

VMT Mitigation Program Pilot Project

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Introduction

The Southern California Association of Governments (SCAG), in partnership with the City of Los Angeles Department of Transportation (LADOT) and LA Metro, is leading a groundbreaking effort to establish a VMT mitigation program framework and pilot project for the region. This report is the culmination of the first step in that effort. It identifies a series of key program criteria for the development of a multi-agency VMT mitigation program and outlines the efficacy and next steps for the roll-out of a pilot mitigation action.

The report is organized into five chapters:

- **Introduction** – provides an overview of the study background, VMT mitigation program alternatives, and outcomes from this study.
- **Study Participants and Partners** – describes the establishment and participation in the project Technical Advisory Committee (TAC), including key discussion topics, as well as a description of the key roles of project partners in this initial effort.
- **VMT Mitigation Program Framework** – describes the specific program types and key policy questions that were identified and investigated through this initial effort; documents the discussion and progress that has been made toward resolving these questions; and articulates key areas for further exploration (summarized in **Table 1**).
- **U-Pass as a Pilot Mitigation Action** – describes the potential for LA Metro’s U-Pass Program to be an early mitigation action that could be implemented quickly through the establishment of a multi-agency VMT mitigation program.
- **Next Steps** – describes key areas of focus for follow-up efforts in developing a multi-agency VMT mitigation program for Southern California.

Key terms used throughout this report:

- **VMT:** Vehicle Miles Traveled
- **Mitigation Program:** The overarching policy framework that exists to provide off-site mitigation options for the purpose of mitigating VMT impacts
- **Mitigation Action:** Individual VMT-reducing actions, including capital improvement projects, programs, services, or operational efforts that are delivered through a mitigation program
- **Project Applicant:** Entities working through the CEQA process for a development or transportation project that requires VMT mitigation

Study Background

With the passage of SB 743 and adoption of VMT as the preferred CEQA transportation impact metric¹, project applicants that have identified significant VMT impacts are required to mitigate them to the fullest extent feasible. Mitigation options for project applicants typically include:

- **On-site mitigation:** This typically involves physical design changes and Transportation Demand Management (TDM) strategies designed to reduce personal vehicle travel and encourage more sustainable modes of transportation. Most on-site mitigation strategies are highly dependent on who will occupy the building, 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.
- **Off-site mitigation:** Off-site mitigation options can be provided through VMT mitigation programs. A "programmatic" approach to VMT mitigation expands the feasible VMT mitigation options to include off-site strategies that can extend from the project site neighborhood to a regional scale. These strategies may take the form of infrastructure expansion, such as new transit and bicycle facilities, or programs and services that influence travel demand or mode choice.

The establishment of such a VMT mitigation program is a high priority for California jurisdictions seeking effective mitigation approaches as lead agencies and project applicants work through the initial years of the transition to a VMT metric. Through this effort, SCAG has taken the lead on exploring the possibility of a multi-agency VMT mitigation program in Southern California.

While the establishment of a locally based VMT mitigation program may be the preferred option for some jurisdictions, SCAG's focus on development of a multi-agency VMT mitigation program stems from the following potential benefits:

- **Ability to fund large, regional projects:** A multi-agency VMT mitigation program would allow for large-scale projects, programs, and services that could make a more significant impact on VMT reduction as compared to smaller, more localized mitigation actions.
- **Steer investments into historically underserved communities:** A coordinated, multi-agency approach to VMT mitigation action development would allow for strategic investment in historically underserved communities throughout the region.

¹ In response to growing concerns about the consequences of climate change, and the significant role of vehicle miles traveled (VMT) in the generation of greenhouse gas (GHG) emissions, the California State legislature passed Senate Bill 743 (SB 743) in 2013. SB 743 required the adoption of a new methodology to replace motor vehicle delay, measured by level of service (LOS), for evaluating transportation impacts under the California Environmental Quality Act (CEQA) review process. The new methodology must serve to reduce GHG emissions, facilitate development of compact, transit-oriented communities, and encourage development of bicycle and pedestrian facilities and improvements. The governor's Office of Planning and Research (OPR) was tasked with identifying an alternative transportation impact methodology that best meets the criteria of SB 743. In 2017, OPR selected VMT as the preferred CEQA transportation impact metric.



- **Regional coordination on analytical methods:** A multi-agency VMT mitigation program has the co-benefit of establishing a coordinated, consistent analytical approach for VMT management throughout the region.

Individual jurisdiction interest in participating in a multi-agency VMT mitigation program will depend on each jurisdiction's interest in regional solutions to mitigating VMT and promoting more regional, equitable mobility.

VMT Mitigation Program Alternatives

The three multi-agency VMT mitigation program alternatives considered throughout this study are:

- **VMT Impact Fees** allow a project applicant to pay a fee toward the cost of a set of mitigation actions that are sufficient to mitigate VMT impacts.
- **VMT Exchanges** require a project applicant to fund and/or implement a mitigation action selected from a pre-qualified list or to propose and fund a new one.
- **VMT Banks** create a monetary value on VMT reduction such that a project applicant could purchase a commensurate number of VMT reduction credits.

The nuances of these three alternatives are summarized in the factsheet included as **Appendix A** and discussed in detail throughout the report. However, the recommended program criteria established through this effort are agnostic of the chosen alternative and are designed to help SCAG choose the strongest alternative for the region. The final program design for the multi-agency VMT mitigation program may draw inspiration from each of the three options, based on the preferences of participating stakeholders and the determination about the policy choices identified in this report. Therefore, rather than framing this process as a selection of one of the three, this process is more about designing a program framework that is both legally compliant and meets the needs of diverse stakeholders across a region that experiences substantial variation in land use development context, VMT generation and mitigation needs, and capacity to implement a new regional policy tool. **Table 1** summarizes the key program recommendations for a multi-agency VMT mitigation program identified through this study.

Table 1: Recommendations for a Multi-Agency VMT Mitigation Program

Topic	#	Recommendation
Geography & Scale	1	Tiered mitigation boundaries: The multi-agency VMT mitigation program selected should have the capacity to balance local impacts and regional needs. A tiered approach to identifying mitigation actions for project applicants will ensure that actions closest to the project site are funded first, expanding outwards only when all local options have been exhausted, or on a case-by-case basis depending on the lead agency's preference. This tiered approach, paired with a robust list of mitigation action criteria, will balance local preference with regional equity and mobility needs.
	2	Scalable program design: The VMT mitigation program should be designed to allow for expansion as additional local jurisdictions express interest in participation, regional and state agencies solidify their preferred role in administration, and demand for program-level mitigation grows. At a minimum, the VMT mitigation program framework should allow for a streamlined process for jurisdictions to participate, including a standardized process for adding to the mitigation action list on a rolling basis.
Agency Oversight & Funding	3	Selection of an administering agency: The multi-agency VMT mitigation program should be administered by a regional or sub-regional entity. The agency selected to administer the mitigation program should have dedicated staff, the ability to collect fees and issue funds, and geographic boundaries that include all participating jurisdictions. Agencies that may be appropriate to administer a multi-agency VMT mitigation program include sub-regional Councils of Governments, County Transportation Commissions (LA Metro), SCAG, Caltrans, SCAQMD, or CARB.
	4	Transparency and accountability: The multi-agency VMT mitigation program must include measures to ensure transparency and accountability of the agency chosen to administer the program. This could be through required regular reporting or third-party oversight.
	5	Dedicated funding source: The VMT mitigation program and fee schedule development should include associated fees for recuperating administrative costs. These fees should not exceed the specific administrative costs required to operate the program.
Mitigation Action Selection	6	Maximize flexibility: It will take a holistic approach to curbing VMT in the region, inclusive of large-scale capital projects, programmatic solutions, and operational improvements. The multi-agency VMT mitigation program provides flexibility in the types of mitigation actions that can be funded through the program.
	7	Robust list of mitigation action criteria: The multi-agency VMT mitigation program should explain how to select and prioritize mitigation actions for funding and implementation. Mitigation actions should be evaluated based on their VMT reduction potential, ability to clear the additionality test, equity implications, region mobility benefits, cost effectiveness, and marketing approach. Evaluation metrics should be chosen carefully and in partnership with currently under-resourced communities and should be simple and methodical to limit the administrative and technical requirements of approving mitigation actions.
Data Analysis & Monitoring	8	Standardized analysis: VMT estimating, forecasting, and analysis is continuing to evolve and slight variations in methodologies across jurisdictions can produce different outcomes. Several stakeholders elevated the importance of adopting a standardized approach to analyzing VMT impacts of projects and VMT benefits of mitigation actions to provide consistency across the region and minimize confusion amongst jurisdictions and project applicants. This expectation will need to be balanced against the importance of accuracy in evaluating mitigation effectiveness for CEQA purposes.



Table 1: Recommendations for a Multi-Agency VMT Mitigation Program

Topic	#	Recommendation
	9	<p>Monitoring program: CEQA requires mitigation monitoring as noted in CEQA Guidelines §15097. Monitoring is also essential for the long-term success of a multi-agency VMT mitigation program. At a minimum, the multi-agency VMT mitigation program should include a framework for on-going monitoring that covers full program performance. Monitoring of individual actions may also be required pending further research and investigation but is likely for mitigation programs. The frequency of evaluation should be sufficient to meet legal compliance requirements so that appropriate expectations can be set and met for staff capacity and resource allocation at agencies responsible for monitoring.</p>
	10	<p>Data collection: Data collection must be a foundation of the multi-agency VMT mitigation program, with a data collection framework that requires participation by those implementing the mitigation actions and by participating jurisdictions. The framework should include a data specification outline to ensure consistency across all mitigation actions and address any data privacy, availability, and ownership concerns. Depending on the final program structure, different levels of data collection may be required, with lower requirements for a fee program and higher requirements for a bank or exchange model.</p>
Regulatory Framework	11	<p>Legal compliance: The VMT mitigation program must be compliant with all applicable statutes, regulations, and case law.</p>
Program Risk Reduction	12	<p>Program Legibility: The VMT mitigation program should be designed to be intelligible and intuitive to project applicants. Analyses should be standardized and automated, when possible, and when it would not compromise accuracy.</p>
	13	<p>Cost Certainty: The VMT mitigation program should offer certainty in costs to project applicants while also being sensitive to how mitigation costs can affect development feasibility in the region.</p>
	14	<p>Mitigation ratios: A mitigation ratio (the mitigation requirement compared to the analyzed impact) greater than 1:1 should be adopted to reflect the uncertainty in VMT reduction potential of mitigation actions. As more data on the efficacy of specific mitigation actions become available and reliable VMT reduction potential estimates can be established with greater certainty, mitigation ratios can be revisited and adjusted accordingly.</p>

Study Participants and Partners

Stakeholder engagement for this study primarily consisted of the formation and convening of a project Technical Advisory Committee (TAC). In this exploratory stage of program development, TAC participation was primarily focused on potential state, regional, and local partners. The TAC included representatives from sub-regional councils of government as the primary means to reflect input from local jurisdictions, and the development community was engaged through the participation of several land use attorneys representing private developers. Additional outreach to jurisdictions, developers, non-profit organizations, community advocacy groups, and members of the public will be a focus point of engagement in future phases of this work.

Technical Advisory Committee

The purpose of the TAC was to inform and seek feedback from key stakeholders on the opportunities, challenges, feasibility, and overall interest in the establishment of a multi-agency VMT mitigation program, specifically one that could function at a regional level. Members of the TAC met three times throughout the course of the study:

- **Introduction to the Project:** The first meeting was held virtually in January 2021 and was aimed at informing TAC members of the purpose and scope of the study, as well as hearing from the TAC on their insights and interest in a multi-agency VMT mitigation program and key considerations.
- **Small Group Meetings:** Three topical meetings were held virtually in February 2021 to further discuss program details and considerations from the perspective of state agencies (meeting #1), land use and development (meeting #2), and sub-regional councils of governments (meeting #3).
- **Program Criteria and the LA Metro U-Pass Program:** The second meeting was held virtually in June 2021 to provide an update to the TAC on the development of program criteria for the mitigation program and information about the U-Pass program as a potential early mitigation action option.

TAC Members

The TAC was comprised of key stakeholders from state agencies, regional partners, councils of governments, local jurisdictions, and land use and development experts:

- **State agencies:** Representatives from the California Air Resources Board (CARB), Caltrans, and the governor's Office of Planning and Research (OPR) were invited to share their perspectives on large-scale mitigation programs, including lessons learned from other programs such as Cap-and-Trade, the state's interest in administering a VMT mitigation program, and ensuring CEQA compliance.



- **Regional partners:** Representatives from Southern California Association of Governments (SCAG) and LA Metro were included in TAC meetings to provide insight on SCAG’s potential role as an administrator, regional coordination, and the potential for LA Metro to deliver the first regional mitigation action as a pilot program.
- **Councils of Governments (COGs):** Representatives from the Gateway Cities, San Fernando Valley, San Gabriel Valley, South Bay Cities, and Westside Cities COGs were included to provide insight to mitigation needs and initiatives occurring at the sub-regional level and the desired role of COGs in a multi-agency VMT mitigation program.
- **Local Jurisdictions:** Representatives from key departments within the City of Los Angeles and Pasadena were included in the TAC to provide insight on local jurisdictional interest in local or multi-agency VMT mitigation programs.
- **Land Use & Development:** Representatives from the land use and development industry, primarily land use attorneys, were encouraged to share their client’s key interests and concerns in mitigation programs as well as provide guidance on CEQA compliance and lessons learned from mitigation strategies in other CEQA topic areas.

Table 2 includes the full list of TAC participants.

Table 2: Technical Advisory Committee Members

Stakeholder Type	Organization/Agency	Representatives
State Agency	Air Resources Board (ARB)	Jennifer Gress, Heather King, Lana Wong
State Agency	Caltrans	Alyssa Begley, Eric Sundquist
State Agency	Office of Planning and Research (OPR)	Chris Ganson
Regional Partner	South Coast Air Quality Management District (AQMD)	Elliott Popel, Lane Garcia, Laurence Brown
Regional Partner	Southern California Association of Governments (SCAG)	Michael Gainor, Rongsheng Luo, Annie Nam, Jenna Hornstock, Sarah Jepson
Regional Partner	LA Metro	Avital Shavit, Mark Yamarone, Jocelyn Feliciano, Paul Backstrom Julio Perucho, Devon Deming
Council of Governments	Gateway Cities COG	Nancy Pfeffer, Karen Heit, Melani Smith
Council of Governments	San Fernando Valley COG	John Bwairie
Council of Governments	San Gabriel Valley COG	Eric Shen
Council of Governments	South Bay Cities COG	Steve Lantz
Council of Governments	Westside Cities COG	Riley O'Brien
Local Jurisdiction	City of Pasadena	Laura Cornejo, Conrad Viana

Table 2: Technical Advisory Committee Members

Stakeholder Type	Organization/Agency	Representatives
Local Jurisdiction	LA City Attorney's Office	Kathryn Phelan
Local Jurisdiction	LA City Planning	Jason Mccrea, Milena Zasadzien, Kathleen King, John Bellas, Laura Krawczyk
Local Jurisdiction	LA County Public Works	Kent Tsuji, Jeff Pleytak
Local Jurisdiction	LA Mayor's Office	Nick Maricich
Local Jurisdiction	Los Angeles Department of Transportation (LADOT)	Alexander Wikstrom, Kay Sasaki, David Somers, Tomas Carranza, Jay Kim, Rubina Ghazarian
Land Use & Development	CAJA Environmental Services	Chris Joseph
Land Use & Development	Civic Enterprise / Council of Infill Builders	Mott Smith
Land Use & Development	Valley Industry Commerce Association (VICA)	David Goldberg, Neill Brower
Land Use & Development	Cascadia Partners	Robert Liberty
Land Use & Development	Gibson Transportation	Sean Mohn
Non-Profit	Climate Resolve	Bryn Lindblad
Non-Profit	Move LA	Eli Lipmen

Key Discussion Topics

Each TAC meeting included robust conversation on the key considerations that should be carried forward in the development of a multi-agency VMT mitigation program. Key themes across all stakeholder groups included:

- **Promoting equity:** All stakeholders agreed on the importance of creating a multi-agency mitigation program that serves and uplifts the transportation and mobility needs of under-resourced communities as a key priority.
- **Local preference:** Several stakeholders elevated the importance of ensuring that off-site mitigation occur in close proximity to the project site and ideally within the local jurisdiction of the project. If a multi-agency program is developed, it would need to offer mitigation close to where development projects are occurring.
- **Cost to developers:** Several stakeholders discussed the importance of coordinating with developers when establishing the program to ensure that the program does not hinder development, especially coming out of the COVID-19 pandemic and during a time of severe need



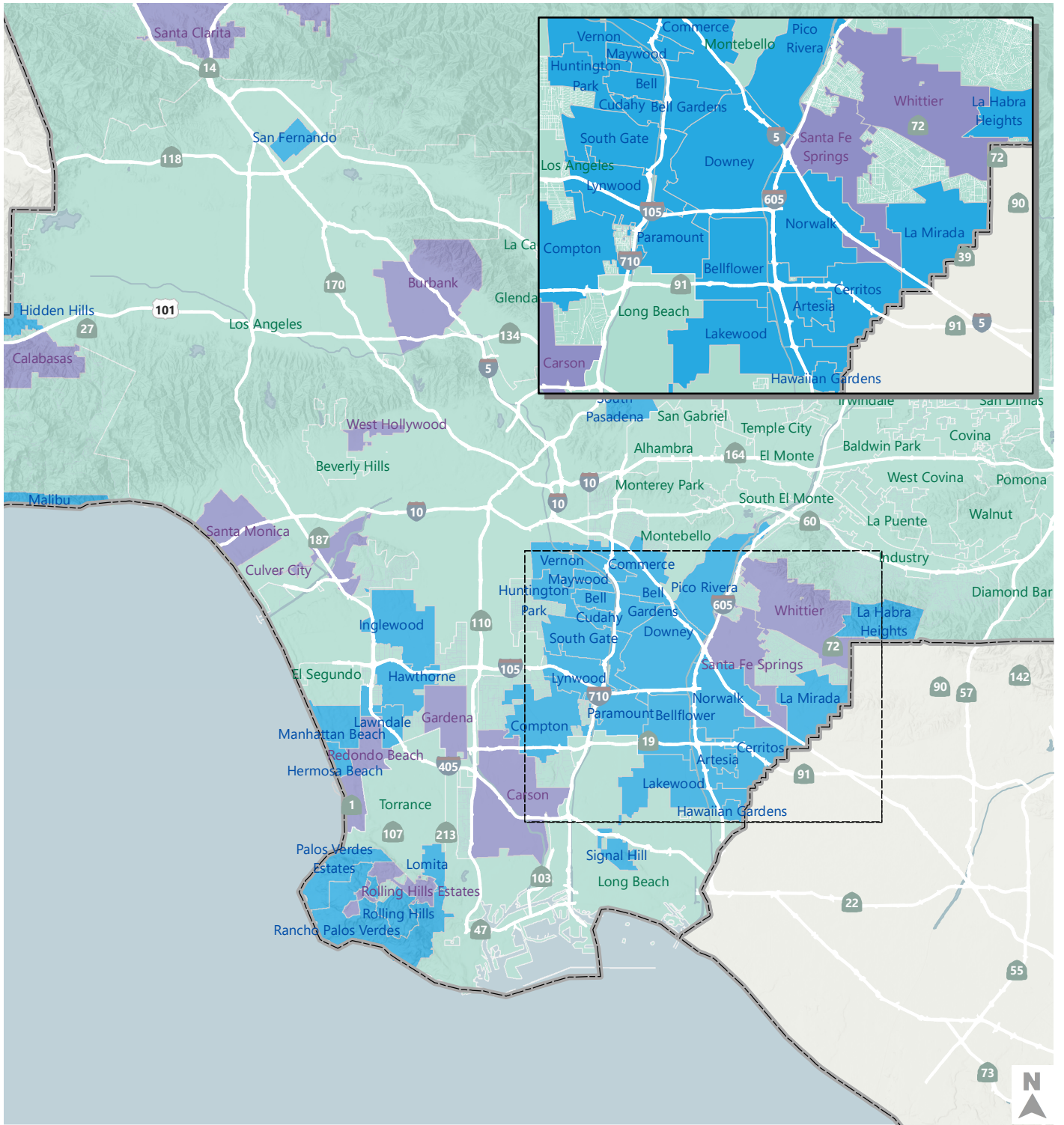
for housing in the state. Stakeholders also emphasized the importance of creating a cost structure that is predictable and consistent over time.

