years)	(10 Years)									
1	***San Pablo Ave Bay Trail Gap Closure***	Reconfigure San Pablo Ave with three travel lanes and a separate Class 1 shared-use path. Closes 3.2-mile Bay Trail Gap between Pacific Avenue in Rodeo and Carquinez Bridge Trail in Crockett.	Infrastructure	MTC-ATP	$9.48	$0.09	$10.43	132,807	$78.54	0.00100%	132,807	Employee Commute Boundary VMT	T-20 Expand Bike Network	Neighborhood Design	P/C	0.50%	Yes
2	***North Bailey Road Active Transportation Corridor***	Construct two-way cycle track, ADA-compliant curb ramps, ADA-accessible sidewalks, traffic signal, and reconfigure travel lanes on Bailey Road between Willow Pass and Canal Roads.	Infrastructure	MTC-ATP	$6.80	$0.07	$7.48	26,561	$281.61	0.00020%	26,561	Employee Commute Boundary VMT	T-20 Expand Bike Network	Neighborhood Design	P/C	0.50%	Yes
3	***Martinez-Crockett Bay Trail Gap Closure***	Construct Class 1 shared-use path from Berrellesa Street to the Nejedly Staging Area at Carquinez Strait Regional Shoreline.	Infrastructure	MTC-ATP	$2.79	$0.03	$3.07	26,561	$115.58	0.00020%	26,561	Employee Commute Boundary VMT	T-20 Expand Bike Network	Neighborhood Design	P/C	0.50%	Yes
4	***Treat Blvd Ped/Bike Improvements***	Pedestrian and bicycle improvements on Treat Blvd.	Infrastructure	MTC-PBA	$3.00	$0.03	$3.30	26,561	$124.24	0.00020%	26,561	Employee Commute Boundary VMT	T-20 Expand Bike Network	Neighborhood Design	P/C	0.50%	Yes
5	***Countywide e-Bike Share Program***	Provide an e-bike share system that results in bikeshare access for up to 50% of county residents.	Program	Consultant	$8.00	$4.27	$50.72	19,804,524	$2.56	0.02000%	19,804,524	Total Boundary VMT	T-22-B Implement Electric Bikeshare Program	Neighborhood Design	P/C	0.06%	Yes
6	***Downtown Concord Circulator***	Downtown circulator/trolley service in Concord.	Transit	CC-SRTP	$1.90	$1.70	$18.90	708,953	$26.66	0.00072%	708,953	Total Boundary VMT	T-25 Extend Transit Network Coverage or Hours	Transit	P/C	4.60%	Yes
7	***Bishop Ranch Circulator***	Circulator shuttle operating every 15 minutes throughout Bishop Ranch.	Transit	CC-SRTP	$1.90	$1.60	$17.90	124,378	$143.92	0.00013%	124,378	Total Boundary VMT	T-25 Extend Transit Network Coverage or Hours	Transit	P/C	4.60%	Yes
8	***Hercules BART Extension (Phase 3, Alternative 6)***	Extend BART service from Richmond Station north to Hercules. Includes construction cost of guideway, 3 new stations, and a terminal yard, vehicle acquisition, and cost of added service.	Transit	CCTA-CTPL	$3,582.00	$40.50	$3,987.00	230,920,752	$17.27	0.23320%	230,920,752	Total Boundary VMT	T-25 Extend Transit Network Coverage or Hours	Transit	P/C	4.60%	Yes
9	***San Pablo/ MacDonald BRT (Phase 2)***	Extend BRT service to the Richmond Parkway Transit Center and north to the Hercules Transit Center. Includes expanded service, expanded parking at Richmond Parkway and Hercules Transit Centers, and bus-only lanes on San Pablo Avenue and MacDonald.	Transit	CCTA-CTPL	$180.00	$23.39	$413.86	98,032,395	$4.22	0.09900%	98,032,395	Total Boundary VMT	T-28 Provide Bus Rapid Transit	Transit	P/C	13.80%	Yes
10	***23rd St BRT (Phase 2)***	Develop BRT route connecting planned Richmond Ford Point Ferry Terminal and Richmond Field Station via San Pablo and downtown Richmond. Includes expanded parking at Richmond Parkway and Hercules Transit Centers, new vehicle purchases, extended service to Hercules, and bus-only lanes and BRT stations on 23rd/San Pablo Avenue.	Transit	CCTA-CTPL/ MTC-PBA	$108.00	$9.75	$205.53	98,032,395	$2.10	0.09900%	98,032,395	Total Boundary VMT	T-28 Provide Bus Rapid Transit	Transit	P/C	13.80%	Yes
11	***Concord Naval Weapon Station Routes (Phases 1-2)***	Phase 1: Provide all-day transit service connecting CNWS to BART and downtown Concord. Phase 2: Add Los Medanos circulator route and express service between Los Medanos. BART, and downtown.	Transit	CC-SRTP	$9.32	$9.00	$99.32	5,632,816	$17.63	0.00569%	5,632,816	Total Boundary VMT	T-25 Extend Transit Network Coverage or Hours	Transit	P/C	4.60%	Yes
12	***15-Minute BART Feeder Network***	Increase frequency to every 15 minutes on 10 County Connection routes serving BART stations during peak commute periods.	Transit	County Connection / MTC-PBA	$10.80	$7.80	$88.80	39,212,958	$2.26	0.03960%	39,212,958	Total Boundary VMT	T-26 Increase Transit Service Frequency	Transit	P/C	11.30%	Yes
13	***23rd St BRT (Phase 3)***	Develop BRT route connecting planned Richmond Ford Point Ferry Terminal and Richmond Field Station via San Pablo and downtown Richmond. Includes bus-only lanes and BRT stations on 23rd/San Pablo Avenue and extension of Rapid Bus service.	Transit	CCTA-CTPL/ MTC-PBA	$63.00	$11.54	$178.36	98,032,395	$1.82	0.09900%	98,032,395	Total Boundary VMT	T-28 Provide Bus Rapid Transit	Transit	P/C	13.80%	Yes
14	***Countywide Transit Fare Reductions***	Provide fare-free transit on all bus routes operating within Contra Costa County.	Pricing	Consultant Research	n/a	$16.20	$161.95	673,353,824	$0.24	0.68000%	673,353,824	Total Boundary VMT	T-29 Reduce Transit Fares	Transit	P/C	1.20%	Yes
15	***Countywide Carshare Program***	Offer a countywide carshare program, subsidizing memberships by up to $50/year for all members, up to 80,000 members, and 10% administrative costs.	Program	Consultant Research	n/a	$ 4.46	$44.55	148,533,932	$0.30	0.15000%	148,533,932	Total Boundary VMT	T-21-A Implement Conventional Careshare Program	Neighborhood Design	P/C	0.15%	Yes
16	***Mobility As A Service (MAAS)***	Develop a Mobility On Demand (MOD) app to provide real-time, multimodal trip planning, streamline transit and shared mobility payments, and incentivize more efficient modes based on time of day.	Program	CCTA-680	$6.90	$0.33	$10.15	132,806,805	$0.08	1.00000%	132,806,805	Employee Commute Boundary VMT	T-7 Implement Commute Trip Reduction Marketing	Trip Reduction Programs	P/S	4%	Yes

Strategy Name		LOW						HIGH						Assumptions	Data Sources
		Total cost	Capital Costs			Operating costs		Total cost	Capital Costs			Operating costs			
			Per-unit cost	Unit type	# units	Cost per year	# years		Per-unit cost	Unit type	# units	Cost per year	# years		
6	Provide an e-bikeshare system for up to 50% of county residents	$ 26,470,000.00	$1,600	e-bike	2500	$ 2,247,000.00	10	$ 50,720,000.00	$1,600	e-bike	5000	$ 4,272,000.00	10	Countywide bike program would require 10x (low) or 20x (high) more bicycles than Richmond bike program (proportional to population) **Richmond program 2022 reboot costs** Platform cost = $7.5k/month Maintenance labor = $5k/month Software/SIM= $15/device/month Warehouse/Insurance = $6k/month Bike replacements = 30% of fleet per year Battery replacements = 50% of fleet per year at $300/battery	Contract for 6-month operations/maintenance/replacement of 250-unit bikeshare system in Richmond, CA. City Council minutes, August 19, 2022.
15	Countywide transit fare reductions of 50-100%	$ 161,951,251.68	n/a	n/a	n/a	$ 16,195,125.17	10	$ 161,951,251.68	n/a	n/a	n/a	$ 16,195,125.17	10	Fill funding gap for: 100% fare revenue for County Connection, Tri Delta Transit, WestCat; 9% of fare revenue for AC Transit.	NTD agency profiles, 2019. See Transit Service Data Tab
16	Offer a countywide carshare program	$ 14,850,000.00	n/a	vehicle	500	$ 1,485,000.00	10	$ 44,550,000.00	n/a	vehicle	1500	$ 4,455,000.00	10	Assumes: $50 annual subsidy (plus 10% admin fee) for all members, assuming standard rate of 54 members/carshare vehicle and 1500 vehicles total.	

Strategy Name		Percentage reduction		Type of VMT affected	Assumptions		Plan horizon (years)	2020 Daily VMT Reduced (by method)		2040 Daily VMT Reduced (by method)				2030 Daily VMT Reduced (Interpolation)		2030 Annual VMT Reduced		2030 Cumulative VMT Reduced over10 years	
		Low	TDM+ High		Low	High		Low	High	TDM+ Low	TDM+ High	Regional Model	Literature	Low	High	Low	High	Low	High
6	Provide an e-bikeshare system for up to 50% of county residents	0.01%	0.02%	All neighborhood/city trips	Up to 25% of households have access to e-bike sharing	Up to 50% of households have access to e-bike sharing	10	2,597	5,195	3,042	6,084		-	2,820	5,640	990,154	1,980,308	9,901,542	19,803,084
15	Countywide transit fare reductions of 50-100%	0.68%	0.91%	All neighborhood/city trips	50% fare reduction; 60% of routes without fares.	100% fare reduction; 80% of routes without fares.	10	176,628	236,370	206,868	276,838		-	191,748	256,604	67,330,485	90,104,031	673,304,850	901,040,314
16	Offer a countywide carshare program	0.07%	0.15%	All neighborhood/city trips	500 vehicles deployed.	1500 vehicles deployed; based on ~1600 vehicles deployed in SF carshare pilot (2015)	10	18,182	38,962	21,295	45,633		-	19,739	42,297	6,931,079	14,852,313	69,310,793	148,523,129

VMT Change	18. Homeowner Relocation Subsidy				19. Renter Relocation Subsidy			
	High		Low		High		Low	
	Daily VMT per Capita	Daily VMT per Capita	Daily VMT per Capita	Daily VMT per Capita	Daily VMT per Capita	Daily VMT per Household	Daily VMT per Capita	Daily VMT per Household
Current	30	75	25	55	25	55	20	36
Relocated	15	38	18	40	12	26	16	29
Change		-38		-15		-29		-7
Cost Effectiveness Factors:								
Duration of Relocation (Years)		10		10		120		120
VMT Annualization Factor		350		350		350		350
Total Daily VMT Saved (10 years)		131,250		53,900		100,100		25,200
Relocation Subsidy (one-time)		$100,000		$75,000		$600		$300
Overhead (25%)		$25,000		$18,750		$150		$75
Cost per VMT saved		$0.95		$1.74		$0.90		$1.79

Appendix H – Analysis of Development Costs and Effects of VMT Fees

DRAFT APPENDIX _:
TECHNICAL MEMORANDUM

To: Julie Morgan, Fehr & Peers

From: Teifion Rice-Evans and Rosanna Ren, Economic & Planning Systems, Inc. (EPS)

Subject: CCTA VMT Study: Fees and Development Cost and Feasibility Considerations; EPS #211003

Date: February 7, 2023

The Economics of Land Use

Economic & Planning Systems, Inc. (EPS), as a subconsultant to Fehr & Peers, Inc. (F&P), was asked to consider the implications of the potential introduction of a VMT Mitigation program on the prospects and viability of new development in Contra Costa County. The purpose of this memorandum is to provide information to CCTA policymakers and staff and F&P as they consider options for addressing the requirements of SB 743.

This EPS assessment includes a planning-level analysis of the development prospects of four different land use types in Contra Costa County and the relative effects of the imposition of a new VMT Mitigation program. The analysis focuses on four prototype developments reflecting four land uses in four different locations:

- Single Family Development in the City of Antioch.
- Multi Family Development in the City of Concord.
- Office Development in the City of San Ramon.
- Industrial Development in the unincorporated community of North Richmond.

These four land uses were selected to reflect a broad range of development types with associated cities selected based on areas where this type of development is currently being developed, has historically been developed, and/or is being considered for development.

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Los Angeles

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This is a planning-level analysis that provides broad conclusions about development prospects and viability, though it is important to recognize that: (1) not all projects are the same, so there will be individual examples where project-specific effects will be different from the overall conclusion provided; (2) any new or increased fee placed on new development will add to development costs and thereby create an additional hurdle to development even if modest in the broad picture of development economics; and, (3) broader economic and real estate market cycles will typically have a larger effect on development feasibility than fee adjustments. F&P provided illustrative VMT Fees for assessment, including fee levels of $1,000, $3,000, and $5,000 per Dwelling Unit Equivalent. This assessment has focused on the highest illustrative fee of $5,000 per DUE.

It is important to recognize that the potential for a VMT Mitigation program is being developed in response to SB 743 and new CEQA requirements to consider VMT impacts. Because a VMT Fee would only apply to projects that do not screen out (generate more VMT than a specified threshold) and cannot fully rely on site-specific strategies, not all development projects would be required to pay the potential VMT Fee. While the potential for an adopted VMT Fee to expedite certain developments, through CEQA process streamlining, remains uncertain and will depend on lead agency decisions among other factors, it is possible that under some circumstances the additional costs imposed on new development by a VMT Fee could be offset by streamlining benefits.

Summary of Findings

This section provides a summary of findings concerning the four land uses studied.

1. **A new VMT Fee would add costs to all private land use types and developments. Without considering the uncertain but potential streamlining or other benefits, this new fee would require new developments to cover higher costs to be feasible. Even with relatively modest fee levels, this could be challenging for some land uses in the short to medium term.**

As a percentage of estimated average development costs, the highest illustrative VMT fee ($5,000 per DUE) would represent a 0.76 percent increase in single family detached development costs, 0.40 percent for multifamily development, 0.97 percent for office development, and 2.51 percent for industrial development. While the size of these percentage increases provides an important insight into the relative impact of costs, the broader real estate prospects for each of these land uses is equally if not more important.

For office development, real estate conditions are challenging and are likely to remain that way for some time. For multifamily development, the high costs of development, especially for midrise or denser products, limits the number of locations where it is viable. Single family development in Contra Costa County has seen something of a renaissance in the pandemic era but are now confronted with higher interest rates as well as construction cost challenges. The industrial/ logistics industry may be softening, but remains strong, in locations with appropriate sites and transportation infrastructure.