Appendix B includes the full meeting summaries for each TAC meeting.

Project Partners

The following project partners were identified for the pilot program and next phases of work:

- **Southern California Association of Governments:** As the lead for this study and the regional metropolitan planning organization (MPO), SCAG will continue to play a significant role in the coordination and facilitation of a multi-agency VMT mitigation program.
- **Los Angeles Department of Transportation:** As the largest city in the SCAG region, with a Year 2029 Regional Housing Needs Assessment (RHNA) allocation of over 450,000 units, the City of Los Angeles will be a key player in regional VMT mitigation by necessity. LADOT is an active partner in this study and is interested in leading the implementation of a pilot program with LA Metro.
- **LA Metro:** LA Metro is a committed partner in creating a pilot program, deploying their student transit pass program (U-Pass) as the first multi-agency mitigation action. LA Metro itself may also have projects that require VMT impact mitigation in the future, which could benefit from the availability of the U-Pass program as a mitigation action.
- **Local jurisdictions:** Other partner jurisdictions will need to be identified during the rollout of the pilot VMT mitigation program to be able to properly evaluate the success of the pilot. Local partners will likely include jurisdictions that have established and adopted SB 743 guidelines and have identified a need for more mitigation options but have not yet established a mitigation program. **Figure 1** shows the local jurisdictions in Los Angeles County (LA Metro's service area) that have adopted SB 743 guidelines and may be potential partners in the development of a multi-agency mitigation program.



SB 743 Guideline Adoption by City County Boundaries

- Adopted
- In Progress
- None

Figure 1
SB 743 Adoption in Los Angeles County



VMT Mitigation Program Framework

This chapter introduces the recommended program framework for a local or multi-agency VMT mitigation program in the SCAG region, developed through the perspectives of geography and scale, agency oversight and funding, mitigation action selection, data analysis and monitoring requirements, regulatory framework, and program risk reduction. The program framework presented in this chapter is intended to inform initial thinking on the design of the pilot VMT mitigation program based on a review of available literature and precedent examples, as well as key stakeholder needs and preferences. Each topic area includes:

- **Discussion:** Primary outcomes and key points of discussion from conversations with the TAC, SCAG, and LADOT, and from the literature review, are summarized for each of the six topic areas that comprise the framework. A more detailed overview of the literature review, including a list of the resources reviewed and a comprehensive summary of findings, is included in **Appendix C**.
- **Program Recommendations:** Recommendations for each topic area are presented as preliminary program criteria for the multi-agency VMT mitigation program. At this stage in program development, not all elements of the framework can be clearly defined as program criteria. Items where further exploration is necessary are included as outstanding questions.
- **Areas of Further Exploration:** Outstanding topics and questions to be explored during later phases of work are summarized and presented for each topic.

A note about equity: Equity was a key theme in all discussions throughout this effort. This VMT mitigation program framework addresses equity explicitly in several topic areas and applies equity as an integrated theme within all topic areas. Developing a program that advances the mobility of, and recognizes the historic disinvestment in, under-resourced communities, had unanimous support among stakeholders and is a priority for both SCAG and LADOT. Ensuring accountability and transparency in administration, establishing equity-driven mitigation action criteria, balancing local impacts with regional needs, and applying thorough data collection and program monitoring methodologies are all viewed as critical components to ensure the multi-agency VMT mitigation program produces equitable outcomes for the region.

Geography & Scale

Geography and scale of the multi-agency mitigation program refers to its geographic boundaries, allowable distance between projects with mitigation obligations and mitigation actions, and the scalability of the program as interest in the program increases. Through stakeholder engagement and the literature review, this study sought to find answers to:

- **Balancing regional needs and local priorities and concerns:** How does the multi-agency program address local priorities?
- **Scalability:** How does the program adapt as demand for VMT mitigation grows?

Discussion

Regional Needs and Local Interests

One of the benefits of a multi-agency VMT mitigation program is the ability to implement mitigation actions at a regional scale that have the greatest potential to significantly reduce VMT. However, the need to establish regional solutions must be balanced with a recognition that local communities may bear other burdens created by the project. While a multi-agency program is best suited for those agencies that support regional mitigation actions, some concerns over addressing local impacts can be offset through program design.

Most CEQA mitigation, whether it is relative to watersheds, wetlands, or wildlife and habitat, focus on mitigating as close as possible to the project site. Similarly, some stakeholders have emphasized the need to establish boundaries for mitigation that ensure local communities closest to the project site directly benefit from the mitigation program. Given this, the mitigation program could include a tiered approach to mitigation boundaries, where mitigation actions closest to the project site are funded first. Only when the nearby mitigation options are exhausted does the VMT mitigation service area boundary expand.

The primary challenge to this approach is to ensure regional equity and mobility needs are balanced with local priorities, recognizing that there is often a mismatch between where development is occurring and communities with the highest need. This concern can be minimized by offering community stakeholders a voice in the process of establishing a robust set of mitigation action criteria that focuses on equity, as discussed in **Mitigation Action Selection**. Further, local jurisdictions can continue to leverage other opportunities, such as conditions of approvals and zoning exemptions, to negotiate the inclusion of local community benefits in project applications.

The geography of the tiers can be based on mileage from a project site, similar to the City of Los Angeles Park Fee program, as opposed to drawn political boundaries (e.g., council districts or city boundaries). Drawn political boundaries do not always align with neighborhood boundaries and can be at too large a scale to ensure that communities closest to the project site directly experience the benefits of VMT mitigation.

Scalability

A multi-agency mitigation program should be able to scale up if more local jurisdictions become interested in establishing mitigation options for projects in their jurisdiction. A successful mitigation program will need to be structured in a way that allows it to grow as demand for mitigation options increases. A VMT mitigation program may start at the local or sub-regional level with those jurisdictions who most immediately have the need for more options but should be designed with regional and state coordination in mind.



- **Local and sub-regional level:** While many local jurisdictions have adopted SB 743 guidelines, only two jurisdictions (City of Los Angeles and City of Orange) have established an off-site option for project applicants to mitigate CEQA VMT impacts. As local jurisdictions establish their preferred path forward, their interest in participating in a multi-agency VMT mitigation program should be considered.
- **Regional level:** Several agencies in the region are in the early stages of establishing VMT mitigation programs (e.g., LADOT, SGVCOG). SCAG has expressed an interest and desire in playing an oversight role in ensuring consistency in technical and legal rigor across programs and setting the foundation for potential consolidation and/or collaboration as more programs come online.
- **State level:** As VMT mitigation programs gain traction throughout the state and pilot programs come online, state agencies, such as Caltrans or CARB, may have increasing interest in administering a state-wide program. For example, a state program could allow local development projects to contribute to statewide VMT mitigation projects such as high-speed rail (HSR). With that in mind, a multi-agency program should be flexible enough to adapt and scale up over time.

The topic of scalability is covered in more detail in **Agency Oversight & Funding**.

Program Recommendations

Two geography and scale recommendations were identified through this study:

- **Tiered mitigation boundaries:** The multi-agency VMT mitigation program should have the capacity to balance local impacts and regional needs. A tiered approach to identifying mitigation actions for project applicants will ensure that actions closest to the project site are funded first, expanding outwards only when all local options have been exhausted or on a case-by-case basis depending on the lead agency's preference. This tiered approach, paired with a robust list of mitigation action criteria, will balance local preference with regional equity and mobility needs.
- **Scalable program design:** The VMT mitigation program should be designed to allow for expansion as additional local jurisdictions express interest in participation, regional and state agencies solidify their preferred role in administration, and demand for program-level mitigation grows. At a minimum, the VMT mitigation program framework should allow for a streamlined process for jurisdictions to participate, including a standardized process for adding to the mitigation action list on a rolling basis.

Areas of Further Exploration

Further phases of work should explore how to identify the proper geographic extents for mitigation. Significant stakeholder engagement, including with elected officials, will likely be necessary to identify the appropriate distance from a project to be considered a local mitigation action. Additional investigation into the legal and practical parameters of establishing a tiered approach will also be conducted.

Agency Oversight & Funding

Agency oversight and funding refers to the administrative requirements of operating a VMT mitigation program successfully and efficiently. Through stakeholder engagement and the literature review, this study sought to find answers to:

- **Administrator responsibilities:** What are the key responsibilities of an administrator for a VMT mitigation program?
- **Stakeholder participation:** How do program types align with local versus regional VMT mitigation interests? What are the roles and responsibilities for other key stakeholders, including councils of governments (COGs) and local jurisdictions, research institutions, advocacy organizations, and community groups?
- **Choosing the administrator:** What are the key considerations when choosing the mitigation program administrator?
- **Program funding:** How does a program administrator recuperate the staff and resources costs of their role?

Discussion

Administrator Responsibilities

The specific set of responsibilities of an administrator could include full program administration, demonstration of CEQA compliance and establishment of a nexus between VMT impact and mitigation action, mitigation action implementation, as well as data collection, analysis, and performance monitoring. Key considerations elevated by the literature review and stakeholder discussion included:

- Ensuring accountability and transparency
- Maintaining adequate staffing and resources for administration
- Aligned sphere of influence of the administrator
- Transfer of responsibilities if a larger regional or statewide agency came online

Given these considerations, two options were identified as viable structures for the program administrator role. **Table 3** introduces these two options and the precedent, benefits, and challenges of both.



Table 3: Administration Structure Options

	Option 1: Full Oversight	Option 2: Shared Oversight
Role	The administrator has full responsibility for program administration, development and maintenance of mitigation action list and costs, mitigation action selection, data collection, and program monitoring.	The administrator has full responsibility for program administration and shared responsibility for development and maintenance of mitigation action list and costs, mitigation action selection and implementation, data collection, and program monitoring.
Precedent	<ul style="list-style-type: none"> • Current transportation impact fee programs 	<ul style="list-style-type: none"> • California Cap-and-Trade Program • California Wildlife Conservation and Mitigation Banking
Benefits	<ul style="list-style-type: none"> • Efficiency: Having administration, implementation, and monitoring all performed by the same agency would likely be more efficient than separating these roles amongst parties. • Accountability: This option allows for a simplified approach to accountability of the program, since only one agency is responsible for the full program and therefore accountability mechanisms (audits, monitoring, reporting, etc.) would need to be performed by only one agency. 	<ul style="list-style-type: none"> • Broader Participation: Under this option, other agencies and jurisdictions would be responsible for identification and implementation of mitigation actions and monitoring of their efficacy. In addition to reducing the burden on the primary program administrator, this approach increases the number of agencies that have a vested interest in the success of the program. • Easier Transition of Power: Because the administrator’s role is limited to oversight and administration, it would be easier to transfer the administrator role to another agency, for example to Caltrans or CARB, if a statewide program is established.
Challenges	<ul style="list-style-type: none"> • Sphere of Influence: The administrator would need to have a regional sphere of influence to administer a multi-jurisdictional program and potentially implement large-scale mitigation actions that have the potential to have a significant effect on VMT. • High Administrative Cost: The cost burden for administration falls on one agency alone, potentially presenting funding challenges for that agency. 	<ul style="list-style-type: none"> • Increased Bureaucracy and Administrative Costs: Coordinating across multiple agencies will increase the number of actors involved and the time and cost for their related participation in the program, even if the cost burden on any one single agency is lower. • Less Transparency and Accountability: This option has the potential for less transparency and accountability due to distribution of implementation and monitoring responsibilities.

Stakeholder Participation

A multi-agency approach to VMT mitigation provides several benefits to smaller jurisdictions who may not yet have adopted local SB 743 guidelines or established an approach to VMT mitigation for developers in their jurisdiction. For these localities, they would simply need to establish a Memorandum of Understanding (MOU) with the program administrator. For jurisdictions that have already established their own mitigation programs, the two options identified include:

- **Maintaining their own programs** and providing an option to project applicants to seek mitigation through the multi-agency program after all local options have been exhausted

- **Replacing their mitigation program** with the multi-agency program, adding their unfunded mitigation actions to the regional mitigation action list

The role of COGs and local jurisdictions, research institutions and advocacy groups, and community organizations under each administration structure option is presented in **Table 4**.

Table 4: Stakeholder Participation

	Option 1: Full Oversight	Option 2: Shared Oversight
COGs & Local Jurisdictions	Participating COGs and local jurisdictions would provide input and guidance in the development of mitigation action lists and would likely establish Memorandums of Understanding (MOUs) with the administrator to utilize the program as a mitigation option in their jurisdiction.	Under this option, mitigation action implementation and monitoring activities are decentralized. Given this, participating COGs and local jurisdictions would play a much larger role in developing mitigation action lists, and in some cases, implementing and monitoring mitigation actions. If COGs and local jurisdictions choose to participate in a multi-agency program, they would likely establish MOUs with the administrator to utilize the program as a mitigation option in their jurisdiction.
Research Institutions & Advocacy Groups	There would likely be a limited role for third-party groups under this option. However, the consolidated structure of this option makes monitoring and accountability of the program an easier task for these groups.	There is potential under this option for research institutions, advocacy groups, and other third parties to take on monitoring and program evaluation roles. This type of third-party role would be encouraged to maintain accountability and transparency.
Community Organizations	Community organizations could participate in this program type during the selection of mitigation actions but may find it challenging due to a lack of established relationships with a centralized, or more regional, program administrator. Community organizations would continue to have an opportunity to advocate for specific actions and to review the potential environmental impacts of the program during its CEQA review.	Similar to the full oversight option, community organizations could participate in the selection of mitigation actions and may have more influence over their local decision makers in prioritizing action selection. However, given the shared nature of administration and likely increased bureaucracy of this option, it may be more difficult for some local community organizations to navigate the full program.

Choosing the Appropriate Administrator

To be an effective administrator, the chosen agency should have the following:

- **Interest in the program:** As a baseline, the administrator should be interested in the program and invested in its success.
- **Influence in the region:** A key to success for the program will be the successful coordination and buy-in from stakeholders. Any multi-agency program would require the administrator to have enough influence and the trust of local jurisdictions to coordinate effectively with all parties.



- **Program management experience:** The administrator should have program management experience with programs of this magnitude.
- **Ability to collect fees:** The administrator should have the legal and administrative ability to collect fees and disburse funds.
- **Technical rigor:** The administrator should have the staff capabilities to perform, or at least oversee, the required technical justifications, including nexus studies and VMT valuation analyses.
- **Staff and funding resources:** The administrator will likely need to cover upfront financial obligations related to the start of the program, including staff time and consulting services, if needed.

The seven candidates for administration of a multi-agency VMT mitigation program are Caltrans, CARB, South Coast Air Quality Management District (SCAQMD)², SCAG, LA Metro, sub-regional COGs³, and local jurisdictions. **Table 5** summarizes how each rank in the criteria established above.

Table 5: Administrator Criteria¹

Admin Criteria	Caltrans	CARB	SCAQMD	SCAG	LA Metro	COGs	Local Jurisdiction
Interest in the program	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○
Influence in the region	●●●○○	●●●○○	●●●○○	●●●○○	●●●●●	●●●○○	●●●○○
Program management experience	●●●○○	●●●○○	●●●○○	●●●○○	●●●●●	●●●○○	●●●●●
Ability to collect fees	●●●●○	●●●○○	●●●○○	●●●○○	●●●●○	●●○○○	●●●●○
Technical rigor	●●●○○	●●●○○	●●●○○	●●●○○	●●●●○	●●○○○	●●●○○
Staff and funding resources	●●●○○	●●●○○	●●○○○	●●●●○	●●●●○	●●○○○	●●○○○

Notes:

1. Rankings shown for each criterion are based off TAC member feedback collected through a polling exercise. Polling results are included in **Appendix B**.

² South Coast Air Quality Management District (SCAQMD) may be considered a candidate agency to serve as the administrator as they manage similar types of programs, and this program would be consistent with their organizational goals and geographic influence. However, they have not yet been included in the stakeholder outreach. The active participation of SCAQMD should be pursued in the next phase of work to better assess their organizational interest and capacity.

³ The COGs in LA County have a wide variation across these criteria. The ranking indicated here reflects the position of COGs in general, with the caveat that some (such as the San Gabriel Valley COG) are farther down the path of developing their own sub-regional mitigation program than others, and some have a mechanism to share costs between member cities while others have not worked through these challenges yet.

Program Funding

The costs of administering a VMT mitigation program can act as a barrier to launching and maintaining the program, underscoring the need for a dedicated funding source built into the program's design.⁴ Stakeholders articulated the importance of cost recuperation as well but emphasized the importance of pairing fees with transparency and accountability measures. Administration costs can be tied to the number or overall cost of the mitigation actions contained within the mitigation program, reflecting the higher level of administrative burden associated with managing a larger program.