Table 1 Summary of VMT Mitigation program Impacts

	Single Family	Multifamily	Office	Industrial
Illustrative Fee [1]	$5,000 per DUE $5,000 per DU	$5,000 per DUE $2,500 per DU	$5,000 per DUE $7.00 per sq ft	$5,000 per DUE $4.25 per sq ft
Development Costs				
Current Total Costs	$661,150 per DU	$622,029 per DU	$719.53 per sq ft	$169.45 per sq ft
Total Costs with VMT Fee	$666,150 per DU	$624,529 per DU	$726.53 per sq ft	$173.70 per sq ft
Percent Increase with VMT Fee	0.76%	0.40%	0.97%	2.51%
Fees as % of Total Development Cost				
Current Fees as % of Total Development Cost	8.1%	6.4%	3.2%	7.7%
VMT Fee as % of Current Total Development Cost	0.8%	0.4%	1.0%	2.5%
Fees with VMT Fee as % of Current Total Development Cost	8.9%	6.8%	4.2%	10.2%
Permits and Impact Fees				
Current Permits and Fees	$53,625 per DU	$39,842 per DU	$23.10 per sq ft	$13.11 per sq ft
Permits/Fees with VMT Fee	$58,625 per DU	$42,342 per DU	$30.10 per sq ft	$17.36 per sq ft
Percent Increase with VMT Fee	9.32%	6.27%	30.30%	32.43%
Transportation Impact Fees				
Current Transportation Impact Fees	$26,133 per DU	$5,965 per DU	$10.20 per sq ft	$12.19 per sq ft
Transportation Fees with VMT Fee	$31,133 per DU	$8,465 per DU	$17.20 per sq ft	$16.44 per sq ft
Percent Increase with VMT Fee	19.13%	41.91%	68.63%	34.86%

[1] Assumed DUE factors are: 1 DUE per DU for single family; 0.5 DUE per DU for multifamily; 1.4 DUE per 1,000 sq ft for Office; 0.85 DUE per 1,000 sq ft for Industrial
This analysis has focussed on the highest illustrative fee of $5,000 per DUE. Lower illustrative scenarios (i.e. $1,000 and $3,000 will have proportionately lower effects).

Sources: Selected Contra Costa County cities; Fehr & Peers; EPS

2. **Single family detached development, especially in East Contra Costa County, has been economically robust and viable in recent years. However, multiple, recent increases in interest rates and already high costs of development mean the development community is concerned about any additional cost burdens.**

A potential illustrative VMT Fee of $5,000 per DUE ($5,000 per single family unit) was considered in the context of current development economics. With an average, illustrative cost of home development (excluding developer profit) estimated at about $660,000 per unit, the illustrative VMT fee would represent an increase in development costs of about 0.76 percent and would require a similar level of increase in home price (or reduction in land cost) to cover this additional cost. In the context of estimated existing development impact fees, this fee would represent a 9.3 percent increase in fee levels.

While this could be considered a relatively modest change in overall costs, the realities of the current economic and development landscape – specifically higher interest rates reducing demand for new homes as well as already high development costs - make any near-term increase in fees a concern for residential developers looking to develop in East Contra Costa County and could render some projects infeasible. To the extent that the introduction of the VMT Mitigation program comes with reductions in other transportation expenditure obligations or CEQA streamlining, these cost increases might be somewhat offset.

3. **While new multifamily development projects have been occurring in some areas of some cities in Contra Costa County in recent years, and many other cities are encouraging them especially near transit stations, the high existing costs of development mean that these projects must be able to achieve high lease rates to be feasible even before taking account potential VMT Fees.**

The illustrative development prototype provided below estimates an average cost of multifamily development at about $622,000 per unit. To cover this level of cost, the average market rate rent per unit must be about $4.22 per square foot per month or about $3,800 per month for a 900-square foot unit. This is above the achievable lease rate in many Contra Costa County cities and indicates the importance of location and amenities to successful siting of apartment buildings as well as the challenges for many locations to attract this type of development.

A potential, illustrative VMT Fee of $5,000 per DUE ($2,500 per unit for multifamily development) would represent an increase in development costs of about 0.40 percent and would require an offsetting level of increased lease rates (or reduction in land cost) to cover this additional cost. In the context of estimated existing development impact fees, this fee would represent an increase in overall fee levels of 6.27 percent. While this fee level increase is modest, any such increase should be considered in the context of the challenging development economics for multifamily development in many locations as well as the potential for such a fee program to provide streamlining or other offsetting benefits.

4. **While there are clusters of existing office development in some Contra Costa County cities, most cities have seen modest office development in recent years, with the pandemic and work-from-home trends creating challenges for cities hoping to attract new office development.**

The illustrative development prototype provided below estimates an average cost of a large, modern office development at about $720 per gross building square foot. To cover this level of cost, the average lease rate must be about $5.61 per net leasable square foot per month. This is well above the typical lease rates of Contra Costa County's larger office buildings. The combination of high development costs and contracting office demand makes office development challenging.

A potential, illustrative VMT Fee of $5,000 per DUE ($7 per gross building square foot) would represent an increase in development costs of about 0.97 percent and would require an offsetting level of increase in lease rates (or reduction in land cost) to cover this additional cost. In the context of estimated existing development impact fees, this fee would represent an increase in overall fee levels of 30.3 percent. This level of fee increase is not insignificant, though more importantly would be added onto a land use that is already struggling from a broader market perspective.

5. **Industrial development, and specifically warehouse and distribution developments, have been performing strongly, likely with some capacity to absorb some level of VMT fees.**

The logistics real estate market has performed strongly in recent years with online shopping, improving technology, and the pandemic accelerating an already growing industry. This has resulted in substantial new logistics development throughout California with demand for the spaces of different sizes and types in a broad range of locations throughout the state. Selected locations in Contra Costa County with sufficient site sizes, appropriate zoning, and transportation infrastructure proximity are likely to be appealing for new industrial development. And, while the pace of economic growth is expected to slow logistics development in the coming year, prospects are strong for this sector.

The illustrative development prototype provided below estimates an average cost of industrial development at about $169 per gross building square foot. A potential, illustrative VMT Fee of $5,000 per DUE ($4.25 per gross building square foot) would represent an increase in development costs of about 2.5 percent and would require an offsetting level of increase lease rates (or reduction in land cost) to cover this additional cost. In the context of estimated existing development impact fees, this fee would represent an increase in overall fee levels of 32 percent. This is a more substantial percentage increase than for the residential development prototypes, though may still be absorbable, potentially in smaller increments, given the strong development economics.

Development Cost and Feasibility Analysis

EPS developed estimated average development cost profiles for four illustrative development prototypes in the following locations:

- Single Family Development in the City of Antioch.
- Multi Family Development in the City of Concord.
- Office Development in the City of San Ramon.
- Industrial Development in the unincorporated community of North Richmond.

For each land use, EPS developed planning levels estimates of project costs in the format of a vertical development budget, including direct construction costs, indirect costs (including existing development impact fees), and site acquisition costs. These illustrative development cost profiles provided a baseline against which to understand the development cost changes associated with illustrative VMT Fees as well as to consider the current feasibility of these land uses under current market conditions.

The illustrative development cost budgets by land use/ development prototype are shown in **Table 2 – 5** below. Key cost categories include:

- **Direct Costs**. Direct construction costs including labor, materials, and associated overhead required to prepare the site, build structures, install parking systems, and fit out leasable spaces. Construction cost estimates reflect data from Marshall & Swift, a third-party cost estimating resource.[1] The analysis of construction costs is specific to the type of construction anticipated for the prototypes with unique cost estimates (construction costs per square foot and parking costs per space vary by number of stories, type of construction, and nature of parking).

- **Indirect Costs.** Indirect costs include soft costs and development fees. Soft costs include professional services associated with planning, design, and other professional support services; assumptions regarding taxes and insurance and financing costs; as well as marketing and leasing costs and general and administrative costs borne by the project developer. These soft costs are typically estimated as a percentage of direct costs. Permits and fees are estimated at a planning level based on a review of applicable development impact fees.

- **Site (Land) Acquisition Costs**. Land acquisition costs can vary significantly by site. EPS developed estimates of average per acre land cost for the different development prototypes in the different cities using CoStar and Redfin data.

Together these three cost categories provide estimates of total project cost per unit (for residential) or per gross building square foot (for non-residential). In the case of single family detached developments, for development feasibility analysis purposes, a developer

[1] EPS evaluated construction cost data for Oakland ZIP code 94612 reported by Marshall & Swift Commercial Building Cost Data.

profit is also shown and added to the project costs to indicate the sales price required to be able to cover the development costs and provided a hurdle level of profit. For other uses, development feasibility is assessed based on a hurdle developer yield/ return on cost. Under this metric, the lease rate required to provide a hurdle yield rate to developers is estimated.

As shown in **Tables 2** – **5**, the following feasibility thresholds and comparisons were developed for each land use type:

Single Family Detached Development. The estimated home sale price required to cover the illustrative single family detached development cost and hurdle profit is about $760,000 per unit or $304 per net/ livable square foot. The current range of housing prices in the City of Antioch range between $635,000 and $1.0 million, or $244 to $388 per net square foot. The reality of recent home construction and sales and the fact that the estimated required price point falls in the on-the-ground range indicates the current general feasibility of single family detached development in East Contra Costa County.

Multi Family Apartment Development. Given the estimated project cost of $622,000 per unit for midrise multifamily development, an average lease rate of $4.22 per net square foot per month or $3,800 per month is required from the market rate units to generate a hurdle yield of 5 percent. This calculation also takes into account the City of Concord's inclusionary requirement of 10 percent. Current top-of-market lease rates in the City of Concord are about $3.59 per square foot per month or $3,200 monthly for a 900-square foot apartment. This indicates that apartment developers will need to be selective in choosing cities and locations that can command these high rents.

Office Development. Given the estimated project cost of $720 per gross square foot for large, modern office buildings, an average lease rate of $5.61 per square foot per month is required to generate a hurdle yield of 6 percent. The City of San Ramon has a substantial existing office building stock with average lease rates of about $3.65 per square foot per month. This underlies the feasibility challenges for new speculative office development in central and likely others part of Contra Costa County.

Industrial/ Logistics Development. Given the estimated project cost of $169 per gross square foot for large warehouse and distribution developments, an average lease rate of $0.86 per square foot per month is required to generate a hurdle yield of 5.5 percent. A recently built warehouse project in the community of North Richmond currently commands this level of lease rate, indicating industrial development feasibility and a likely continued demand for these types of development in parts of Contra Costa County with site sizes, zoning and transportation infrastructure access that could accommodate these new industrial buildings.

Table 2 Single Family 100-Unit Subdivision Prototype – Total Development Costs

DEVELOPMENT PROGRAM ASSUMPTIONS			Total	Per Unit	% of Value
15-Acre Site (Gross Square Feet)			653,400	6,534	N/A
Residential Units			100	N/A	N/A
Gross Building Area (Square Feet)	2,900	SF per Unit	290,000	2,900	N/A
Net Area (Square Feet)	2,500	SF per Unit	250,000	2,500	N/A
Parking Spaces			*Integrated Garage*		
DEVELOPMENT COSTS, LAND VALUES, AND RETURN					
LAND ACQUISITION	$400,000	per site acre	$6,000,000	$60,000	8%
DIRECT COSTS					
Basic Site Work/ Lot Improvements	$90,000	Per Lot	$9,000,000	$90,000	12%
Direct Construction Cost	$125	Cost/SF (GBA)	$36,250,000	$362,500	48%
Direct Cost Total			$45,250,000	$452,500	60%
INDIRECT COSTS					
Architecture and Engineering / Other Consultants	6.0%	of Direct Cost	$2,715,000	$27,150	4%
Taxes and Insurance	2.0%	of Direct Cost	$905,000	$9,050	1%
Financing	4.0%	of Direct Cost	$1,810,000	$18,100	2%
Sales and Marketing	3.0%	of Direct Cost	$1,357,500	$13,575	2%
Developer Fee	4.0%	of Direct Cost	$1,810,000	$18,100	2%
Permits and Fees	$62,675	per Unit	$6,267,469	$62,675	8%
Total Indirect Costs			$14,864,969	$148,650	20%
TOTAL LAND/ DEVELOPMENT COSTS	**$228**	**per square foot (GBA)**	**$66,114,969**	**$661,150**	**87%**
DEVELOPER RETURN REQUIREMENT	**15.0%**	of Total Development Costs	$9,917,245	$99,172	13%
TOTAL COST/ RETURN	**$262** **$304**	**per square foot (GBA)** **per net square foot**	**$76,032,214**	**$760,322**	**100%**
FEASIBILITY THRESHOLDS					
Required Market Price Points for Illustrative Development Prototype	$304	per net square foot		$760,322	per Unit
Observed Market Price Points for Active Subdivisions (City of Antioch/ Gregory Group) (1)	$244 - $388	per net square foot		$635,000 - $992,000	per Unit

(1) Per Gregory Group, sales prices of active single family subdivisions in the City of Antioch.

Sources: City of Antioch; Costar; Marshall & Swift; The Gregory Group; EPS

Table 3 Multifamily 100-Unit Prototype – Total Development Costs

DEVELOPMENT PROGRAM ASSUMPTIONS			PER GBA	TOTAL	PER UNIT	% of Value
Site (Square Feet)				**43,560**	N/A	N/A
Residential Units				**100**	N/A	N/A
Gross Building Area (Square Feet)	1,100	SF per Unit		**110,000**	1,100	N/A
Rentable Area (Square Feet)	82%	of GBA		**90,000**	900	N/A
Total Parking Spaces	**1.50**	per Unit		150	2	N/A
Surface Parking Spaces	**0%**	of total parking		0	0	N/A
Podium Parking Spaces	**100%**	of total parking		150	2	N/A
DEVELOPMENT COSTS, LAND VALUES, AND RETURN						
DIRECT COSTS						
Basic Site Work	**$20.00**	per site SF		$871,200	$8,712	1%
Building Direct Cost	**$350**	Cost/SF (GBA)		$38,500,000	$385,000	62%
Total Parking Direct Cost	$45,000	per Space		$6,750,000	$67,500	11%
Total Construction Cost				$46,121,200	$461,212	74%
INDIRECT COSTS						
Architecture and Engineering	4.0%	of Direct Construction Cost		$1,810,000	$18,100	3%
Other Soft Costs	2.0%	of Direct Construction Cost		$905,000	$9,050	1%
Permits and Fees	$39,842	per Unit		$3,984,172	$39,842	6%
Taxes and Insurance	2.0%	of Direct Construction Cost		$905,000	$9,050	1%
Financing	4.0%	of Direct Construction Cost		$1,810,000	$18,100	3%
Marketing/Leasing	3.0%	of Direct Construction Cost		$1,357,500	$13,575	2%
Developer Fee	4.0%	of Direct Construction Cost		$1,810,000	$18,100	3%
Total Indirect Costs (without VMT Fee)				$12,581,672	$125,817	20%
TOTAL DEVELOPMENT COSTS	**$533.66**	**per square foot (GBA)**		**$58,702,872**	**$587,029**	**94%**
Land Value (Market Comps)	$31.82	per square foot (GBA)		$3,500,000	$35,000	6%
	$3,500,000	per site acre				
TOTAL LAND/ DEVELOPMENT COSTS	**$565.48**	per square foot (GBA)		**$62,202,872**	**$622,029**	**100%**
	$691.14	per net square foot				
FEASIBILITY THRESHOLDS						
Required Market Price Points for Illustrative Development Prototype	$4.22	per SF/Month			$3,796	per month
Observed Market Price Points for Market Prototypes (Upper End of City of Concord Rents/Costar) (1)	$3.59	per SF/Month			$3,233	per month

(1) Average rents for 1- and 2-bedroom apartments (average size 900 square feet) for the 228-unit Grant apartment project (built in 2022)