Program Recommendations

Three key recommendations for agency oversight and funding were identified through this study:

- **Selection of an administering agency:** The multi-agency VMT mitigation program should be administered by a regional or sub-regional entity. The agency selected to administer the mitigation program should have dedicated staff, the ability to collect fees and issue funds, and geographic boundaries that cover all participating jurisdictions. Agencies that may be appropriate to administer a multi-agency VMT mitigation program include sub-regional councils of governments, Caltrans, Metro, SCAG, SCAQMD, or CARB.
- **Transparency and accountability:** The multi-agency VMT mitigation program must include measures to ensure transparency and accountability of the agency chosen to administer the program. This could be through required regular reporting or third-party oversight.
- **Dedicated funding source:** Part of the VMT mitigation program and fee schedule development must include associated fees for recuperating administrative costs. These fees should not exceed the specific administrative costs required to operate the program.

Areas of Further Exploration

There is still a need to explore whether there is broad interest in establishing a multi-agency program. If a single jurisdiction wanted to pursue an off-site mitigation program alone (as opposed to a multi-agency program approach), the jurisdiction would be the lead agency for CEQA purposes and would also function as an administrator for mitigation actions if they are implemented through a program such as an impact fee program. For example, LADOT could establish an off-site mitigation program that is fully managed and administered by LADOT, with mitigation actions under their control (such as DASH pass distribution). This structure would function much like the existing fee program that LADOT has in place, with additional requirements for mitigation action selection, data collection, monitoring, and periodic VMT valuation assessment.

If it is determined that there is sufficient interest among multiple jurisdictions to launch a multi-agency mitigation program and consensus has been built among those jurisdictions on the specifics of the

⁴ As a precedent example, California's wildlife and conservation mitigation bank program was put on hold due to lack of funding. Legislation was passed in 2013 that allowed the Department of Fish and Wildlife, who administers the program, to begin collecting fees specific to administration, allowing the program to get back on track. This demonstrates the importance of recognizing the burden of administrative costs early on in program development.



program design, the appropriate administrator and funding procedures can be determined. While agency oversight and funding are critical elements to the success of the program, it is not necessarily as vital as other topics such as establishing mitigation action criteria, developing standardized data collection and monitoring procedures, or choosing the geography and scale of the program, and therefore should be established after program design is complete.

Mitigation Action Selection

Mitigation action selection refers to the types of projects and programs that should be considered as mitigation actions under a multi-agency VMT mitigation program and the criteria used to evaluate them prior to funding and implementation. Through stakeholder engagement and the literature review, this study sought to find answers to:

- **Types of Mitigation Actions:** What types of mitigation actions can be included in a multi-agency VMT mitigation program? How can the mitigation program be designed to provide the most flexibility in identifying and implementing mitigation actions?
- **Mitigation Action Criteria:** How should mitigation actions be selected and prioritized for funding and implementation? What other criteria should be considered beyond the CEQA-required VMT reduction and additionality criteria?

Discussion

Types of Mitigation Actions

Mitigation actions that have the potential to be funded through VMT mitigation programs typically fall into three categories:

- **Capital Improvement Projects (CIPs):** These are physical improvements to the transportation network. VMT-reducing capital improvement projects may include pedestrian, bicycle, or transit infrastructure projects as well as projects involving infrastructure enhancements to support parking pricing or other forms of pricing to reduce single-occupancy vehicle travel demand.
- **Programs:** These are programmatic approaches to VMT mitigation, which would likely include transportation demand management (TDM) strategies such as provision of discounted or free transit passes and travel incentive programs that encourage the use of carpooling, telecommuting, active transportation, or transit modes.
- **Operational Improvements:** These types of improvements are related to service expansion that would improve accessibility to services, encourage people to use transit instead of a personal vehicle, and therefore reduce VMT. These types of improvements could include increases in transit frequency and speed through provision of expanded service hours, the purchase of additional transit vehicles, or the expansion of route-miles, as well as the expansion of programs such as micromobility services or bikeshare systems.

Based on the limited existing literature that addresses VMT mitigation programs (such as white papers, case law, and exploratory efforts), each type of mitigation action may be subject to constraints depending

on the program design choices. For example, under current transportation impact mitigation fee programs, capital improvement projects make up the bulk of project lists largely due to their ability to directly satisfy requirements of the California Mitigation Fee Act. One major benefit of VMT mitigation programs that are structured like a VMT exchange or bank is that they increase the potential for implementation of programmatic or operational mitigation actions. **Table 6** describes the potential to include each mitigation action type under each mitigation program structure.

Table 6: Mitigation Action Eligibility by VMT Mitigation Program

Action Type	Impact Fee Program	Exchange Program	Bank Program
CIPs	Straightforward: Implementing CIP lists through transportation impact fees is a routine and standard practice. However, there is often a lag between when land use projects are approved and developed versus when mitigation actions are implemented as CIPs are typically funded through multiple project applicants.	Doable (with caveats): Exchange programs require project applicants to pay the full cost of mitigation actions to mitigate their projects. It may be difficult to match a project’s mitigation obligation to a CIP’s VMT reduction potential, which would result in slower implementation of the mitigation action list.	Straightforward: Once enough VMT reduction credits have been purchased to fund the CIP, the mitigation action can then be implemented. Similar to impact fee programs, CIPs would likely be funded through multiple project applicants and are likely to experience a lag between land use project approval and mitigation action implementation.
Programs	Doable (with caveats): Some transportation impact fees have started including programmatic actions in their project lists; however, the inclusion of programmatic actions has not yet been tested in court.	Straightforward: Programmatic actions can be included in an exchange program and can often be right sized to meet the project applicant’s mitigation need.	Straightforward: Purchased VMT reduction credits would be allocated to programmatic actions.
Operational	Challenging: There are no examples of O&M costs being covered through transportation impact fees and the Mitigation Fee Act (Government Code §65913.8) explicitly excludes these types of costs.	Straightforward: Similar to programmatic actions, O&M actions can also be right sized to meet project applicant needs.	Straightforward: Purchased VMT reduction credits would be allocated to O&M actions.

The above assessment reflects the ease or challenge of including specific VMT mitigation action types into a mitigation program framework. However, with all mitigation programs, there are additional upfront efforts required to evaluate each mitigation action’s VMT reduction potential, establish costs, and develop a value for a VMT credit (in the case of the VMT bank program). Those challenges are not addressed in the table above.



Action Criteria

CEQA requires that mitigation actions demonstrate the potential to reduce VMT and fulfill additionality requirements. However, project stakeholders expressed that these two criteria alone are not sufficient in determining what actions should be funded through mitigation dollars. Many TAC members articulated the need for a multi-agency mitigation program not only to reduce VMT, but also to help achieve the region's equity and mobility goals. One way to ensure that the multi-agency mitigation program meets these goals is to develop a list of criteria that go beyond the CEQA requirements of VMT reduction and additionality. Through stakeholder discussions, the following were elevated as additional criteria that should be used to determine whether a mitigation action can be funded through the multi-agency mitigation program:

- **VMT Reduction Potential:** The ability for an action to reduce VMT is a baseline requirement for inclusion in CEQA mitigation programs. A standardized, agreed-upon methodology for determining VMT reduction potential should be utilized to ensure consistency in evaluation across the region.
- **Additionality:** The lead agency proposing the action must demonstrate that the VMT reduction estimated for the action is above and beyond what would have occurred without the mitigation program.⁵
- **Equity:** In recognition of historic public disinvestment in low-income communities and communities of color paired with the undue burden of the climate crisis on these same communities, all transportation investments should serve to improve their mobility needs. Currently under-resourced communities throughout the region should be considered partners in establishing the appropriate metrics to be used to evaluate how mitigation actions work towards equity.
- **Regional mobility:** Mitigation actions should improve non-auto access and mobility for the region, recognizing that large-scale, forward-thinking actions are what will be needed to significantly reduce VMT. Accessibility metrics for key destinations affected by mitigation actions could be used to demonstrate specific benefits.
- **Cost Effectiveness:** The most cost-effective mitigation actions should be prioritized. Metrics such as benefit-to-cost ratio should be used. "Benefits" may be defined as a combination of VMT reduction potential, ability to improve mobility, and ability to address equity objectives.
- **Marketing approach:** A mitigation action can only achieve its VMT reduction potential if people are inclined to use it. Mitigation actions should be paired with a marketing strategy that strives to cultivate the behavioral change required to maximize the VMT reduction potential of the action.

⁵ A potential "check" for additionality is whether the mitigation action is included in the adopted Federal Transportation Improvement Program (FTIP). The FTIP contains those projects from the Regional Transportation Plan (RTP) that are programmed to be funded and implemented over a six-year cycle. Projects not included in the FTIP have less certainty about their funding and implementation. Other jurisdictions such as the SBCTA are investigating this question, and the issue of additionality will be further investigated in future phases of this project.

The preliminary list of mitigation actions to be evaluated and prioritized against these criteria should be determined through a collaborative process that includes both regional and local partners. Local jurisdictions will likely have a more context-sensitive understanding of the types of actions that would work best for their constituents and should be encouraged to work with community partners to establish their mitigation action lists.

Program Recommendations

Two key recommendations related to mitigation action selection were identified through this study:

- **Maximize flexibility:** It will take a holistic approach to curbing VMT in the region, inclusive of large-scale capital projects, programmatic solutions, and operational improvements. The multi-agency VMT mitigation program provides flexibility in the types of mitigation actions that can be funded through the program.
- **Robust list of mitigation action criteria:** The multi-agency VMT mitigation program should explain how to select and prioritize mitigation actions for funding and implementation. Mitigation actions should be evaluated based on their VMT reduction potential, ability to clear the additionality test, equity implications, region mobility benefits, cost effectiveness, and marketing approach. Evaluation metrics should be chosen carefully and in partnership with currently under-resourced communities and should be simple and methodical to limit the administrative and technical requirements of approving mitigation actions.

Areas of Further Exploration

Further phases of work should explore:

- **Mitigation action evaluation framework:** A specific mitigation action evaluation framework should be developed to select mitigation actions for the program.
- **Regulatory limitations on types of mitigation actions:** The specific limitations of VMT impact fee programs on implementing programmatic and O&M mitigation actions is further explored in the **Regulatory Framework** section of this report. However, there is more work to be done in understanding the legal framework and funding restrictions on programmatic and O&M mitigation actions, especially those related to transit.

Data Analysis & Monitoring

Data analysis and monitoring refers to the data collection, methodology, and analysis necessary to establish and monitor a VMT mitigation program. Through stakeholder engagement and the literature review, this study sought to find answers to:

- **Analysis Requirements:** What are the requirements for establishing nexus for a VMT mitigation program? What metrics are being evaluated? How is the fee or cost to project applicant determined?



- **Analysis methodology:** What is being evaluated for each of the VMT mitigation program alternatives? What is the preferred methodology to evaluate the programs? What types of data should be used?
- **Monitoring approach:** What are the monitoring requirements of VMT mitigation programs? How frequently should programs be monitored? Is the program as a whole being monitored, or individual mitigation actions?

Discussion

Analysis Requirements

The Mitigation Fee Act [California Government Code §66000-66001] is the primary legal framework for imposing fees through an impact fee program. It requires that a nexus be completed to demonstrate that the imposed fee is directly related to the impacts of the project, and to ensure the amount of the fee is roughly proportional to the impacts of the project. The nexus requirements for a VMT bank or exchange program have not yet been established but the connection between a land use project's entitlement and any CEQA mitigation action must comply with the *Nollan v. California Coastal Commission* (483, U.S. 825 (1987)) and *Dolan v. City of Tigard*, 512 U.S. 374 (1994) expectations (discussed in more detail in the **Regulatory Framework** section below). In addition, analysis will be needed to demonstrate the effectiveness of each mitigation action at reducing VMT and to quantify the benefits and costs of the programs:

- **Additionality:** VMT mitigation programs are required to demonstrate that the mitigation actions pass the "additionality" test: without the mitigation program, the VMT reduction would not otherwise occur. For capital improvement projects, demonstrating additionality may be as straightforward as verifying whether the action is currently programmed to be funded and implemented. An example would be to verify that an action is not already included in an adopted FTIP. For programmatic mitigation actions and operational actions, the demonstration of additionality may be more complex but would still operate under the concept that the action would not reliably be expected to occur in a reasonable timeframe "but for" the availability of the mitigation program. Additionality tests for programmatic and operational mitigation actions must be developed if a VMT bank or exchange concept is chosen as the preferred mitigation program.
- **Analysis Metrics:** The primary purpose of all VMT mitigation programs is the reduction of VMT. At a minimum, a mitigation program must quantify the VMT reduction potential for the program as a whole and for the individual mitigation actions contained within the program. In addition, if the mitigation program is structured as a VMT bank, the program must also create a VMT reduction valuation – how much it costs to reduce one VMT – based on a variety of factors including economic conditions, development potential, full mitigation program reduction potential, and cost of implementing the full mitigation program. This is a much more complex metric to quantify and would require extensive research, economic analysis, and discussion on the best approach to valuation. The methodology would also need to include the ability for annual or more frequent adjustments to capture the varying market value on VMT reduction. This process is comparable to the valuation of Cap-and-Trade program carbon credits.

Table 7 summarizes the analysis requirements based on the three alternative VMT mitigation program structures.

Table 7: VMT Mitigation Program Analysis Requirements

Analysis	Impact Fee Program	Exchange Program	Bank Program
Nexus	Required. Impact Fee Programs fall under the Mitigation Fee Act, which requires an extensive nexus analysis.	Required. At a minimum, Nollan/Dolan expectations will apply. It is still unknown whether exchanges and banks would also fall under the Mitigation Fee Act.	
Demonstration of Additionality	No additional analysis required. Impact Fee Program mitigation actions are typically limited to unfunded capital improvement projects, which, by definition, demonstrate additionality.	Additional analysis required. Feasible mitigation actions under exchange and bank programs would include programmatic and operational mitigation actions that may already be established but could be expanded with additional funding. These types of mitigation actions will require a closer analysis to determine whether they pass the additionality test.	
Analysis Metric	VMT reduction potential and the cost to implement the mitigation actions contained within the program.		VMT reduction potential and the cost to implement the mitigation actions, and the value of VMT reduction (evaluated on an ongoing basis).

Analysis Methodology

There are a variety of analytical tools and approaches to calculating the VMT reduction potential of mitigation actions. Several key considerations related to analysis methodology were identified through the literature review and conversations with stakeholders:

- Standardized analysis:** With the adoption of SB 743 implementation guidelines, many jurisdictions have developed VMT calculation methodologies for project applicants to employ in their CEQA transportation impact analyses. While most of these tools have similar inputs, slight variations in methodologies may lead to different outcomes and therefore differing mitigation obligations. Several stakeholders elevated the importance of adopting a standardized approach both for analyzing VMT impacts of projects and VMT benefits of mitigation actions to ensure consistency across the region and minimize confusion amongst jurisdictions and project applicants. The desire for consistency, however, should be balanced against accuracy especially considering the expectations of the CEQA Guidelines and past court decisions regarding technical adequacy and substantial evidence. Standardization would provide the benefit of consistency and transparency but may be a challenge to implement given the different development landscapes, technical capabilities, and policy priorities of each jurisdiction.



- **Analyzing the VMT reduction potential of mitigation actions:** Since the adoption of SB 743 and release of *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA, 2010), CAPCOA's research on VMT/GHG reduction strategies has become the industry standard for quantifying VMT reduction potential at the project- and community-scale. Other resources are also available from the California Air Resources Board (CARB) through their research on effects of transportation and land-use related policies and their recent net zero buildings feasibility study.⁶ These are examples of the types of evidence necessary to support the inclusion of specific mitigation actions in a VMT mitigation program.

Programs that rely on this type of research should carefully review the available evidence supporting potential reductions and their applicability within the specific land use context where they will be applied. Common limitations with current research include reduction values that do not reflect statistically significant findings, uncertain transferability across land use contexts, future building tenant-dependent performance for TDM strategies, and limited sample sizes or case studies. An update to the CAPCOA research is anticipated in 2021 that includes more local factors in determining VMT reduction potential, but the question remains as to whether the research will be generalizable. In addition, VMT reduction has been shown to vary widely based on how a program has been designed and promoted. Without knowing how a program will be implemented by the final occupant or tenant of a project, it is impossible to know how effective it may be.

Big data vendors and other empirical data collection efforts offer opportunities for more targeted, locally sensitive analyses that demonstrate VMT reduction. Data availability and privacy concerns may be barriers to wide-scale implementation of an empirical data collection and analysis approach to quantifying VMT reduction potential.

Monitoring Approach

Lessons learned from the literature review and conversations with the TAC demonstrate the importance of a robust foundation of data collection and monitoring of a multi-agency VMT mitigation program to demonstrate the program's long-term effectiveness for VMT reduction. For a mitigation bank, the monitoring is even more essential since the monitoring data would be used to routinely update the monetary value of VMT reduction. Two key topics were discussed regarding monitoring:

- **Program evaluation:** There was consensus among the TAC that the mitigation program as a whole should be evaluated rather than the performance of individual mitigation actions. Whether this would be sufficient for CEQA mitigation purposes is a legitimate question for further investigation given the need to provide substantial evidence demonstrating mitigation effectiveness and feasibility. For example, mitigation exchanges would likely require evidence that the individual actions being implemented by a project applicant would produce the VMT

⁶ <https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/research-effects-transportation-and-land-use>
https://ww3.arb.ca.gov/research/single-project.php?row_id=65274

reductions necessary to eliminate or lessen significant VMT impacts. TAC members also expressed the need to minimize the liability concerns of project applicants who are paying for mitigation actions based on their estimated VMT mitigation potential. Use of a mitigation ratio would help minimize underestimates of VMT reduction for the mitigation program.

- **Frequency:** The frequency of monitoring should be determined based on legal compliance, staff capacity, and anticipated changes to the value of VMT reduction. Precedent for frequency of evaluation includes impact fee programs, whose fees can be updated annually with mandatory five-year checks on overall program implementation; and Cap-and-Trade, which is structured around a three-year compliance period and a re-valuation of carbon credits annually.

Program Recommendations

Three data analysis and monitoring recommendations were identified through this study:

- **Standardized analysis:** VMT estimating, forecasting, and analysis is continuing to evolve and slight variations in methodologies across jurisdictions can produce different outcomes. Several stakeholders elevated the importance of adopting a standardized approach to analyzing VMT impacts of projects and VMT benefits of mitigation actions to provide consistency across the region and minimize confusion amongst jurisdictions and project applicants. This expectation will need to be balanced against the importance of accuracy in evaluating mitigation effectiveness for CEQA purposes.
- **Monitoring program:** CEQA requires mitigation monitoring as noted in CEQA Guidelines §15097. Monitoring is also essential for the long-term success of a multi-agency VMT mitigation program. At a minimum, the multi-agency VMT mitigation program should include a framework for on-going monitoring that covers full program performance. Monitoring of individual actions may also be required pending further research and investigation but is likely for mitigation programs. The frequency of evaluation should be sufficient to meet legal compliance requirements so that appropriate expectations can be set and met for staff capacity and resource allocation at agencies responsible for monitoring.
- **Data collection:** Data collection must be a foundation of the multi-agency VMT mitigation program, with a data collection framework established at the onset to ensure consistency and accuracy across all mitigation actions and address any data privacy, availability, and ownership concerns early on.

Areas of Further Exploration

Future phases of work should explore:

- **Valuation of VMT reduction:** A methodology for determining the value of VMT reduction credits is a likely next step to determine how the region could proceed with a mitigation program that is structured as a VMT bank. Since VMT reduction will vary based on macro-level market conditions beyond the control of local and regional agencies, this is one of the most critical components of a bank concept.



- **Analytical best practices:** CEQA compliance and legal experts should be consulted on the most applicable data, methods, and research references for analyzing mitigation action reduction benefits.
- **Data specification:** Further work should be done with project partners to understand barriers to data accessibility, especially around privacy limitations, data ownership, and data formats.

Regulatory Framework

The regulatory framework refers to the collection of statutes and regulations that are relevant to VMT mitigation programs and provide guidance on what would be required of a multi-agency VMT mitigation program from a legal and regulatory compliance perspective. Two key studies included in the literature review, *VMT Mitigation through Fees, Banks, and Exchanges* (Fehr & Peers and Western Riverside Council of Governments, 2020) and *Implementing SB743: An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks* (Institute of Transportation Studies, UC Berkeley, 2018), cover this topic in detail and should be referred to for more information. Through stakeholder engagement and the literature review, this study sought to find answers to:

- **Statutes & Regulations:** What statutes and regulations are relevant to and provide guidance on VMT mitigation programs?
- **Case Law:** Are there case law examples that are significant to the implementation of VMT mitigation programs?

Discussion

Statutes and Regulations

Table 8 provides an overview of relevant statutes and regulations and which mitigation program structure they are most applicable to.

Table 8: Legal Framework for VMT Mitigation Programs

Statutory Reference	Description	Impact Fee	Exchange	Bank
Mitigation Fee Act¹	This legislation outlines the requirements for establishing a mitigation fee program. It includes specifications on the nexus study and what types of projects can be funded through fee programs, limiting the use of fees to “public facilities” necessary to support a project. Public facilities are generally defined as capital projects, which limits the application of fees to existing deficiencies or the maintenance and operation of an improvement.	✓		
CEQA Statute² CEQA Guidelines^{3,4}	The CEQA Statute and Guidelines establish that for mitigation to be imposed, a significant impact must occur. The significance of those impacts is determined by the lead agencies’ choice of thresholds. This limits mitigation to the increment of VMT that occurs above the threshold. Proposed mitigation must also be monitored although the form of monitoring may vary from verification that the mitigation action was completed to routine measurement of mitigation action performance. The nexus and rough proportionality standards established by case law (i.e., Nollan/Dolan noted above and discussed further below) also apply.	✓	✓	✓
Fish & Game Code⁵	This legislation outlines the necessary steps to develop a conservation bank for mitigation purposes. While not directly applicable to VMT mitigation programs, it is reasonable to use this statute as a proxy given that VMT banks and exchanges would be established in an effort to <i>conserve</i> (or avoid) trip making and the associated emissions.		✓	✓

Notes:

1. California Government Code §66000-66001
2. California Public Resources Code §21000-21189
3. California Code of Regulations, Title 14, Division 6, Chapter 3, §15000-15387
4. California Code of Regulations, Title 14, Division 6, Chapter 3, §15041
5. California Government Code §1852

Source: Fehr & Peers, 2021.

Case Law

Court decisions often provide critical guidance on areas that are unclear or unspecified in statutes and regulations. Given the complexity and nuance in CEQA compliance and mitigation, many case law examples can be reviewed to enhance the regulatory framework guiding the development of VMT mitigation programs. While a full case law review was not completed for this phase of the study, **Table 9** highlights major case law examples that are often cited when developing mitigation programs.



Table 9: Case Law Relevant to VMT Mitigation Programs

Case	Description ¹	Impact Fee	Exchange	Bank
Nollan v. California Coastal Commission, 483 U.S. 825 (1987)	In <i>Nollan</i> , the Court held that a government could, without paying the compensation, demand the easement as a condition for granting a development permit the government was entitled to deny, provided that the exaction would substantially advance the same government interest that would furnish a valid ground for denial of the permit.	✓	✓	✓
Dolan v. City of Tigard, 512 U.S. 374 (1994)	The Court further refined the Nollan requirement in <i>Dolan</i> , holding that an adjudicative exaction requiring dedication of private property must also be “‘roughly proportional’ . . . both in nature and extent to the impact of the proposed development.”	✓	✓	✓

Notes:

1. <https://blog.aklandlaw.com/2013/07/articles/exactions-impact-fees-service-charges-and-property-taxes/the-us-supreme-courts-nollandolan-jurisprudence-is-catching-up-with-the-california-supreme-court-in-ehrllich-v-culver-city/>

Source: Fehr & Peers, 2021.

Program Recommendations

One regulatory framework recommendation was identified through this study:

- **Legal compliance:** The VMT mitigation program must be compliant with all applicable statutes, regulations, and case law.

Areas of Further Exploration

Outstanding questions to be explored in next phases of work include:

- **Mitigation Fee Act applicability to banks and exchanges:** Legal counsel should be sought to confirm whether VMT bank and exchange programs would fall under the purview of the Mitigation Fee Act.
- **Comprehensive case law review:** A comprehensive case law review should be completed to ensure full compliance with the existing regulatory landscape.

Program Risk Reduction

Program risk reduction refers to the elements of the mitigation program’s framework that reflects the project applicant’s funding and timeline requirements for mitigation, and the approach to minimizing risks associated with project development and mitigation action implementation. Through stakeholder engagement and the literature review, the following key discussion points were identified:

- **Cost:** What is being paid for? How much certainty in cost is there for project applicants?

- **Mitigation timeline:** How long are project applicants required to mitigate their VMT impacts? What is the compliance period?
- **CEQA mitigation potential:** Does the VMT mitigation program offer potential for full mitigation of VMT impacts?

Discussion

Cost

Land use and development stakeholders emphasized the importance of certainty in project mitigation costs as a key concern for project applicants. **Table 10** summarizes what is being paid for, the certainty in developer costs, and overall cost variance under each mitigation program structure.

Table 10: Cost Certainty by VMT Mitigation Program

Action Type	Impact Fee Program	Exchange Program	Bank Program
What is being paid for	Established fees	Full cost of implementation of the mitigation action	VMT reduction credits
Certainty	Certain. Fee schedules are intelligible and intuitive, giving project applicants a solid understanding of project costs by land use type.	Uncertain. Project applicants will not know which mitigation actions are available for their project and the related cost of implementation until the impact analysis is complete. There may not be an exact match between the project's VMT mitigation obligation and the available mitigation actions. Further, because project applicants are required to pay the full cost of implementation, constant variations in construction, labor, and material costs will add to the uncertainty in total project costs.	Somewhat certain. Although it requires substantial effort up front, once VMT credits are valued, VMT credits function as a known, standardized cost that can be easily worked into overall project cost. However, because the value of VMT reduction will vary based on macro-level market conditions influenced by fuel costs, economic activity, emissions reduction technology, etc., the value of VMT reduction will vary over time and may even vary throughout a single year. As a result, VMT reduction values will need to be periodically updated, but could be calculated in a way that accounts for these variations.
Frequency of cost fluctuation	At most, annually	Constant	Ideally, annually but dependent on data availability

Mitigation Timeline

A key question for VMT mitigation is the timeframe for when mitigation starts and ends. For impact fee programs, project applicants make a one-time payment at building permit. For exchanges and banks, mitigation may be required until substantial evidence verifies that the VMT impact has been reduced to a less than significant level. Comparison programs such as Cap-and-Trade and wildlife conservation require



mitigation in perpetuity. It is possible that project applicants will be required to mitigate the full impact over their project's lifespan. Two options were identified through stakeholder engagement and the literature review:

- **One-time lifecycle analysis:** Most projects have industry standard assumptions for useful life of projects, whether it be a large-scale infrastructure project or residential development. A lifecycle analysis could be performed as part of the impact analysis to understand the full VMT impact over the useful life of the project. This value could then be used for a one-time fee that covers the mitigation requirements for the lifespan of the project.
- **On-going mitigation with a set compliance period:** The alternative is to evaluate impacts and collect fees in perpetuity or until substantial evidence demonstrates the impact has been reduced. Project applicants would need to include on-going mitigation costs in their annual budgets, and the administrator of the program would need to have appropriate accounting systems in place to track each individual project's contributions over time.

CEQA Mitigation Potential

All three program structures have the potential to fully mitigate project impacts, with important nuances including data availability; rigor of analysis; consistency with other plans, programs, and ordinances; and the determined efficacy of mitigation actions. Several stakeholders brought up the role of mitigation ratios in helping alleviate concerns in mitigation actions not meeting their estimated VMT reduction potential and therefore not fully mitigating projects. The California Coastal Commission requires a mitigation ratio of 4:1 (four acres of land conserved for every acre developed). The mitigation program could establish a mitigation ratio that takes into account data and research limitations as well as changes in mitigation action efficacy over time to minimize overestimates of mitigation performance.

Program Recommendations

Several program recommendations were identified related to program risk reduction:

- **Program Legibility:** The VMT mitigation program should be designed to be intelligible and intuitive to project applicants. Analyses should be standardized and automated when possible, and when it would not compromise accuracy.
- **Cost Certainty:** The VMT mitigation program should offer cost certainty to project applicants while also being sensitive to how mitigation costs can affect development feasibility in the region.
- **Mitigation ratios:** A mitigation ratio greater than 1:1 should be adopted to address the uncertainty in VMT reduction potential of mitigation actions. As more data on the efficacy of specific mitigation actions become available and reliable VMT reduction potential estimates can be established with greater certainty, mitigation ratios can be revisited and adjusted accordingly.

Areas of Further Exploration

Outstanding questions to be explored in next phases of work include:

- **Mitigation timeline:** Legal counsel should be sought to confirm the mitigation timeline requirements for VMT banks and exchanges.
- **Voluntary vs mandatory:** An important aspect of mitigation programs is whether they are voluntary versus mandatory. Impact fee programs tend to be mandatory and are designed to mitigate the cumulative impacts of projects consistent with an adopted general, community, or specific plan. Exchanges and banks could follow this example but may be more effective as an alternative mitigation option for projects that lack other feasible on-site or local jurisdiction mitigation options. Likely benefits of a voluntary program include simpler demonstration of additionality and a greater likelihood of being able to fully mitigate project impacts.
- **Full funding potential:** The full funding potential unlocked by establishing a VMT mitigation program remains uncertain. Any new program should be assessed in a manner similar to an impact fee program, where the fee revenue combined with other revenue sources should result in full funding for the mitigation action such that it can qualify as a CEQA mitigation.



U-Pass as a Pilot Mitigation Action

This chapter introduces LA Metro’s Universal College Student Transit Pass (U-Pass) as a pilot mitigation action for a VMT mitigation program. SCAG, LA Metro, and LADOT are exploring use of the U-Pass program as a pilot mitigation action for a multi-agency VMT mitigation program. Through the pilot, SCAG and LADOT are hoping to:

- **Solidify the regional VMT mitigation program framework** for broader implementation
- **Determine regional interest** in participating in a multi-agency VMT mitigation program
- **Understand data collection and analysis protocols** for analyzing the mitigation potential of the pilot

U-Pass is a subsidized student transit pass program administered by LA Metro and is accessible to all students enrolled in at least one course at participating vocational, two-year, and four-year educational institutions throughout LA County. Students apply directly through their affiliated institution and have access to unlimited subsidized rides on all LA Metro services and on nine additional participating transit agencies – Long Beach Transit, Pasadena Transit, Big Blue Bus, GTrans, DASH, Montebello Bus Lines, Culver City Bus, Torrance Transit, and Norwalk Transit. LA Metro invoices participating schools at \$0.50-0.75 per boarding (depending on the transit agency); each school then determines if and how to pass that cost on to students. As of fall 2019, there were almost 19,300 U-Pass holders across 20 participating institutions.

This chapter includes discussion on:

- **U-Pass as a Pilot Mitigation Action:** In this section, the U-Pass program is qualitatively assessed through the lens of the action criteria established in the **Mitigation Action Selection** section of this report – VMT reduction potential, additionality, equity, regional mobility, cost effectiveness, and marketing approach.
- **VMT Reduction Potential:** This section summarizes the VMT reduction potential analysis conducted for the U-Pass program, as well as discusses data limitations identified through this study.
- **Program Recommendations:** This section summarizes recommendations for enhancing the administrative and programmatic components of U-Pass to better align the program with the goals and purpose of a mitigation action. Recommendations for the structure of the pilot program itself are also included in this section.

U-Pass as a Pilot Mitigation Action

LA Metro, LADOT, and SCAG agree that the U-Pass program presents a good opportunity to serve as the first pilot mitigation action due to its emphasis on reducing economic barriers to education, countywide reach, wide eligibility criteria, available survey and ridership data related to the program, and ability to

demonstrate VMT reduction potential. **Table 11** provides a qualitative assessment of how the U-Pass program performs in each of the action criteria established in the **Mitigation Action Selection** section of this report.

Table 11: U-Pass Program Assessment

Action Criteria	U-Pass Program Detail
VMT Reduction Potential	<p>The U-Pass program has the potential of reducing VMT by providing a viable, low-cost transit option for college students in LA County. The VMT reduction potential of the program is almost 128,000 daily VMT. This value is dependent on a series of parameters and is further discussed in the Notes: Research and findings presented in <i>Class Act: An assessment of Los Angeles Metro's U-Pass Program</i> (Yowell, 2019) VMT Reduction Potential section below.</p> <p>Further, there are unmeasurable VMT reduction benefits associated with early adoption of transit use by students leading to more transit-oriented travel behavior later in life.¹ Building transit fluency among the LA County student population likely has a significant impact in VMT reduction over their lifetime that is not captured in this analysis.</p>
Additionality	<p>The current structure of the U-Pass program requires students to “opt-in” as opposed to being automatically enrolled. The U-Pass program clears the additionality test because passes would only be distributed to students who are not currently enrolled in the program, and “but for” additional investment to expand the program or additional subsidization of passes for students already enrolled, the VMT reductions would not occur.</p>
Equity	<p>Research has shown that transportation costs can be a barrier to education¹, placing further undue burden on low-income students. The U-Pass program seeks to provide a viable, low-cost transportation option throughout LA County by subsidizing transit trips and reducing the up-front cost of transit.</p> <p>Any student enrolled in a credit or non-credit course at a vocational, two-year, or four-year educational institution is eligible for a U-Pass. This wide-scale eligibility provides a strong foundation for developing an equitable mitigation action. To ensure program equity, schools that have higher shares of low-income and person of color student populations should be prioritized for receiving subsidized U-Passes through the pilot program.</p>
Regional mobility	<p>LA Metro has partnered with nine other LA County transit agencies (Culver City Bus, GTrans, DASH, Torrance Transit, Long Beach Transit, Montebello Bus Lines, Norwalk Transit, Pasadena Transit, and Santa Monica Big Blue Bus) to ensure the U-Pass is eligible on multiple transit services throughout the region, enhancing regional mobility for U-Pass holders. Additional expansion of these partnerships would result in greater regional access.</p>
Cost Effectiveness	<p>Additional analysis will be required to determine the cost of the program to LA Metro to right-size the cost of participation in the program to project applicants and determine the overall cost effectiveness of the program.</p>



Table 11: U-Pass Program Assessment

Action Criteria	U-Pass Program Detail
Marketing approach	Currently, marketing and promotion of the U-Pass program is conducted largely at the discretion of participation schools. The use of U-Pass as a pilot program should be paired with a standardized, strategic marketing program that is aimed at increasing students’ awareness of the program and the benefits of using the pass for more than school commute trips, potentially increasing the VMT reduction potential of additional passes over time.

Notes:

1. Research and findings presented in *Class Act: An assessment of Los Angeles Metro’s U-Pass Program* (Yowell, 2019)

VMT Reduction Potential

The VMT reduction potential of the U-Pass program as a mitigation action was analyzed using research and methodologies established in a forthcoming update to *Quantifying Greenhouse Gas Mitigation Measures* (CAPCOA, 2010) and U-Pass data provided by LA Metro from fall 2019. This section provides an overview of:

- **Methodology and Findings:** A high-level overview of the methodology and parameters considered in the analysis are presented alongside findings in VMT reduction potential for the program.
- **Sensitivity Analysis:** A high-level sensitivity analysis was conducted to understand how VMT reduction potential may vary under certain scenarios; for example, if variables were known at a greater specificity or if the U-Pass program provided a full subsidy.
- **Data Limitations:** Data collection and analysis constraints.

Methodology and Findings

The VMT reduction potential of the U-Pass program as a mitigation action was analyzed based on U-Pass data provided by LA Metro from fall 2019 and research findings from the updated CAPCOA reference manual on the VMT reduction potential associated with transit pass subsidies.

The equation below was employed to estimate the VMT reduction potential per U-Pass from the applicable research:

$$A = \left(\left(\frac{C}{B} \right) \times E \right) \times D \times F \times G$$

Table 12 provides a description of each parameter. **Table 13** summarizes key takeaways from the analysis.