Sources: Selected Contra Costa County cities; Costar; Marshall & Swift; EPS

Table 4 Office Prototype – Total Development Costs

DEVELOPMENT PROGRAM ASSUMPTIONS			Total	Per GBA	% of Value
Site (Square Feet)			**217,800**	N/A	N/A
Gross Building Area (Square Feet)	**0.60**	FAR	**130,680**	N/A	N/A
Rentable Area (Square Feet)	**90%**	of GBA	117,612	N/A	N/A
Parking Spaces	**3.0**	per 1,000 SF	392	N/A	N/A
DEVELOPMENT COSTS, LAND VALUES, AND RETURN					
DIRECT COSTS					
Basic Site Work	**$20.00**	per site SF	$4,356,000	$33.33	5%
Direct Construction Cost[2]	**$325**	Cost/SF (GBA)	$42,471,000	$325.00	45%
Tenant Improvement Cost	**$70**	Cost/SF (GBA)	$9,147,600	$70.00	10%
Parking Direct Cost	**$50,000**	per Space	$10,781,100	$82.50	11%
Total Construction Cost			$66,755,700	$510.83	71%
INDIRECT COSTS					
Architecture and Engineering	4.0%	of Direct Construction Cost	$2,495,988	$19.10	3%
Other Soft Costs	2.0%	of Direct Construction Cost	$1,247,994	$9.55	1%
Permits and Fees	$23.10	per GBA	$3,018,555	$23.10	3%
Taxes and Insurance	2.0%	of Direct Construction Cost	$1,247,994	$9.55	1%
Financing	4.0%	of Direct Construction Cost	$2,495,988	$19.10	3%
Marketing/Leasing	3.0%	of Direct Construction Cost	$1,871,991	$14.33	2%
Developer Fee	4.0%	of Direct Construction Cost	$2,495,988	$19.10	3%
Total Indirect Costs (without VMT Fee)			$14,874,498	$113.82	16%
TOTAL DEVELOPMENT COSTS (excluding land)			**$81,630,198**	**$624.66**	**87%**
Land Value (Market Comps)	$94.87	per square foot (GBA)	$12,397,448	$94.87	13%
	$2,479,490	per site acre			
TOTAL COST			**$94,027,646**	**$719.53**	**100%**
FEASIBILITY THRESHOLDS					
Required Market Price Points for Illustrative Development Prototype	$5.61	per SF/Month			
Observed Market Price Points for Market Prototypes (Large Office Building in City of San Ramon/Costar) (1)	$3.65	per SF/Month			

(1) CoStar reported full-service office lease rate for major office development in Bishop Ranch (built 1983; renovated 2016).
Sources: Selected Contra Costa County cities; Costar; Marshall & Swift; EPS

Table 5 Industrial Warehouse Prototype - Total Development Costs

DEVELOPMENT PROGRAM ASSUMPTIONS			Total	Per GBA	% of Value
Site (Square Feet)			**1,250,000**	N/A	N/A
Gross Building Area (Square Feet)	**0.40**	FAR	**500,000**	N/A	N/A
Rentable Area (Square Feet)	**100%**	of GBA	500,000	N/A	N/A
Parking Spaces	**2.0**	per 1,000 SF	1,000	N/A	N/A
DEVELOPMENT COSTS, LAND VALUES, AND RETURN					
DIRECT COSTS					
Basic Site Work	**$5.00**	per site SF	$6,250,000	$12.50	7%
Direct Construction Cost[2]	**$90**	Cost/SF (GBA)	$45,000,000	$90.00	53%
Parking Direct Cost	**$5,000**	per Space	$5,000,000	$10.00	6%
Total Construction Cost			$56,250,000	$112.50	66%
INDIRECT COSTS					
Architecture and Engineering	4.0%	of Direct Construction Cost	$2,000,000	$4.00	2%
Other Soft Costs	2.0%	of Direct Construction Cost	$1,000,000	$2.00	1%
Permits and Fees	$13.11	per GBA	$6,553,440	$13.11	8%
Taxes and Insurance	2.0%	of Direct Construction Cost	$1,000,000	$2.00	1%
Financing	4.0%	of Direct Construction Cost	$2,000,000	$4.00	2%
Marketing/Leasing	3.0%	of Direct Construction Cost	$1,500,000	$3.00	2%
Developer Fee	4.0%	of Direct Construction Cost	$2,000,000	$4.00	2%
Total Indirect Costs (without VMT Fee)			$16,053,440	$32.11	19%
TOTAL DEVELOPMENT COSTS			**$72,303,440**	**$144.61**	**85%**
Land Value (Market Comps)	$24.84	per square foot (GBA)	$12,420,463	$24.84	15%
	$432,828	per site acre			
TOTAL COST			**$84,723,903**	**$169.45**	**100%**
FEASIBILITY THRESHOLDS					
Required Market Price Points for Illustrative Development Prototype	$0.86	per SF/Month			
Observed Market Price Points for Market Prototypes (City of Richmond/Costar) (1)	$0.83	per SF/Month			

(1) Costar estimated lease rate for warehouse/distribution center in North Richmond (built 2022)

Sources: Selected Contra Costa County cities; Costar; Marshall & Swift; EPS

Appendix I – CCTA PC/Board Meeting Staff Report and Presentation

CONTRA COSTA transportation authority

Planning Committee **STAFF REPORT**

Meeting Date: April 06, 2023

Subject	**Presentation of the Draft Contra Costa Vehicle Miles Traveled Mitigation Program Framework Study (Study)**
Summary of Issues	In order to support the implementation of Senate Bill (SB) 743 in Contra Costa County, the Authority has been developing the framework for a Vehicle Miles Traveled (VMT) Mitigation Program since 2021. The Study is intended to determine the feasibility of a cost-efficient way to mitigate VMT impacts from land use development and transportation improvements. The Study was funded by a California Department of Transportation (Caltrans) Sustainable Communities Transportation Planning Grant.
Recommendations	Staff seeks acceptance of the Draft Study Report and direction for staff to finalize the Draft Study Report.
Staff Contact	Matt Kelly
Financial Implications	Consultant work funded by $400,000 in Caltrans Sustainable Communities Transportation Planning Grant
Options	Direction could be provided to revise the Draft Study Report.
Attachments	**A.** Executive Summary from Draft Study Report **B.** Full Draft Study Report available here
Changes from Committee	*N/A*

Background

In 2020, the Authority applied for, and received a SB 1 Sustainable Communities Planning

Grant to develop the framework for a VMT Mitigation Program for use by California Environmental Quality Act (CEQA) lead agencies in Contra Costa County. The documented need for conducting the Study was derived from both the feedback received from the Contra Costa Planning Directors Growth Management Program (GMP) Workshops, held during 2018 and 2019, and goals indicated in the 2020 Transportation Expenditure Plan: A Transformative Plan for Contra Costa's Future. The goals were to evaluate options for mitigation of VMT impacts in Contra Costa County resulting in the development of a framework for a VMT Mitigation Program that can be utilized by CEQA lead agencies in Contra Costa County, in order to allow for a more effective and impactful implementation of SB 743.

The Study commenced in Spring 2021 with the Authority retaining a team led by Fehr and Peers as consultant support. A study advisory group was assembled to represent stakeholder interests and guide the development of the framework aimed to reduce or fully mitigate the VMT resulting from local land use developments and transportation infrastructure improvements. GMP Task Force members, representing most of the Contra Costa County jurisdictions and transit agencies, were invited to participate in the Advisory group. Stakeholders from regional government agencies, non-governmental organizations and advocacy groups were also invited to represent those interests. The following agencies and organizations participated in the Advisory Group meetings:

- Contra Costa County
- Cities of Concord, Martinez, Pinole, Pittsburg, San Ramon and Walnut Creek; Town of Danville
- Regional Transportation Planning Committee Managers and 511 Contra Costa
- Alameda-Contra Costa Transit, Bay Area Rapid Transit, County Connection, TriDelta Transit, and Western Contra Costa County Transit Authority (WestCat)
- Caltrans and Metropolitan Transportation Committee (MTC)
- Building Industry Association (BIA), East Bay Leadership Council, and Save Mount Diablo

In order to guide the development of a VMT Mitigation Program Framework, the Advisory Group was initially provided an online survey to gauge interest in such a program, as well as determine preferences over what the program should include, and who should be the administrator. The five Advisory Group meetings focused on educating members on the

issues surrounding VMT and VMT Mitigation, and focused discussions were held on the following project components:

- Program Structure – Impact Fee, VMT Bank, VMT Exchange, or In-Lieu Fee?
- Evaluation Criteria – Legal/CEQA consistency, scale/geography of program.
- Applicability – What types of projects should be part of the program? Would the benefits be equitable?
- Data Analysis and Monitoring – How would VMT impacts and reductions be quantified and monitored?

A separate meeting was also held with BIA staff and the Contra Costa County developers they represent in order to test the feasibility of the proposed program as it pertains to additional cost for land use development projects.