Table 12: U-Pass VMT Reduction Potential Calculation (Baseline Parameters for City of Los Angeles)

	Parameter	Value
A	Daily VMT reduction potential per U-Pass distributed (VMT per U-Pass) ¹	--
B	Average transit fare without subsidy (\$)²	\$1.75
C	Subsidy amount (\$)²	\$1.00
D	Transit mode share of all college student trips (%)³	14%
E	Elasticity of transit boardings with respect to transit fare price (unitless)⁴	0.43
F	Percent of transit trips that would otherwise be made in a vehicle (%)⁵	20%
G	Average student generated daily VMT (Daily VMT)³	14.0

Notes:

1. Calculation for "Daily VMT Reduction Potential per U-Pass" determined based on slight refinements to the reduction formula for "Implement Subsidized or Discounted Transit Program" found in *Handbook Update Measure Quantification Methodology* (ICF, 2021).
2. The U-Pass program reduces the cost of each trip from \$1.75 to \$1.00.
3. California Household Travel Survey (CHTS, 2012) travel characteristics for two-year and four-year college students in the City of Los Angeles. The most recently available CHTS dataset is from 2012 and therefore does not capture the significance of Transportation Network Company (TNC) usage on college campuses. This value should be adjusted as more up-to-date, or location specific, data becomes available.
4. *Nature and/or nurture? Analyzing the determinants of transit ridership* (Taylor, 2008). This research is the most up-to-date analysis available; however, it represents data collected prior to the full economic rebound from the 2008 recession. It should be revisited as additional research becomes available.
5. LA Metro U-Pass Survey Data. Percent of students who stated they did not previously ride transit when applying for the U-Pass program in Fall 2019.

Source: Fehr & Peers, 2021.

Table 13: U-Pass VMT Reduction Potential and Mitigation Cost (Baseline Calculations for City of Los Angeles)

Metric	Findings
Daily VMT Reduction Potential per Pass¹	0.09
Number of Passes Required to Reduce 1 Daily VMT	10.79
Average Amount Invoiced by LA Metro per Semester per Pass²	\$94.18
Approximate Cost of Reducing 1 Daily VMT³	\$1,016.22

Notes:

1. Daily VMT reduction potential per pass calculated utilizing CAPCOA methodology. See Table 12 for details on the calculation.
2. Average amount invoiced by LA Metro per U-Pass participant in the Fall 2019 semester. This cost includes boardings and \$2.00 sticker cost.
3. This value is subject to change and based on the current invoice structure of the U-Pass program. LA Metro may decide to restructure the fee schedule of the U-Pass program to better function as a mitigation action, such as implementing a flat rate per U-Pass; see Administrative Recommendations below for more details.

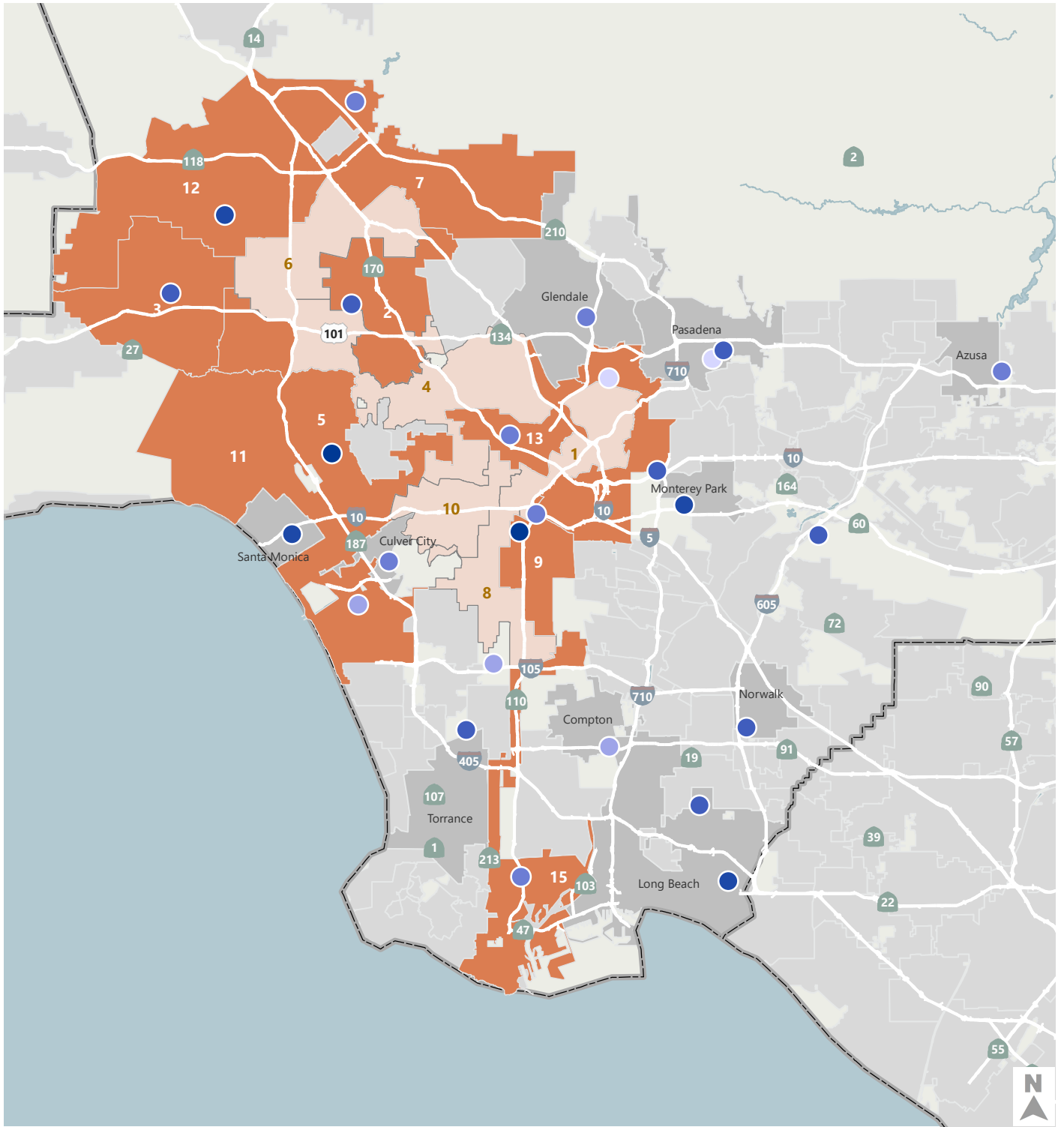
Source: Fehr & Peers, 2021.



As can be seen from **Table 13**, the VMT reduction potential from an individual pass may seem insignificant; however, there are 1.4 million eligible college students in Los Angeles County, 1.38 million (98.6 percent) of whom do not yet have a U-Pass. When applying this multiplier to the VMT reduction potential findings, the total program's VMT reduction potential grows to almost 128,000 daily VMT.⁷ **Figure 2** and **Figure 3** show the geographic distribution of U-Pass program growth potential throughout the LA Metro service area.

This VMT reduction potential analysis was performed for the U-Pass program as a whole. Individual parameters should be adjusted to better reflect the specific school's student population that is receiving the subsidy. These adjustments can have a large impact on the VMT reduction potential per pass. The **Sensitivity Analysis** section below explores some of those impacts.

⁷ Note: the current analysis uses City of LA factors reflecting student travel habits, while this expansion potential reflects county-wide student enrollment. Where possible, factors should be refined such that the location of the school matches the travel patterns of students in that geography.



Student Population Growth Opportunity

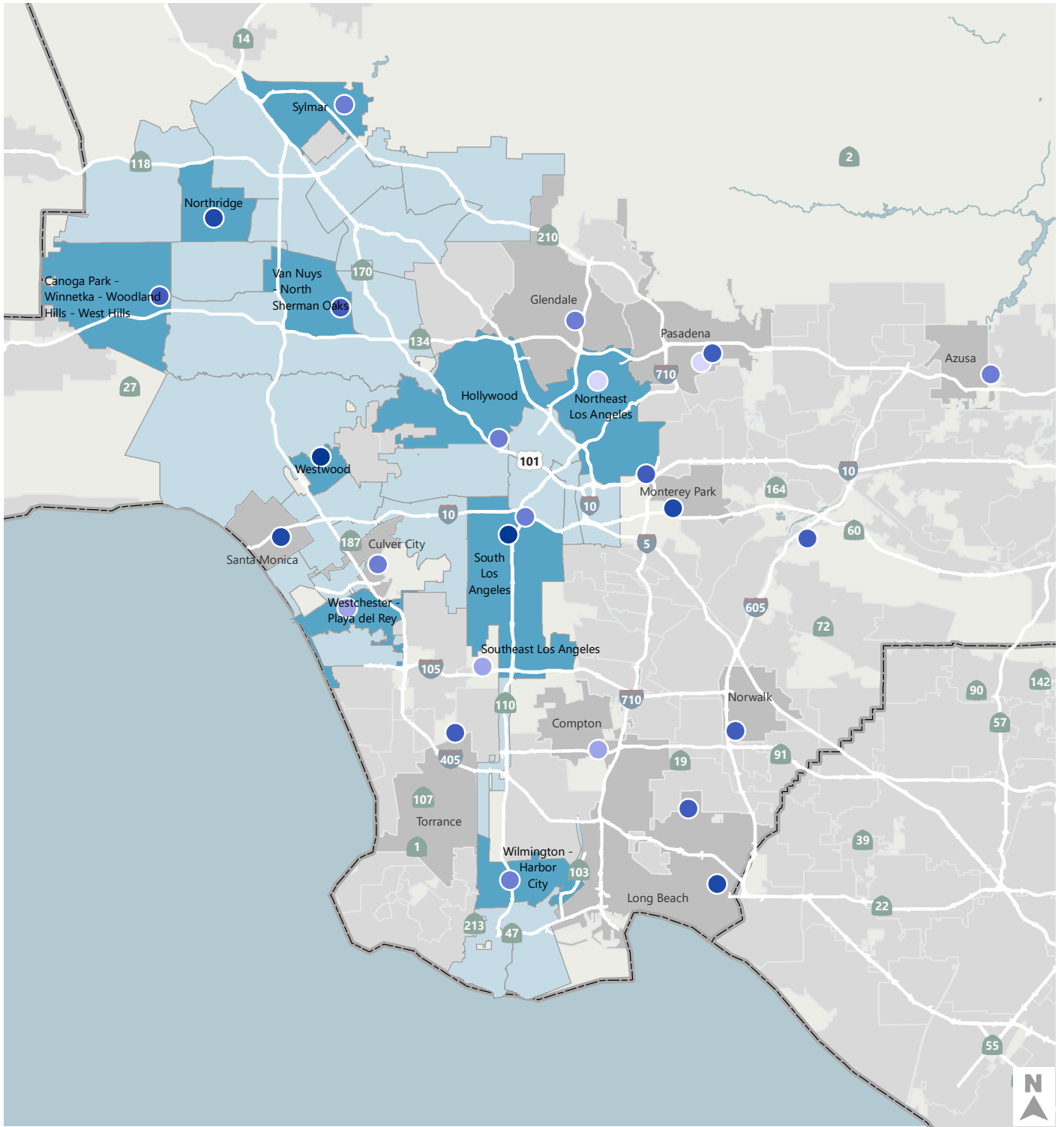
- <5,000
- 5,000 - 9,999
- 10,000 - 19,999
- 20,000 - 29,999
- 30,000 - 39,999
- >40,000

- City Council Districts
- City Council Districts Containing Participating School
- County Boundaries
- Cities
- Cities Containing Participating School

Figure 2

U-Pass Growth Opportunity by City and LA City Council Districts





Student Population Growth Opportunity

- <5,000
- 5,000 - 9,999
- 10,000 - 19,999
- 20,000 - 29,999
- 30,000 - 39,999
- >40,000

- Community Plan Areas
- Community Plan Areas Containing Participating School
- Cities
- Cities Containing Participating School
- ▭ County Boundaries

Figure 3

U-Pass Growth Opportunity by City and LA Community Plan Areas



Sensitivity Analysis

Two different scenarios were analyzed to understand how VMT reduction potential may be affected by adjustments to program design and data specificity:

- **Full subsidy:** The current structure of the U-Pass program still requires students to pay up to \$0.75 per ride.⁸ The sensitivity analysis examines how the VMT reduction potential of the program may shift if the program is restructured to provide a full subsidy to students (free, unlimited transit).
- **Localized Analysis (UCLA Case Study):** The VMT reduction potential estimated for the program uses program- and city-wide metrics. However, when the mitigation action is put in practice and an individual institution is identified to receive passes through the program, school-specific variables may be available. This case study looks at the VMT reduction potential of U-Pass when applied at a specific institution, UCLA, that maintains mode choice and U-Pass survey data specific to its student population.

Table 14 provides a summary of changes in parameters between the three scenarios. **Table 15** shows the VMT reduction potential for each scenario. All scenarios offer significant differences in overall VMT reduction potential per pass, demonstrating the significance of utilizing the most location-specific data available, as well as designing the program with VMT reduction potential in mind.

Table 14: U-Pass VMT Reduction Potential Sensitivity Analysis Variables¹

Parameter	Scenario		
	Baseline	Full Subsidy	UCLA Case Study
A Daily VMT reduction potential per U-Pass distributed (VMT per U-Pass) ¹	--	--	--
B Average transit fare without subsidy (\$) ²	\$1.75	\$1.75	\$1.75
C Subsidy amount (\$) ³	\$1.00	\$1.75	\$1.00
D Transit mode share of all college student trips (%) ⁴	14%	14%	25.5%
E Elasticity of transit boardings with respect to transit fare price (unitless) ⁵	0.43	0.43	0.43
F Percent of transit trips that would otherwise be made in a vehicle (%) ⁶	20%	20%	34%
G Average student generated daily VMT (Daily VMT) ⁷	14.0	14.0	14.0

Notes:

1. Bolded parameters indicate changes over baseline.

⁸ This is ultimately dependent on how the participating school chooses to pass on the invoiced cost of the U-Pass program. As of 2021, all but one school passes the full cost on to students.



2. Calculation for "Daily VMT Reduction Potential per U-Pass" determined based on slight refinements to the reduction formula for "Implement Subsidized or Discounted Transit Program" found in *Handbook Update Measure Quantification Methodology* (ICF, 2021).
3. The U-Pass program reduces the cost of each trip from \$1.75 to \$1.00. The "Full Subsidy" scenario explores increasing the subsidy to the full \$1.75 fare.
4. "Baseline" and "Full Subsidy" scenarios utilize California Household Travel Survey (CHTS, 2012) travel characteristics for two-year and four-year college students in the City of Los Angeles. The "UCLA Case Study" scenario utilizes transit mode share data for students presented in *State of the Commute* (UCLA, 2019).
5. *Nature and/or nurture? Analyzing the determinants of transit ridership* (Taylor, 2008). This research is the most up-to-date analysis available; however, it represents data collected prior to the full economic rebound from the 2008 recession. It should be revisited as additional research becomes available.
6. LA Metro U-Pass Survey Data. Percent of students who stated they did not previously ride transit when applying for the U-Pass program in Fall 2019. "Baseline" and "Full Subsidy" scenarios both utilize the percentage of students across the whole program, while the "UCLA Case Study" example utilizes survey results from UCLA participants specifically.
7. All scenarios utilize California Household Travel Survey (CHTS, 2012) travel characteristics for two-year and four-year college students in the City of Los Angeles.

Source: Fehr & Peers, 2021.

Table 15: U-Pass VMT Reduction Potential and Mitigation Cost

Scenario	Daily VMT Reduction Potential per Pass ¹	Number of Passes Required to Reduce 1 Daily VMT	Percent Change over Baseline
Baseline	0.09	10.8	--
Full Subsidy	0.16	6.2	75%
UCLA Case Study	0.30	3.3	223%

Notes:

1. Daily VMT reduction potential per pass calculated utilizing CAPCOA methodology. See **Table 12** for details on the calculation.

Source: Fehr & Peers, 2021.

Data Limitations

The methodology applied above reflects common technical practices used today for evaluating VMT reductions from proposed mitigation actions. However, data specific to the U-Pass program, such as ridership and survey data, would likely provide a more accurate assessment of the VMT reduction potential of the transit pass program. Due to existing data limitations rooted in data collection and analysis processes as well as privacy concerns, LA Metro ridership and survey data could not be utilized for this analysis. The **Program Recommendations** section below discusses in more detail the specific recommendations in data collection and analysis which would ensure that LA Metro data can be utilized to monitor the efficacy of the U-Pass program as a mitigation action.

Program Recommendations

Through this analysis and conversations with LA Metro, several administrative and programmatic recommendations for the U-Pass program were identified:

- **Administrative Recommendations:** These recommendations were identified to overcome current barriers in the U-Pass program’s administrative structure for the program to function as a mitigation action.
- **Programmatic Recommendations:** These recommendations were identified to help the U-Pass program better align with the action criteria identified in the **VMT Mitigation Program Framework** chapter.
- **Pilot Program Structure Recommendations:** These recommendations were identified through stakeholder engagement and the literature review to ensure the success of the U-Pass as a pilot mitigation action.

Administrative Recommendations

U-Pass Program Fee Collection

Unlike a typical group transit pass program where passes are purchased at a fixed cost regardless of use, the cost of a U-Pass is dependent on frequency of use and determined at the end of each school semester. This level of uncertainty in cost will likely be a challenge for project applicants who are interested in utilizing the U-Pass program as a VMT mitigation action. Instead, LA Metro could create a flat rate for each pass that project applicants can pay up front to cover the cost of the program, similar to the fee structure of an E-Pass⁹. This approach would provide the co-benefit of reducing the administrative burden of invoicing for LA Metro.

The cost of a U-Pass should be right-sized to cover the administrative costs of the program and maximize the subsidy amount received by students without being cost prohibitive to project applicants.

U-Pass Data Collection and Analysis

While LA Metro and TAP¹⁰ have robust data collection efforts both through surveys and fare collection, data is not currently collected with the specific needs of VMT mitigation monitoring in mind. The following recommendations would better align data collection efforts with the specific analysis requirements of a mitigation action:

- **U-Pass Survey Data:** LA Metro has recognized from the onset of the program the importance of collecting survey data from U-Pass holders and has collected on-boarding survey data since its inception. However, the survey often varies from year to year and institution to institution. Further, participants are typically only surveyed once (upon first enrollment in the program) and questions are geared more toward understanding existing transit fare type, and less on overall travel characteristics. Moving forward, LA Metro could establish a standard survey used across all

⁹ The LA Metro E-Pass program is an employer pass program that provides employees of participating companies full access to Metro transit services. Participating employers are required to purchase a pass for each employee at a flat, annual rate.

¹⁰ TAP operates a multimodal payment system for transportation programs, including 26 participating transit systems and LA Metro Bike Share, throughout LA County, providing users with a plastic TAP card that can be used seamlessly across services.



participating schools designed to understand travel behavior, including a travel journal to understand mode choice and trip length across different trip types, and demographic and socioeconomic characteristics. Further, U-Pass holders could be surveyed once a year to understand changes in travel behavior. Understanding changes in travel behavior of U-Pass holders over time will help substantiate the efficacy of the U-Pass program in reducing VMT.