The types of mitigation strategies that could be funded are important for determining the efficiency and cost of the VMT Mitigation Program. Several strategies were considered and analyzed as part of the Study. The table below shows the cost range for various VMT-reduction strategies (by VMT reduced over 10 years).

Category	**Cost per Total VMT Reduced over 10 years (estimated)**
VMT Reducing Infrastructure: Bike and pedestrian networks	$60 - $225 (could be as high as $500)
Transit Strategies: Extend transit hours or network	$4 - $25 (could be as high as $130)
Transit Strategies: Bus Rapid Transit	$1 - $4
Transit strategies: Increase frequencies*	$0.25 - $3
Housing Strategies: subsidies for workforce housing	$1 - $2
Transportation Demand Management Programs: Mobility-on-Demand (MoD) App, bikeshare, carshare	$0.10 - $3
Pricing Strategies: parking pricing, transit fare reductions	Up to $0.50

*Currently not fundable by fee programs under CA law.

The primary feedback we heard from the Advisory Group was that the program should: 1) be administered by the Authority and could be a fee, bank, or exchange; 2) fund strategies that have demonstrated VMT reductions; 3) be voluntary for lead agencies to participate; 4) allow lead agencies to fully mitigate their projects; and 5) have stable, predictable costs.

Study Recommendation

Based on the findings of the evaluation and feedback received, the recommendation resulting from the Study is to pursue a pilot program based around the Authority's MoD App. The MoD platform, currently funded for an initial phase, is designed to provide users with a full suite of trip planning options for all modes, regardless of provider and location. The platform can provide incentives for using low-VMT/low-greenhouse gas emissions travel modes, encouraging use of transit, shared mobility modes, and carpooling. Due to this, the MoD platform is seen as an efficient way of reducing VMT, and could be funded by a VMT mitigation program, as well as being used as a tool for measuring and verifying the VMT reductions by users, which is an important aspect of any program.

A proposed pilot would be administered by the Authority and would assess the feasibility of using the MoD platform as the basis for a Countywide VMT Mitigation Fee Program. The pilot would be available to voluntary lead agencies within Contra Costa County who are seeking an option for reducing VMT from land use development or transportation improvements. The pilot would utilize the MoD app's data collection and performance monitoring in order to add certainty to the cost-effectiveness estimates developed in the Study. If MoD proves to be effective, the Authority could use demonstrated VMT reductions and cost data as the basis for a future Countywide VMT Mitigation Fee Program.

Staff seeks acceptance of the Draft Study Report and direction for staff to finalize the Draft Study Report.

Draft Contra Costa Vehicle Miles Traveled (VMT) Mitigation Program Framework

Prepared for:
Contra Costa Transportation Authority

CONTRA COSTA
transportation
authority

March 2023

WC21-3806.00

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Executive Summary

Introduction

With the passage of SB 743 and adoption of vehicle miles traveled (VMT) as the preferred transportation impact metric under the California Environmental Quality Act (CEQA), projects that trigger significant VMT impacts are required to mitigate those impacts to the fullest extent feasible. Mitigation options have historically focused on on-site actions such as TDM strategies applied at an individual building or group of buildings. However, there are limitations in how much VMT reduction can realistically be generated by these relatively small-scale strategies. As a result, there is now growing interest in exploring options for larger-scale VMT mitigation programs that could fund a broader set of off-site actions and potentially result in more substantial VMT reductions over time.

Through the effort documented in this report, the Contra Costa Transportation Authority (CCTA) has taken the lead on exploring the possibility of a countywide VMT mitigation program in Contra Costa, which could apply to land use or transportation projects that trigger significant VMT impacts and that require feasible mitigation. This was a need identified by the Contra Costa Planning Directors in 2019 and was included as a component of the 2020 Transportation Expenditure Plan for a new transportation sales tax measure in Contra Costa, which ultimately failed at the ballot in March 2020.

This study has been led by CCTA in partnership with Caltrans and was informed by a Project Advisory Committee made up of representatives from local jurisdictions, local and regional transit operators, state and regional transportation agencies, organizations that promote sustainable transportation and land use policy, and the development community.

Potential Program Structure

There are several ways that a mitigation program could be structured.

- **VMT Impact Fee:** Project applicants would pay a fee to an administering agency, and the fee revenue would be used to construct capital improvements that have a demonstrated effect of reducing VMT in the community.
- **VMT Exchange:** Project applicants would directly fund a specific VMT reduction strategy selected from a pre-qualified list, or could propose and fund a new strategy that can be demonstrated to achieve VMT reductions.
- **VMT Bank:** The administering agency would identify VMT reduction strategies and calculate the monetary value of achieving a unit of VMT reduction "credit" using those strategies, and project applicants would purchase the number of credits necessary to offset the project's VMT impact.
- **VMT In-Lieu Fee Program:** Project applicants would pay a fee towards one or more VMT reduction strategies based on the lead agency's finding of a reasonable relationship between VMT reductions and the enhancement of the public welfare. Court decisions have indicated that

in-lieu fee programs may not be subject to the strict nexus requirements found in the Mitigation Fee Act; at the same time, with a lower level of rigor applied to the nexus determinations, an in-lieu fee program standing alone may not satisfy the CEQA requirements for substantial evidence.

This study is agnostic about the various program structure options and has been focused on evaluating a range of options based on stakeholder input and designing a program framework that seems to best serve the local context and needs in Contra Costa.

Evaluation Criteria

In conjunction with the Project Advisory Committee, a set of evaluation criteria were developed that express the local priorities for the program. As program options were identified and discussed, the options were compared against these criteria to gauge the level of alignment with local priorities.

1. **Legal Foundation:** Does the program meet statutory requirements established under CEQA and other relevant state laws?
2. **Agency Oversight & Funding:** Which entity would manage the program and how would the program administration be funded?
3. **Geography & Scale:** Could the program be applied at multiple geographic scales? How would the location of VMT impacts relate to the location of mitigations?
4. **Applicability:** To what types of projects would the program apply, and what types of mitigations would it support? Would the program promote equitable outcomes for members of underserved communities?
5. **Data Analysis & Monitoring:** Would the program establish a standardized approach to evaluating VMT impacts and reductions, and have clearly defined methods for ongoing data collection and monitoring?
6. **Program Risk Management:** Is the program clear and easy to understand, and does it result in predictable and affordable results?

Potential VMT Reduction Strategies

The purpose of a VMT mitigation program is to fund a set of off-site VMT reduction strategies (meaning strategies that occur on a broader scale than a single development site) that can be demonstrated to lessen the VMT impacts of projects that participate in the program. This study investigated a wide range of off-site VMT reduction strategies that might be suitable for inclusion in the Contra Costa VMT mitigation program, and looked at the costs of implementation, the estimated effects on VMT, and resulting calculations of cost effectiveness.

Because the purpose of this program would be to help projects comply with CEQA requirements, and because CEQA requires that substantial evidence be provided to support findings, particular emphasis was placed on strategies for which there is a substantive body of evidence about their effects. At the same time, VMT mitigation programs are extremely new and the literature about the VMT effects of different policies and actions is evolving rapidly; therefore, it will be important that the program be flexible and able to adapt as our knowledge about VMT changes.

To move in the direction of a program that satisfies CEQA expectations, this study explored several categories of potential VMT-reducing strategies that are supported by substantive evidence:

- **Infrastructure Strategies**
  - Improvements to the pedestrian or bikeway networks
- **Programmatic Strategies**
  - Trip reduction programs offering travel information and incentives to encourage people to choose low-VMT options
  - Carshare programs
  - Bikeshare programs
- **Transit Service Strategies**
  - Extending transit routes or hours of service
  - Increasing transit frequency or offering Bus Rapid Transit service
- **Pricing Strategies**
  - Pricing on-street parking
  - Reducing transit fares

In addition, the study explored several emerging **land use-related strategies** that show promise for VMT reduction but that do not yet have a body of research speaking to their effects, such as financial incentives to facilitate infill development and rental or mortgage assistance allowing people to live closer to their workplaces. While the initial mitigation program will focus on strategies with more robust existing data, the project stakeholders supported continued exploration of these and other land use strategies to develop more quantitative information about the potential for substantive effects on VMT.

Considering the general categories of VMT-reduction strategies described above, the study identified a number of specific implementation ideas for Contra Costa, along with estimates of the costs and the VMT reductions that could be associated with each one. These specific strategies included, among others, things like closing gaps along the Bay Trail, implementing Complete Streets improvements along major corridors such as Bailey Road, instituting bus shuttle services through downtown Concord or Bishop Ranch, implementing a countywide carshare or e-bikeshare program, and deploying a countywide Mobility on Demand (MOD) app that provides real-time trip planning and payment processes and incentives for the use of more efficient modes.

As shown in **Table ES-1**, the locally-specific strategies explored here exhibit a very wide range of cost-effectiveness, expressed as the total cost to implement the strategy for a 10-year period compared to the total amount of VMT reduced over that same period. This result indicates that the local context matters a great deal when implementing VMT reduction strategies, and that it can be challenging to develop uniform assumptions about costs or VMT effects that could apply consistently across the entire county, even within a particular category of strategies.

Table ES-1: Ranges of Cost Effectiveness for VMT Reduction Strategies in Contra Costa

Category	Estimated Cost per Total VMT Reduced over 10 years
Infrastructure Strategies: Improvements on bike and pedestrian facilities	$60 - $225
Programmatic Strategies: Carshare or e-bike share programs, MOD app	$0.07 - $3
Transit Service Strategies: Extend transit hours or routes, increase frequencies	$1 - $25
Pricing Strategies: Parking pricing, transit fare reductions	Up to $0.50
Land Use Strategies: Subsidies for workforce housing	$1 - $2

Development Costs and Test Cases

A VMT mitigation program will impose new costs on projects that trigger a significant VMT impact. As expressed in the evaluation criteria, the stakeholders were interested to learn more about the effects that those additional costs might have on the financial structure of the projects that would pay into the mitigation program. To explore those questions, the consultant team evaluated the overall development costs of several general categories of land development projects, and explored questions about whether additional costs could be absorbed while still achieving typically acceptable levels of investment returns.

Current development cost scenarios were investigated for several general categories of development: single-family residential, multi-family residential, office, and light industrial. Under current cost conditions, there appears to be limited potential for typical office or multi-family residential projects to absorb additional costs, as these development categories already experience challenging financial scenarios under current market conditions. The single-family residential and light industrial categories appear to have more potential for absorbing additional costs while still achieving the level of investment return that is typically considered feasible for project financing. More specifically, the analysis looked at scenarios where the additional cost associated with VMT mitigation ranged up to $5,000 per single-family unit or up to $4 per square foot for light industrial uses, and concluded that mitigation costs of that magnitude could generally be accommodated.

In light of those findings, two hypothetical test cases were developed, one as a prototypical single-family residential project and the other as a prototypical light industrial project. The VMT impacts of each project were calculated based on its location and size characteristics, and a variety of VMT reducing strategies were considered that could mitigate those impacts. Under a scenario where the lowest-cost VMT strategies were applied, the cost to fully mitigate each project's VMT impacts was calculated at $2,000 per unit for the prototypical single-family residential project and $5 per square foot for the prototypical light industrial project. Applying higher-cost VMT strategies would naturally result in higher mitigation costs for each of the test cases. Thus, if the objective were to achieve full mitigation for these prototypical development projects and to keep the mitigation cost generally within the magnitude of costs that were found to be absorbable under current market conditions, the mitigation strategies selected would need to be highly cost-effective.

Next Steps

As a first step toward a countywide VMT mitigation program, CCTA could establish a targeted pilot program that would allow for ongoing monitoring, testing, and refinement over time. CCTA has expressed interest in establishing a pilot program focused on countywide implementation and refinement of the Mobility On Demand (MOD) app. Reasons for the initial focus on the MOD app are that it is a CCTA priority program that can be rolled out relatively quickly, it is one of the most cost-effective of the strategies explored in this study, the geographic scale at which it functions can be adjusted with relative ease, and it will generate data about how travel incentives affect VMT under a variety of local circumstances which can then be used to refine the mitigation program and to provide evidence to support CEQA findings.

The pilot program would be voluntary and would function as something of a hybrid of an exchange and an in-lieu fee program, in which local lead agencies and/or individual project sponsors could choose to participate as a means of lessening a project's VMT impacts. The program would be administered by CCTA and overseen by an Advisory Committee, made up of representatives from participating jurisdictions and interested stakeholders.

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VMT Mitigation Framework for Contra Costa

Planning Committee Presentation

April 6, 2023

Outline

- Project Background
- Stakeholder Engagement
- Program Options
- Next Steps

Project Background

Objectives of Study

1) Develop an approach for mitigating VMT impacts from land development and transportation projects in Contra Costa

2) Develop a framework for a VMT Mitigation Program and determine whether an Impact Fee, Mitigation Bank, or Exchange would be most appropriate

3) Help local agencies comply with CEQA changes under SB 743

Timeline

- 2018-2019: CCTA member jurisdictions support a regional solution for VMT mitigation
- 2020: Regional VMT mitigation program included in TEP
- 2020: Study funded through Caltrans Sustainable Communities Transportation Planning Grant
- 2021: Consultant team selected
- 2021-2023: Stakeholder engagement and study completed

Key Issues

KEY QUESTIONS IN DEVELOPING A VMT MITIGATION FRAMEWORK

In the process of developing the VMT Mitigation Framework, we'll need to ask some important questions:

AGENCY OVERSIGHT & FUNDING

- Who pays who?
- Who administers?
- Who delivers the mitigation action?

PROGRAM CRITERIA & EFFICACY

- What types of mitigation actions can be funded?
- What are the equity goals and priorities of the program?
- How will the costs of VMT mitigation affect development feasibility?

DURATION

- For how long must the project applicant participate?

GEOGRAPHY

- What is the right scale for a program?
- How do we ensure equitable distribution of mitigation actions/funds?

LEGALITY

- What is the CEQA mitigation potential?

MONITORING & DATA NEEDS

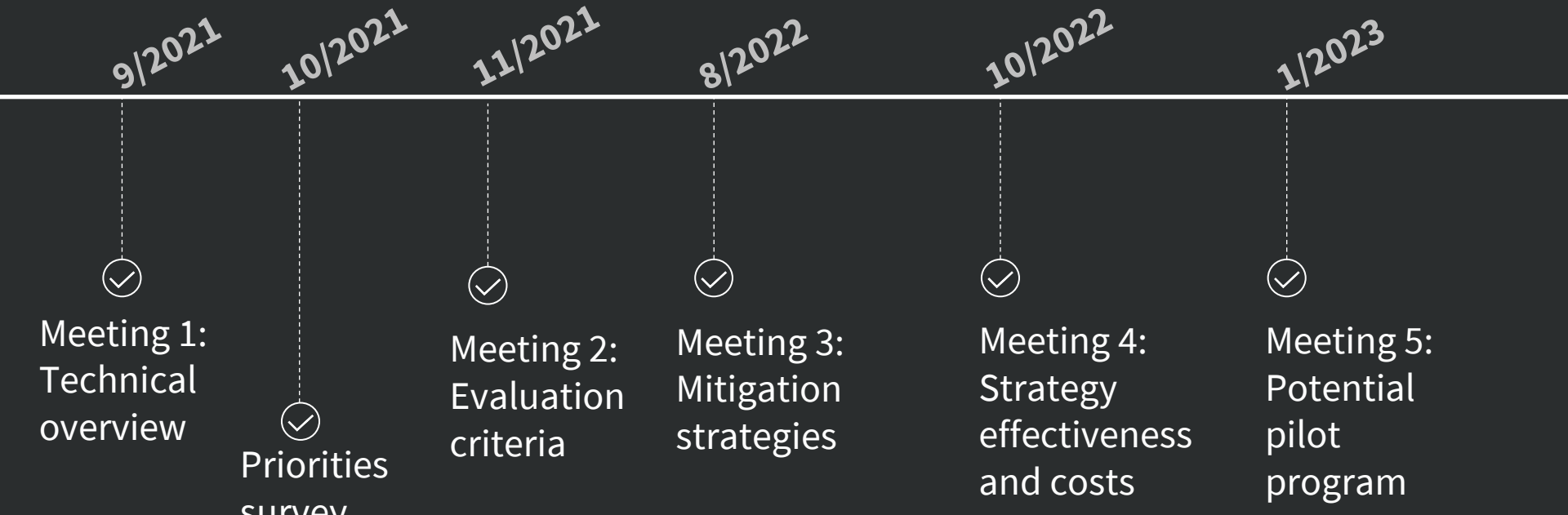
- What is being evaluated?
- Who evaluates the mitigation action?
- How frequently does evaluation/ re-valuation occur?