- **Ridership Data:** TAP data is a necessary component for understanding frequency and length of trips for U-Pass holders. With robust ridership data, reduced VMT can be analyzed at a much finer granularity to provide a more realistic understanding of VMT reduction potential per pass and for individual institutions. Further, analysis of ridership data can help identify trends that lead to increased or reduced transit usage. While TAP data is available, its current use for the U-Pass program is limited to a summation of boardings for invoicing purposes. Moving forward, a more thorough analysis of the ridership data would provide insights on trip length and frequency.
- **Data Specification:** A major barrier to fully utilizing existing U-Pass survey and TAP data is that the two datasets are currently disconnected from one another. The process to link U-Pass TAP card numbers to U-Pass survey data is entirely manual and time-intensive. LA Metro could automate this effort and ensure that survey and ridership data are both linked to a unique U-Pass TAP card number through the implementation of a data specification. The data specification should be in alignment with County data sharing policies and State Highways Code 31490 to ensure comprehensive and uniform data collection to support robust program analysis and monitoring. This data specification should be built in partnership with Los Angeles County Counsel to ensure countywide policies on data collection and sharing are integrated into the specification.

Programmatic Recommendations

The **Mitigation Action Selection** section of the report documents the outcomes of the literature review and stakeholder engagement processes in identifying a series of action criteria that each mitigation action should be measured against both for prioritization and inclusion in the VMT mitigation program and for on-going monitoring once the action has been established. **Table 11** (above) provides a qualitative assessment of how the U-Pass program works to meet each of these criteria. **Table 16** (below) summarizes specific programmatic recommendations to help the U-Pass program better align with the established criteria and to maximize its efficacy as a VMT mitigation action.

Table 16: U-Pass Programmatic Recommendations

Action Criteria	Suggested Programmatic Refinements
VMT Reduction Potential	<p>Consider expanding the U-Pass program to provide a full transit subsidy to participating students to increase the VMT reduction potential of the program. Further, consider switching to an “opt-out” format from an “opt-in” format for students at participating schools. Project applicants who choose to utilize the U-Pass program as a mitigation action would sponsor a school in its entirety as opposed to individual students at participating schools. These programmatic changes would offer the co-benefits of lowering administrative costs, removing barriers to student participation in the program, and increasing the program’s VMT reduction potential.</p> <p>Update the VMT reduction potential analysis with the most up-to-date and location-specific data available. For example, update data to reflect the specific school’s student population once a school is assigned to the project applicant.</p>
Additionality	<i>No immediate refinements suggested.</i>
Equity	Consider prioritizing schools that have greater shares of low-income and person of color student populations for receiving subsidized U-Passes through the pilot program.
Regional mobility	<i>No immediate refinements suggested.</i>
Cost Effectiveness	Additional analysis will be required to determine the cost of the program to LA Metro in order to right-size the cost of participation in the program to project applicants and support the overall cost effectiveness of the program.
Marketing approach	Currently, marketing and promotion of the U-Pass program is conducted largely at the discretion of participation schools. The use of U-Pass as a pilot program should be paired with a standardized, strategic marketing program that is aimed at increasing students’ awareness of the program.

Pilot Program Recommendations

In addition to the program recommendations outlined above, the following recommendations were identified through stakeholder engagement and the literature review conducted for this study:

- **Pilot Program Timeline:** The suggested timeline from both the TAC and the literature review for a pilot program of this scale and complexity is five years, to work through implementation challenges and account for initial unevenness in the data as the program becomes established.
- **Program Monitoring:** Performance metrics should be identified for each of the action criteria established in the **Mitigation Action Selection** section to evaluate the efficacy of the U-Pass program as a VMT mitigation action.
- **Data Collection and Analysis:** A data specification should be developed to streamline the data collection and analysis processes for the U-Pass program. The data specification should be inclusive of survey and ridership data and created in consultation with LA County Counsel.



- **Ongoing Stakeholder Engagement:** LADOT, SCAG, and LA Metro should continue on-going coordination with key stakeholders in the region, including the already established Technical Advisory Committee with additional representatives added to the TAC as needed throughout the pilot program.

Next Steps

As described throughout this report, this study represents the first effort at exploring and defining a multi-agency VMT mitigation program for Southern California. Throughout the report, recommendations and areas for further exploration are described to help guide the next phases of work.

Key areas of focus for follow-up efforts include:

- Continued engagement with the TAC, project partners, and other key stakeholders
- Additional engagement with a broader set of stakeholders, including the general public and advocacy organizations
- Conduct deeper investigation into the financial/economic and legal/regulatory implications of a VMT mitigation program
- Establishment of a scalable framework for an initial VMT mitigation program
- Implementation of the U-Pass program as a pilot mitigation action
- Analysis to establish the VMT reduction potential of a broader set of mitigation actions that would clear the additionality test
- Development of a phased transition from pilot implementation to full mitigation program

SCAG's continued investment in this policy area will ensure that Southern California remains on the leading edge in the establishment of new opportunities for VMT mitigation.

Appendix A: Project Factsheet

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. SCAG has taken the lead on exploring the possibility in Southern California.

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

PROGRAM OPTIONS

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

SCAG 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-level¹ 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.

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.



FOR MORE INFORMATION
on Metro's U-Pass Program, visit www.metro.net/riding/colleges/u-pass-program/



CONTACT
Mike Gainor at gainor@scag.ca.gov for inquiries on SCAG's VMT Mitigation Program efforts



VMT MITIGATION PROGRAMS

IMPLEMENTING THE U-PASS PROGRAM

SCAG, in partnership with **LADOT & METRO**, are exploring piloting the existing **U-PASS** (Universal College Student Transit Pass) program as a mitigation action for a pilot VMT Exchange program.

AGENCY OVERSIGHT & FUNDING

The U-Pass program is well established and already has a **system in place for private sponsorship of passes**.

Who pays who?

Project Applicant sponsors new student transit passes, paying LA Metro or lead agency to distribute the passes, scaling up to meet their VMT reduction needs.

PROGRAM CRITERIA & EFFICACY

The U-Pass program **clears the additionality test** because the passes would not have been purchased otherwise. Evidence from recent research demonstrates that transit passes could reduce VMT by up to 5.5 percent¹ and the U-Pass program has already proven to attract new transit riders, with 1 in 5 participants not having ridden transit before receiving a pass.²

What types of mitigation actions can be funded?

Funds must go towards new transit trips to qualify as a VMT reducing mitigation action. This could be achieved through enrolling new universities and new student riders in the UPass program, or expanding existing UPass university programs to attract new riders.

MONITORING

The U-Pass program already collects **user survey and ridership data**. One of the key goals of this pilot is to understand the potential for this data to be used both to determine the efficacy of the program and to monitor its growth.

What is being evaluated?

In partnership with SCAG, LADOT & Metro will continue to evaluate the performance of the pilot each semester, taking into account the number and length of new transit trips that replace vehicle trips. If possible, the travel patterns of new participants will be evaluated before and after receiving their passes to verify VMT changes.

CEQA COMPLIANCE

What is the CEQA mitigation potential?

This program may allow for full mitigation depending on the available evidence from LA Metro regarding VMT reduction performance. Absent before and after studies of performance, mitigation effectiveness would likely rely on current academic research, which only provides a range from 0-5.5%. With 0 being the lower end of the range, mitigation effectiveness will have limited confidence that should be reflected in the impact findings.

GEOGRAPHY & SCALE

The U-Pass program provides an **opportunity for equitable distribution of transportation funding and has the potential to scale up to meet mitigation demand**. The U-Pass program partners with 25 colleges throughout LA County and is growing, allowing for geographic distribution of benefits throughout the county. Currently, participation includes just 1% of the 1.4 million students enrolled in post-secondary education at public institutions in Los Angeles County (ibid), allowing for scalability as the mitigation program grows.

DURATION

For how long must the project applicant participate?

The duration of project applicant participation will depend on how the VMT impact and mitigation measure is presented in their EIR, and may require performance monitoring to demonstrate VMT reduction can be maintained over time.

EXAMPLE TRANSIT PASS POTENTIAL FOR REDUCING VMT

Weekly Travel Without Transit Pass

72 miles 2 miles 0 miles

A 'hypothetical' student is mainly auto-dependent, using their car to travel between SCHOOL, WORK, their PARENTS', and HOME. Sometimes they choose to walk to nearby locations, like a LOCAL COFFEE SHOP.

Weekly Travel with New Mitigation Program-Funded Transit Pass

43 miles 0 miles 31 miles
↓-29 **↓-2** **↑+31**

The same student now has **access to a transit pass** and replaces their car commute to SCHOOL with transit, as well as trips to WORK and to nearby destinations. They still use their car on occasion for longer-distance trips.

↓-29 **This reduction can be accredited to the transit pass and therefore represents the "additionality" of the program, which would not have been funded otherwise.**

¹ Handbook Update Measure Quantification Methodology, ICF, 2021.

² Class Act: An Assessment of Los Angeles Metro's U-Pass Program, T. Ryan Yowell, 2019.

Appendix B: TAC Meeting Summaries

SCAG VMT Bank/Exchange Pilot Technical Advisory Committee Meeting Summary

January 13, 2021

9:00 AM – 11:00 AM

9:00-9:10 Introductions

- Agenda
- Role of the TAC

9:10-9:25 Background

- SB 743
- Existing VMT Mitigation tools in Los Angeles

9:25-9:50 VMT Banks & Exchanges

- Benefits and Challenges
- Introduction of Framework

9:50-10:00 Pilot Project Introduction

- Introduction to the Pilot Project
- Goals of the Pilot Project

10:00-10:05 Meeting Break

10:05-10:30 Breakout Sessions

10:30-10:50 Report Back

10:50-11:00 Next Steps

LOCATION:

Microsoft Teams

[Click here to join](#)

Meeting Attendees

Name	Organization/Agency	Email	Breakout Group
Chris Joseph	CAJA/VICA	chris@ceqa-nepa.com	B
Jennifer Gress	California ARB	jennifer.gress@arb.ca.gov	A
Heather King	California ARB	heather.king@arb.ca.gov	C
Alyssa Begley	Caltrans	alyssa.begley@dot.ca.gov	D
Robert Liberty	Cascadio Partners	Robert@Cascadia-Partners.com	A
Laura Cornejo	City of Pasadena	lcornejo@cityofpasadena.net	A
Conrad Viana	City of Pasadena	cviana@cityofpasadena.net	B
Bryn Lindblad	Climate Resolve	blindblad@climateresolve.org	D
Ron Milam	Fehr & Peers	R.Milam@fehrandpeers.com	A
Natalie Chyba	Fehr & Peers	N.Chyba@fehrandpeers.com	D
Jeremy Klop	Fehr & Peers	J.Klop@fehrandpeers.com	B
Chelsea Richer	Fehr & Peers	c.richer@fehrandpeers.com	C
Karen Heit	Gateway Cities COG	kheit@gatewaycog.org	A
Nancy Pfeffer	Gateway Cities COG	nancy@gatewaycog.org	B
Kathryn Phelan	LA City Attorney's office	kathryn.phelan@lacity.org	D
Jason Mccrea	LA City Planning	jason.mccrea@lacity.org	A
Milena Zasadzien	LA City Planning	milena.zasadzien@lacity.org	B
Kathleen King	LA City Planning	kathleen.king@lacity.org	C
John Bellas	LA City Planning / Michael Baker International	john.bellas@lacity.org	A
Kent Tsuji	LA County Public Works	KTSUJII@dpw.lacounty.gov	B
Jeff Pleytak	LA County Public Works	jpleytak@dpw.lacounty.gov	C
Nick Maricich	LA Mayor's Office	Nicholas.Maricich@lacity.org	B
Alexander Wikstrom	LADOT	alexander.wikstrom@lacity.org	C
Kay Sasaki	LADOT	kay.sasaki@lacity.org	C

Meeting Attendees

Name	Organization/Agency	Email	Breakout Group
David Somers	LADOT	david.somers@lacity.org	D
Tomas Carranza	LADOT	tomas.carranza@lacity.org	B
Jay Kim	LADOT	jay.kim@lacity.org	D
Rubina Ghazarian	LADOT	rubina.ghazarian@lacity.org	D
Avital Shavit	Metro	ShavitA@metro.net	A
Mark Yamarone	Metro	yamaronem@metro.net	A
Jocelyn Feliciano	Metro	FelicianoJ@metro.net	B
Paul Backstrom	Metro	backstromp@metro.net	C
Julio Perucho	Metro	PeruchoJ@metro.net	C
Devon Deming	Metro	demingd@metro.net	A
Chris Ganson	OPR	chris.ganson@opr.ca.gov	B
John Bwairie	San Fernando Valley COG	john@sfvkog.org	D
Eric Shen	San Gabriel Valley COG	eshen@sgvcog.org	A
Michael Gainor	SCAG	gainor@scag.ca.gov	A
Steve Lantz	South Bay Cities COG	lantzsh10@gmail.com	C
David Goldberg	VICA	david@agd-landuse.com	A
Neill Brower	VICA	nb4@JMBM.com	C
Riley O'Brien	Westside Cities COG	riley@estolanoadvisors.com	C

The following summarizes comments (C) and questions (Q) that arose during the TAC meeting.

Agency Oversight & Funding

- C: Avoiding inequitable outcomes would require very clear rules at the county, region, or state level. A relevant example may be SB 535's requirement that at least 25% of Cap & Trade funds must go to state-designated disadvantaged communities. *Riley O'Brien*
- C: If you are interested to follow the SGV Regional VMT Mitigation Fee Structure program, feel free to contact me at eshen@sgvcog.org. *Eric Shen*
- C: Communities will hold local jurisdictions accountable regardless of whether this program is administered at a sub-regional or regional scale. *John Bwarie*
- C: The administrator needs to be an independent, transparent agency or organization. *Alyssa Begley*
- C: There needs to be a cap on admin costs to ensure project delivery. *Bryn Lindblad*
- C: In general, Breakout A preferred not to introduce another part into the entitlement and environmental review process for land use project.
- C: One oversight option discussed was the lead agency controlling all "fee" payments from the applicant and then distributing the money to sub-regional or regional mitigation programs.
Breakout A
- C: The idea of a broker was floated in response to the concern about creating another party. This could be a voluntary partner for the applicant, maybe similar to TerraPass for GHG offsets.
Breakout A
- C: Mitigation programs could be developed at a state, regional, and local level. A local agency that only wants local mitigation could choose to contribute to just the local bank. *Breakout A*
- Q: What role could COGs play in substantiation or auditing? *David Somers*
 - C: COGs all have different technical capabilities, which should be considered when thinking about who's administering this program. *John Bwarie*
- Q: Is the bank administrator also managing the timing of the credit improvement with the buildout of the development projects? *John Bellas*
- Q: Would each city have to adopt this process, or opt-in to use once it is established? *John Bwarie*
- Q: Could a third party (either a JPA or a non-profit group) operate the program? If so, would that make it easier since decision-makers are removed from the process? *Kathryn Phelan*

Program Criteria & Efficacy

- C: If cost effectiveness of VMT reduction is the only guiding criterion, that could likely exacerbate inequities in access to multimodal mobility. Transit deserts wouldn't get mitigation efforts. *Bryn Lindblad*

- C: If we allow individual agencies to de-prioritize equity, we will not get an equitable outcome. *Nancy Pfeffer*
- C: We need to ensure that there is a range of metrics considered, not simply cost. Access to jobs or opportunity metrics are critical to reducing transit deserts. *Bryn Lindblad*
- C: We need to ensure we are including community engagement and values in program criteria. *Bryn Lindblad*
- C: Breakout A members were supportive of focusing mitigation to on-site only given concerns around community benefit.
- Q: How do we avoid “double dipping” when setting up program criteria? *Conrad Viana*
- Q: Is the criterion for the exchange “cost” or “cost per VMT reduction” (cost effectiveness)? *Nancy Pfeffer*
- Q: How does the mitigation bank reconcile equity goals with VMT reduction goals? *Julio Perucho*
- Q: How do we balance community asks and values with actual VMT reduction potential? These may not always be in line. *David Somers*

Implementation

- C: Another potentially relevant model could be Regional Advanced Mitigation Programs (RAMPs). RAMP’s structure is such that you get more “bang-for-your-buck” if mitigation is pooled and done up front *Bryn Lindblad*
- C: Exchanges can help set the prices for VMT offsets. *Robert Liberty*
- C: VMT calculations are not standard across agencies. We will need to standardize the methodology for converting VMT impacts to credits. *Conrad Viana*
- C: My clients (project applicants) will want to know: 1) How long will this process take? 2) How much will this cost? 3) When do they pay? *Chris Joseph*
- C: It needs to be a mix of the two (VMT banks and exchanges) – banks can dry up very quickly and need substantial upfront investment. *Neill Brower*
- C: I’ve heard from a developer (LA, 2018) that additional opportunity and flexibility to mitigate was not welcomed compared to a finding of infeasibility or SOC. *Robert Liberty*
- C: Banks will be more desirable than exchanges to developers since it is just a fee, while the government will prefer exchanges since they can extract more out of dollars. *Breakout C*
- C: We need to define the stakeholders early on (e.g., developers, public, transit riders) to ensure the programs are useful. *Breakout C*
- C: Ensuring equitable implementation of projects will be challenging. *Breakout C*
- C: Nothing will be simple about this process and there is still so much uncertainty of how this program can be implemented. *Breakout C*
- C: Creating the database of viable strategies and projects will be a hard lift. *Breakout C*
- C: Banks seem like the more effective tool for meeting goals of AB32. *Breakout C*

- C: The valuation of VMT seems foundational to the question of how a bank would work. *Breakout C*
- C: Projects that are bound to Title VI requirements (such as transit passes) can be assumed to be more equitable. *Breakout C*
- C: Developers may not support a program where bank or exchange costs vary substantially each year; they'll want consistency in cost expectations. *Breakout A*
- C: There needs to be thought put into how to sell this idea to the public. *Breakout B*
- C: There are general concerns about equity in unintended consequences (e.g., high-income to low-income flows, engagement). *Breakout B*
- C: The Pasadena community is still thinking about LOS as mitigation. This type of program will take time to ingrain into discussions and processes. *Breakout B*
- Q: Would we be looking to lean on VMT calculation standards from existing standards at the fed (e.g., CMAQ standards) or state ([Carbon offsets markets](#)) level? *Avital Shavit*
- Q: How do we resolve additionality issues for project lists in existing planning documents to ensure they are applicable as mitigation projects? (e.g., Mobility Plan 2035 project lists) *Bryn Lindblad*
- Q: How is it possible to reconcile local LOS maintenance standards still in place and state mandated VMT reduction required by SB 743, when the LOS maintenance requirements undercut the VMT reduction efforts, because of, among other things, induced demand? *Robert Liberty*
- Q: What is the role of the City Planning Commission? *Breakout C*

Legality

- C: In *Golden Door Properties LLC v. Co of San Diego* in saying Climate Action Plan relying on GHG credit offsets was inadequate, the Court pointed to the cap-and-trade statutes and regulations in holding such offsets must be "real, permanent, quantifiable, verifiable, enforceable, and additional to any GHG emission reduction otherwise required by law or regulation, and any other GHG emission reduction that otherwise would occur." *Kathryn Phelan*
- C: There is a need to build in a safety margin of VMT reduction potential in case there are reversals or re-evaluation of potential of what is being claimed in CEQA. CARB's cap-and-trade model may have helpful guidance on this. *Breakout C*
- Q: Is "VMT mitigation bank" a legislatively defined term? *Eric Shen*
- Q: Interesting comment about the legal cross-current between CEQA, LOS and VMT. How are those issues litigated? *Robert Liberty*
 - Because SB 743 only applies to CEQA review, it is still possible that LOS policies will result in continued roadway capacity expansion. CEQA review for these projects only requires that impacts be disclosed and mitigated to the extent feasible. This may create future legal challenges around who gets to determine feasibility. *Ron Milam*

Geography & Scale

- C: Despite its aspirations, SB 535 has not resulted in that share of Cap & Trade funds reaching Gateway Cities. *Nancy Pfeffer*
- C: The opportunity to exchange offsets with increases over big distances allows for far more equitable distribution of benefits and harms from VMT increases. For example, a new subdivision in a wealthy suburb can be offset with a low-income student bus pass in a low-income neighborhood. *Robert Liberty*
- C: An example of an exchange that enhances equity is appealing, but I'm concerned about the potential of exchanges/banks worsening inequities. For example, a developer building a high-rise in a low-income neighborhood could theoretically purchase credits for a bike path in a wealthy suburb. How do we avoid these situations and push scenarios toward the more equitable example Robert described (e.g., new housing in wealthy suburbs paying for low-income bus passes)? *Riley O'Brien*
- C: We are hoping to use this as an opportunity to ensure equitable distribution of transportation funding. *Jay Kim*
- C: Cost of implementation throughout the region and state may vary. Similarly, the effectiveness of implementation of the same project in different communities may vary. *Breakout B*
- C: Stakeholders may not feel so receptive towards projects that fund mitigations outside the neighborhood, but this is necessary for equity. *Breakout C*
- Q: How do we consider localized impacts of projects that have purchased mitigation projects occurring somewhere else? *Nancy Pfeffer*
- Q: How can subregional efforts from COGs intersect with the greater region? *Eric Shen*

Monitoring & Data Needs

- C: Enforceability and monitoring seem to be very big questions. *Nancy Pfeffer*
- Q: What is the enforcement mechanism for VMT-reducing project implementation? Is there post-implementation quantification necessary to prove VMT mitigation is working? *Julio Perucho*

Duration

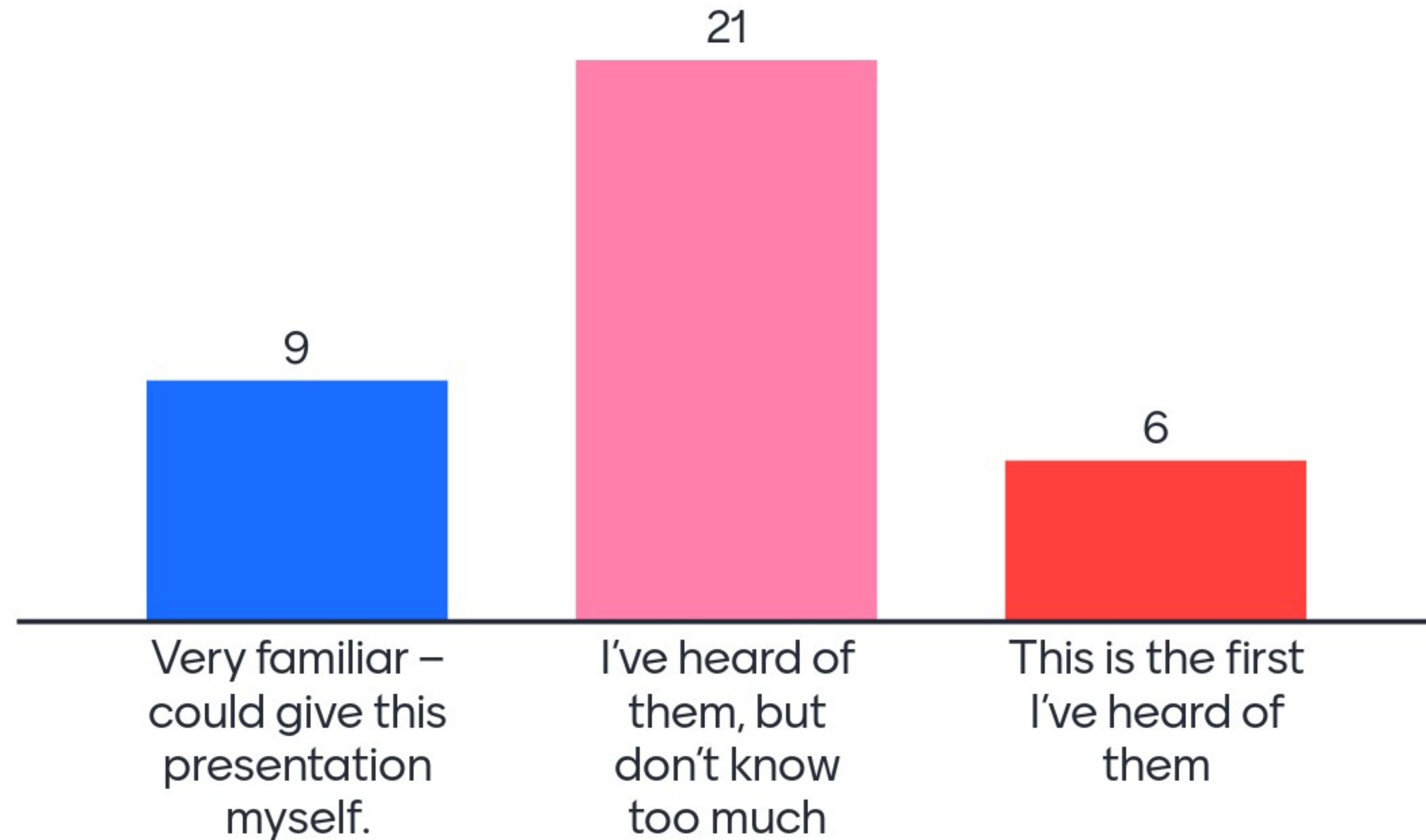
- C: The main benefit of mitigation banking for wetlands was a one-time cost. Payment in perpetuity will almost never be palatable for any developer. This is likely less of an issue with physical improvements than with programs. *Neill Brower*
- C: Wetland banking is a one-time payment, the management in perpetuity is covered in that payment. *Breakout C*
- C: Duration needs to be based on legal expectations, similar to AB 1600. *Breakout A*

- Q: If the options are either funding VMT mitigation programs in perpetuity or preparing a statement of overriding considerations in your EIR, then why would anyone choose the former?
Julio Perucho

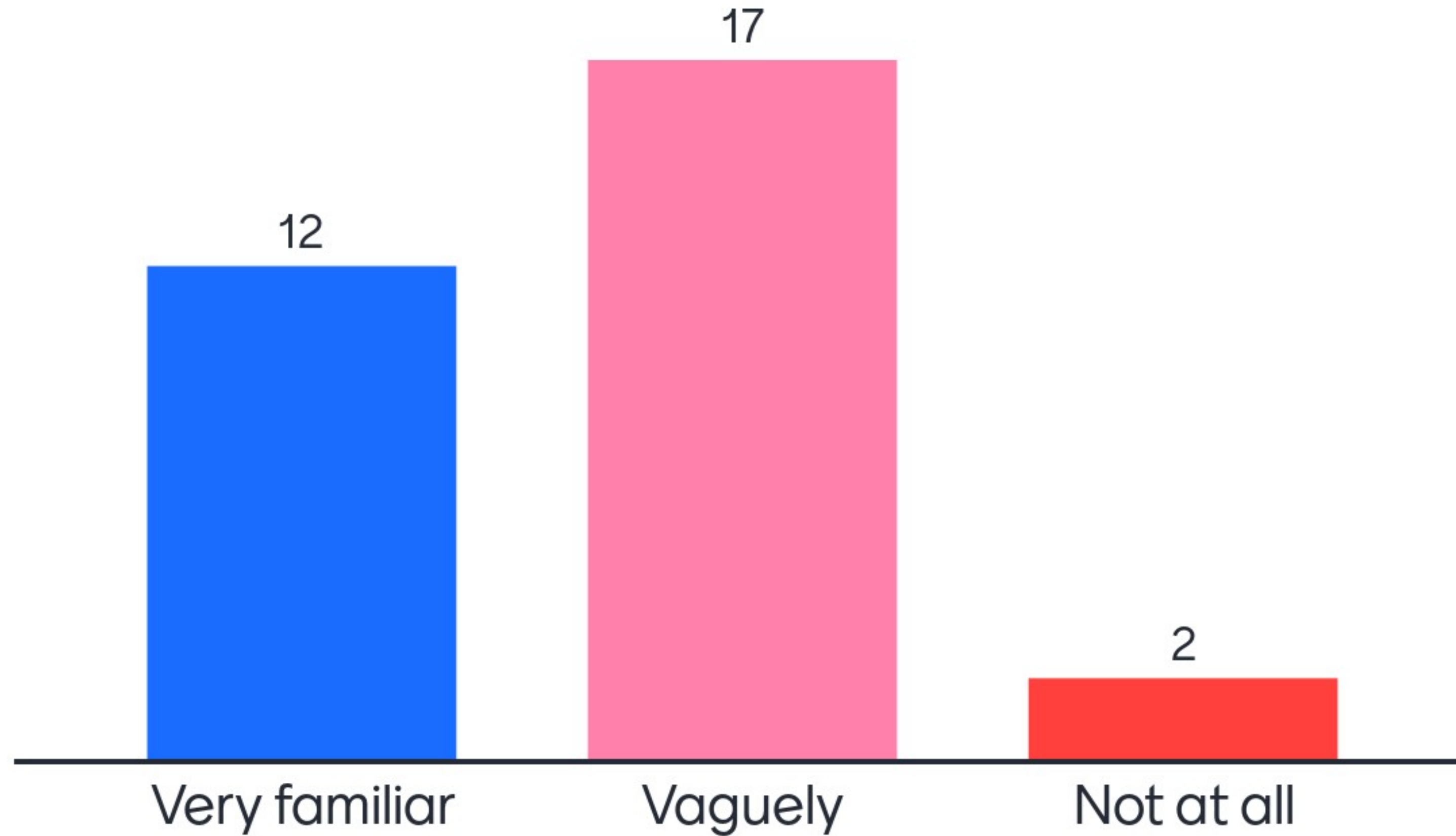
Pilot Program

- C: It would be helpful to have a few VMT bank/exchange projects provide their VMT reduction and cost (based on existing standards) to have a more applied example of what these may look like. I can help provide examples – we could pull all of LA County CMAQ funded projects which already have GHG/VMT analyses available. *Avital Shavit*
- C: UCLA's BruinGo program could also provide data for this. *Neill Brower*
- C: Transit pass programs would no longer be an option if we go fareless in LA. *Bryn Lindblad*
- C: The Caltrans farm worker transportation program is definitely worth considering as an equity oriented offset program that is already documenting travel data. *Robert Liberty*
- C: Survey participation can help with the additionality question. *Breakout B*
- C: Administrators must provide clear roles for stakeholders and guidance on the project. *Breakout C*
- C: Developers may not want to participate in the pilot given how much time it will take. *Breakout C*
- C: While the pilot could be successful, routine maintenance after the pilot (e.g., continuing to fund the transit pass program) will be a challenge. *Breakout C*
- C: Stakeholder buy-in will be key to a successful project – both the end users and the developers. *Breakout C.*
- Q: Would there be a consideration for subsidizing system operations costs to fund the system in place of fares? *Karen Heit*

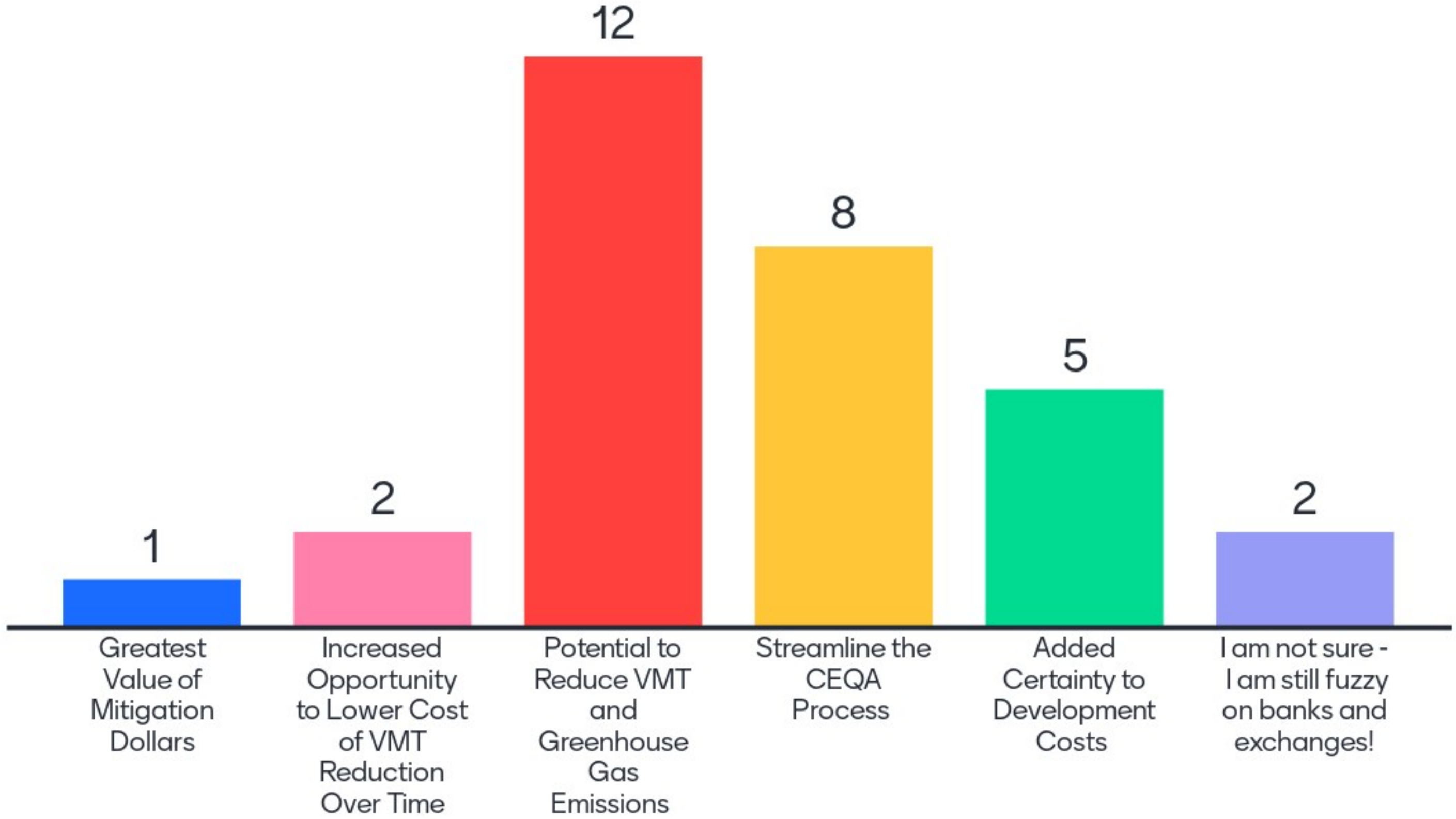
How familiar are you with the concept of a VMT Bank or VMT Exchange?



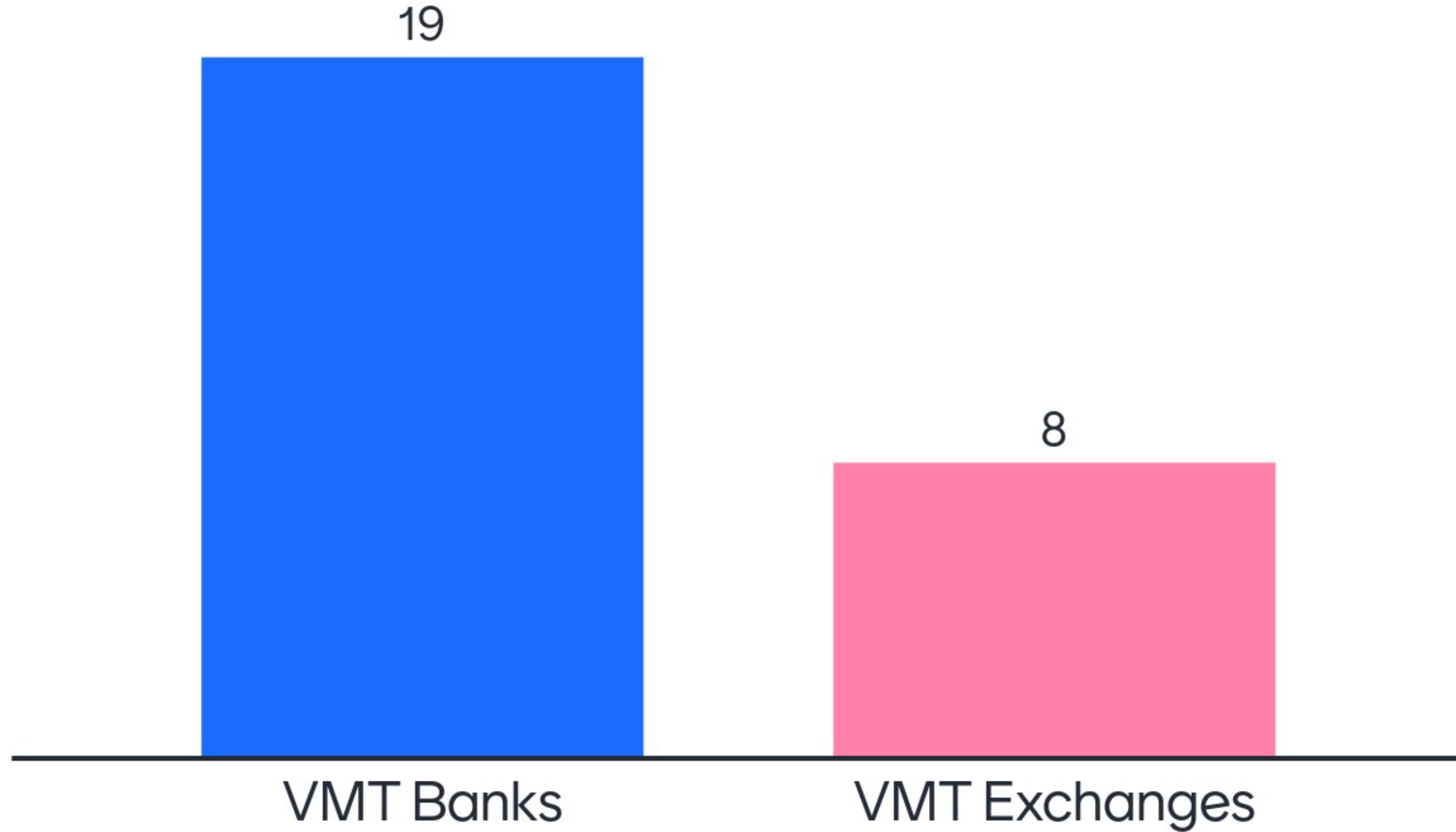
How familiar are you with the concepts of cap & trade or wetland mitigation banking?