Stakeholder Engagement

Project Advisory Committee

- Representatives of local jurisdictions, transit operators, state and regional transportation agencies, business and development community, environmental organizations
- Provide input about their priorities for a VMT mitigation program
- Spread awareness of the program in communities across Contra Costa County

PAC Engagement



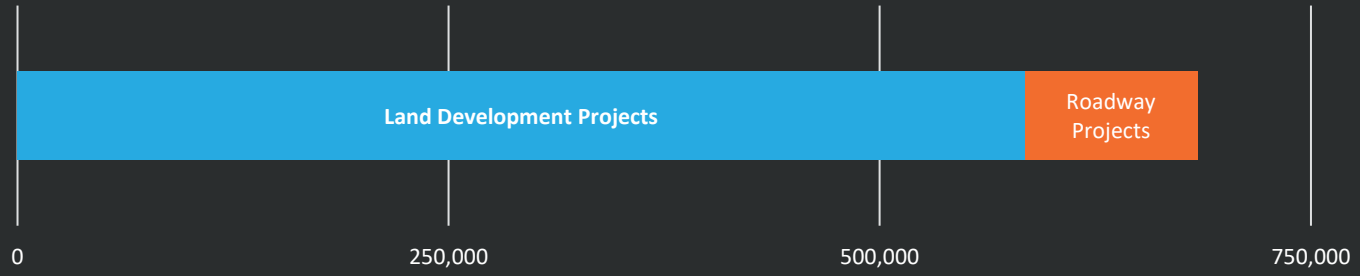
Input from Development Community

- Interested in VMT mitigation strategies that directly benefit their customers
- Concerned about current market volatility: interest rates, continued uncertainties about customer preferences post-pandemic, regulatory changes
- Interested in VMT mitigation program if costs were reasonable and if participation resulted in streamlined CEQA procedures

Program Considerations

Projected Countywide VMT Growth above CEQA Threshold

- Land use projects: *~580,000 daily VMT above CEQA threshold over next ten years*
- Transportation projects: *~100,000 daily VMT above CEQA threshold over next ten years*



For context, total countywide VMT is currently estimated at ~47 million.

Program Evaluation Criteria

- Legal foundation
- Agency oversight and administration
- Geography and scale
- Applicability and effectiveness
- Data analysis and monitoring
- Risk management

Priorities from PAC

- Countywide program, led by CCTA
- Include strategies with demonstrated VMT reduction benefits
- Could be structured as a bank, exchange, or fee program
- Ideally would allow most projects to fully mitigate their VMT impacts
- Would have predictable and reasonable costs

Possible Mitigation Strategies

Infrastructure strategies

- Improve bicycle and pedestrian facilities

Programmatic strategies

- Countywide carshare or eBike-share program
- Mobility On Demand app

Transit service strategies

- Increase frequencies, extend hours, offer new routes

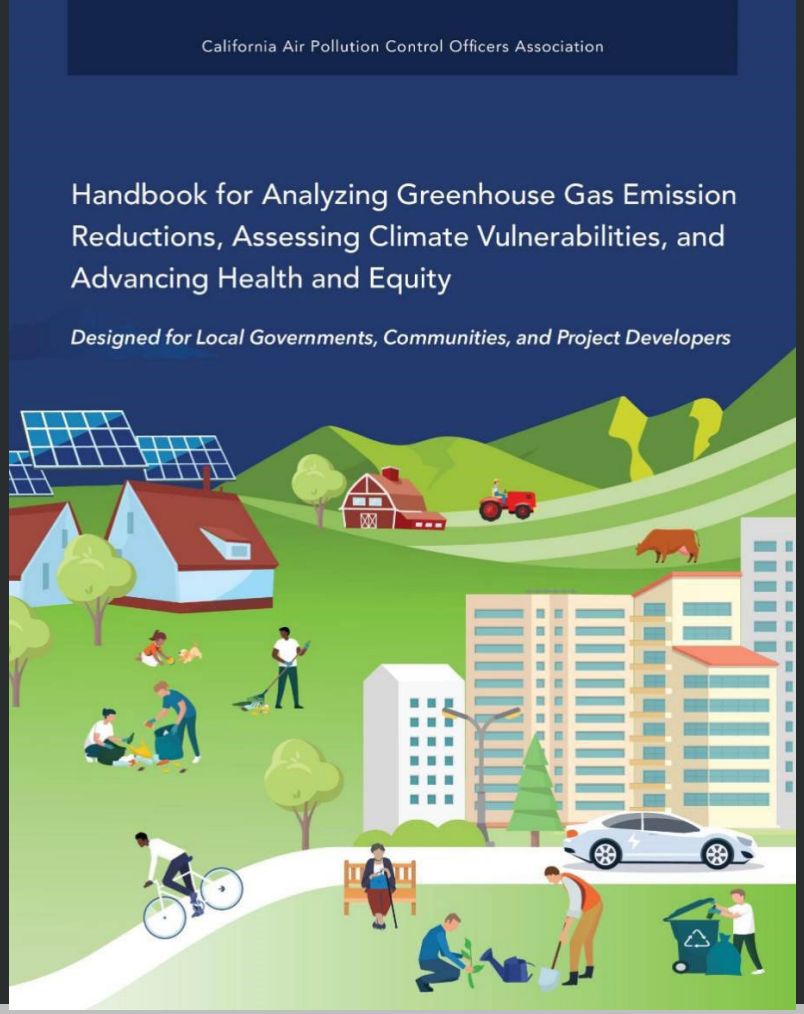
Pricing strategies

- Parking pricing, transit fare reductions

Land use strategies

- Workforce housing subsidies

VMT Reduction Effects



Cost Effectiveness

Category	Estimated Cost per Total VMT Reduced over 10 years
Infrastructure Strategies: Improvements on bike and pedestrian facilities	$60 - $225
Programmatic Strategies: Carshare or e-bike share programs, MOD app	$0.08 - $3
Transit Service Strategies: Extend transit hours or routes, increase frequencies	$1 - $25
Pricing Strategies: Parking pricing, transit fare reductions	$0.20 - $0.50
Land Use Strategies: Subsidies for workforce housing	$1 - $2

Test cases

If the mitigation cost was $0.10 per VMT reduced, then the cost to fully mitigate a project's VMT impacts would be:

Example single-family residential project

Approximately $2,000 per house

Example light industrial/warehouse project

Approximately $5 per square foot

Next Steps

Key considerations for CCTA

- Voluntary program that CCTA could administer
- Program that could be ramped up quickly
- Keep costs relatively low to start
- Collect data on VMT and costs that could help with future program refinements

Countywide Pilot Program

Structure

- Administered by CCTA, with support from an advisory committee
- Optional participation by lead agencies within Contra Costa County

Implementation

- Fund implementation of the Mobility on Demand (MOD) app to provide streamlined trip planning and payment for non-SOV travel and incentives for shifting from SOV to non-SOV modes
- CCTA to provide regular reporting about funds collected and expended, metrics about VMT reductions and other effects

Mobility on Demand app

- App-based, real-time, multimodal trip planning
- Provides incentives for using low-VMT/low-GHG travel modes
- Relatively low cost (approximately $0.10 per VMT reduced over 10 years)
- Pilot would include data collection, performance monitoring to develop Contra Costa-specific effectiveness and costs

Questions?

Thank you!