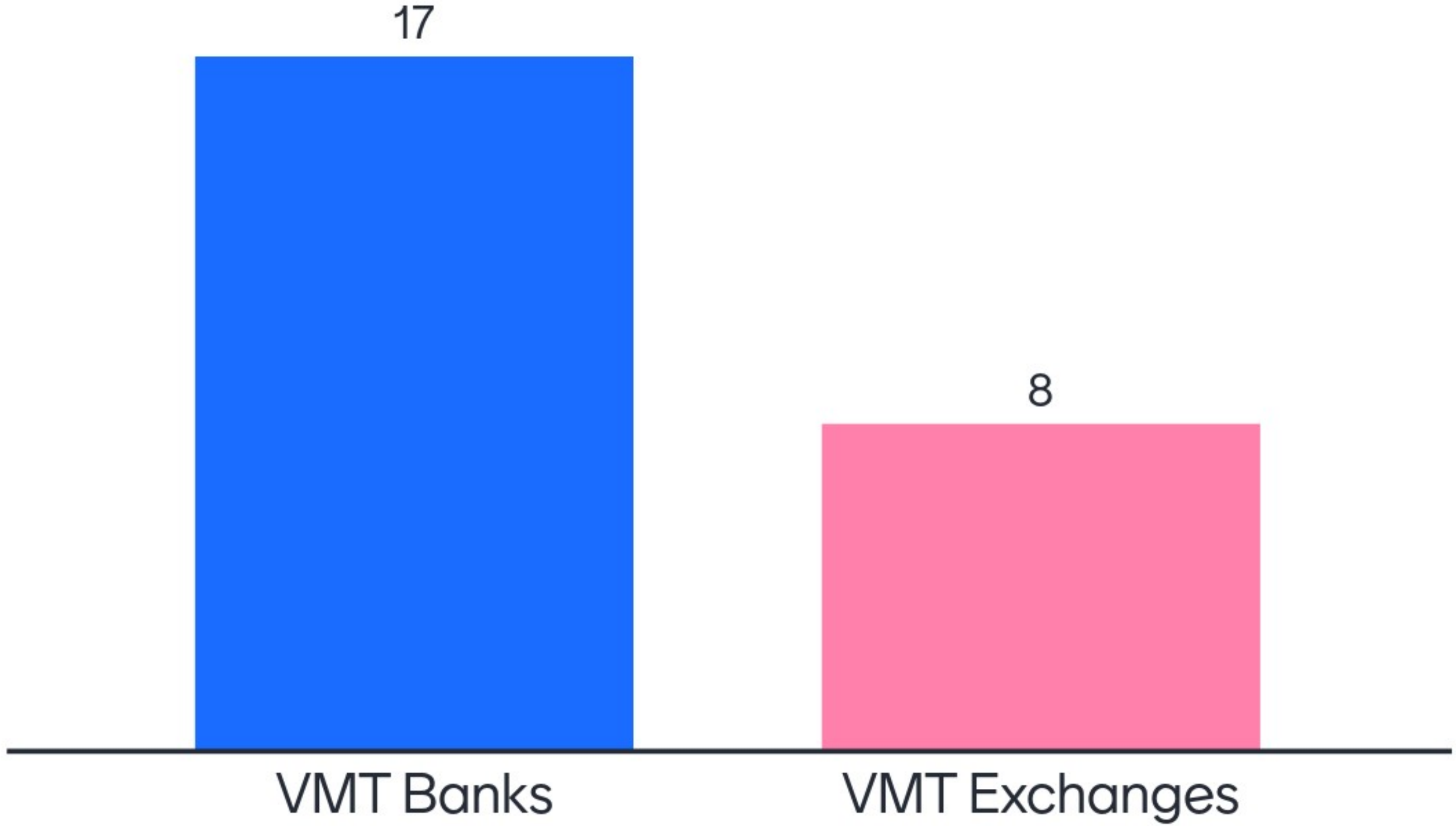
What is the top problem a VMT Bank or Exchange could help solve?



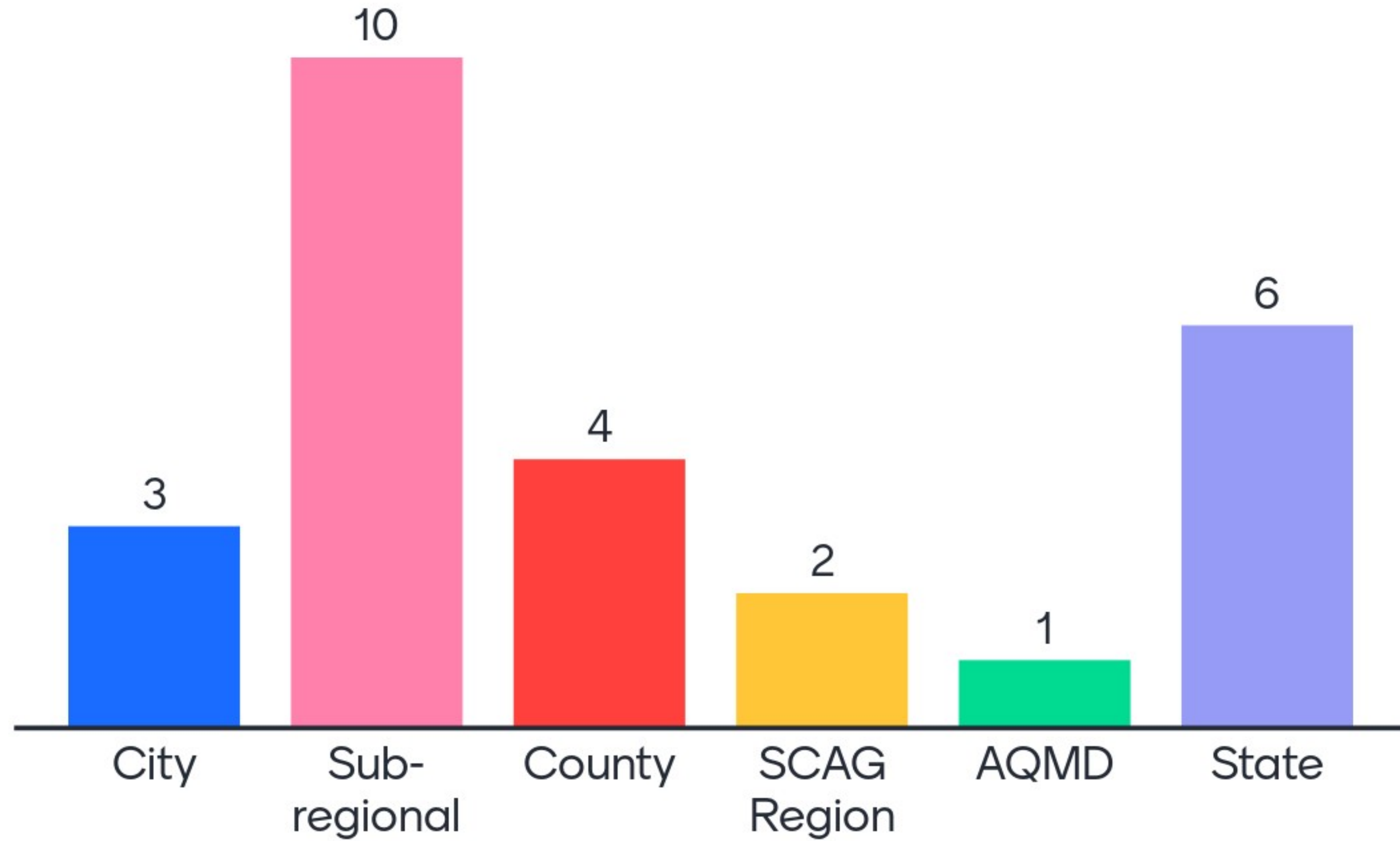
Which one is more intuitive to you?



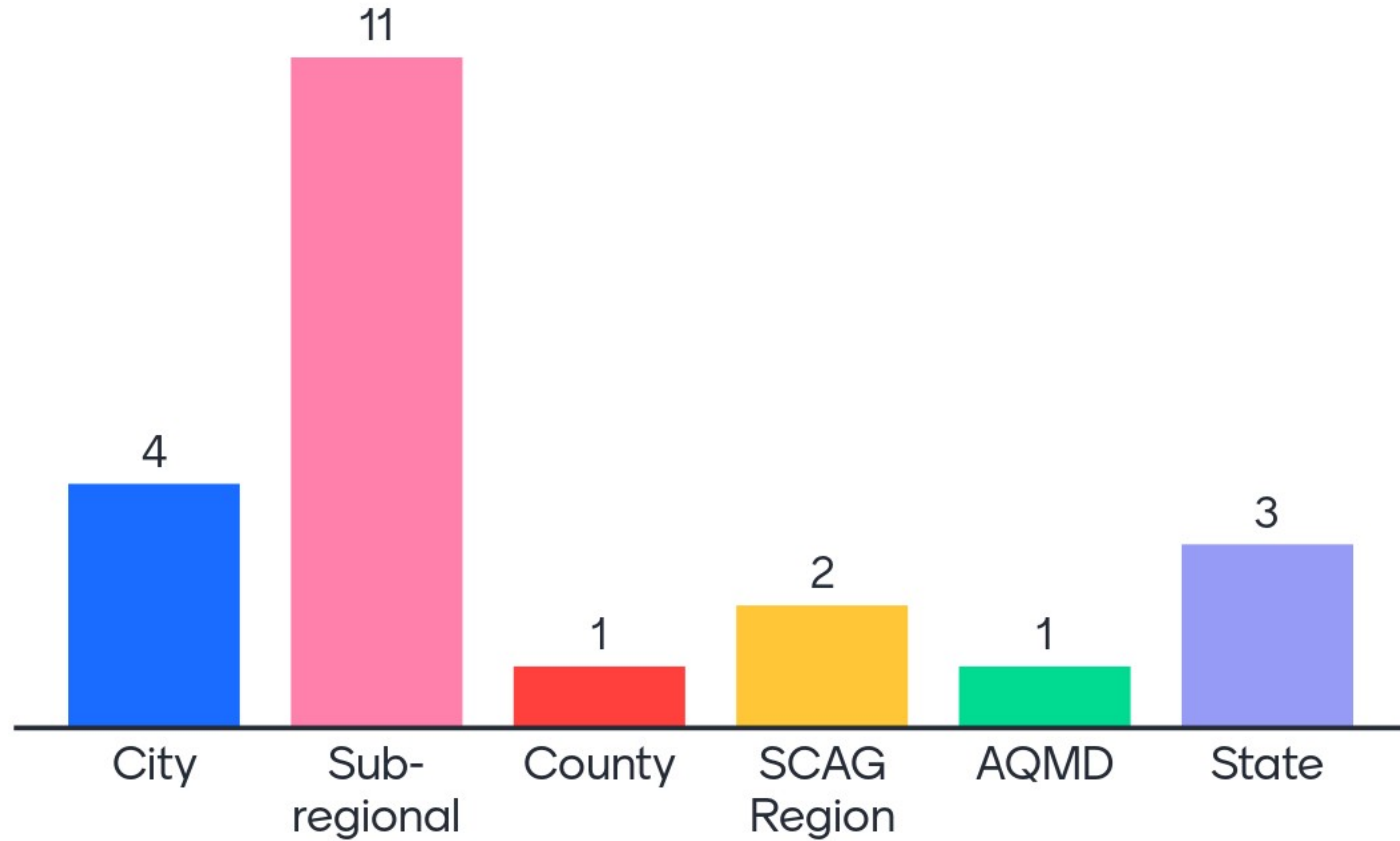
Which of the two do you think would be most successful in Los Angeles?



What geographic scale do you think makes the most sense for a VMT Bank?



What geographic scale do you think makes the most sense for a VMT Exchange?



VMT Mitigation

Responding to the Challenge Of VMT Reduction



Agenda

9:00-9:10am

Introductions

9:10-9:25am

Background

9:25-9:50am

VMT Banks & Exchanges

9:50-10:00am

Pilot Project Introduction

10:00-10:05am

Meeting Break

10:05-10:30am

Breakout Sessions

10:30-10:50am

Report Back

10:50-11:00am

Next Steps

WELCOME!

The Role of the TAC

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

- Share insights on the interest and need of a VMT Mitigation Bank/Exchange Program
- Provide guidance on program criteria and key considerations
- Review deliverables and help shape the Pilot Program
- Spread awareness of this program in communities across LA County



SB 743

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

TECHNICAL ADVISORY

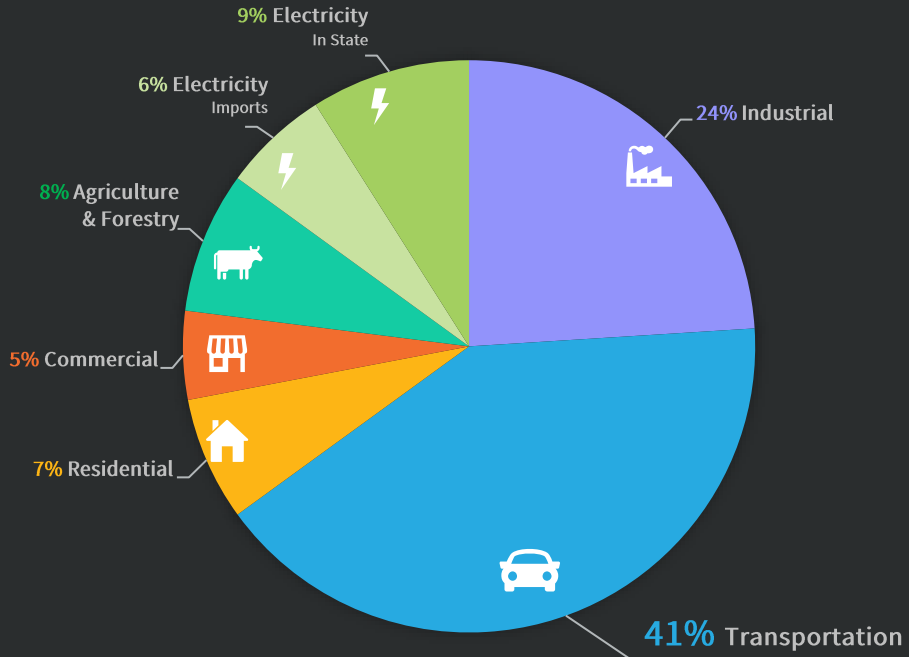
ON EVALUATING TRANSPORTATION
IMPACTS IN CEQA



December 2018

CA Greenhouse Gas Emissions Snapshot by Sector

2018 CA CARBON EMISSIONS



Transportation sector makes up a smaller slice of the pie in the City of Los Angeles - 33%

Source: <https://ww2.arb.ca.gov/ghg-inventory-data>; City of Los Angeles 2015 Community-Wide Greenhouse Gas Emissions Inventory

Interactive Poll

What percent do you think comes from passenger vehicles alone?

VMT Trends



Mitigation

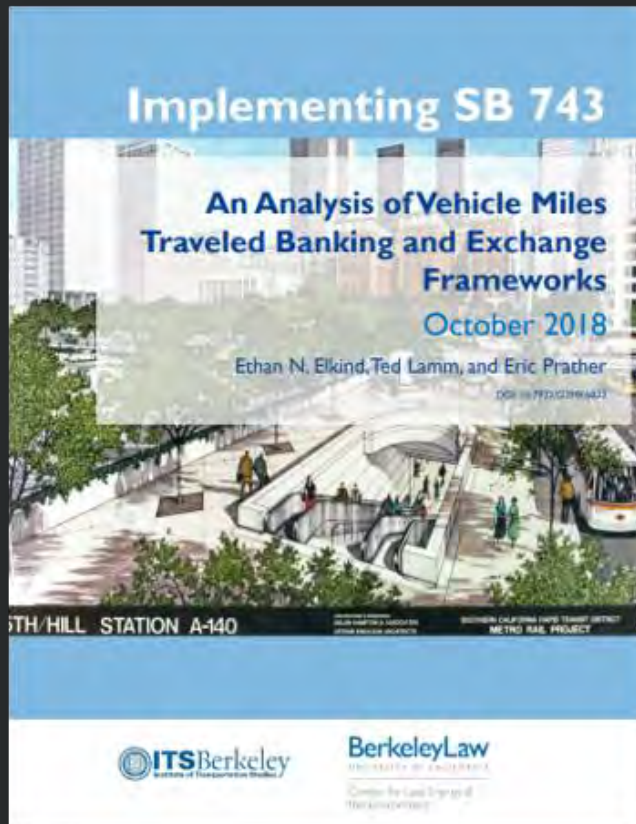
What's Feasible?

On-Site Mitigation Options

- Physical Design (Land Use or Transportation)
- Transportation Demand Management (TDM)

Off-Site Mitigation Options

- Impact Fees
- Banks
- Exchanges



Challenges

⊖ On-site mitigation may not be feasible or effective

- Physical design may be too much of a change to the project
- Mitigation effectiveness is location-dependent
- TDM is building tenant-dependent

⊖ Off-site mitigation must comply with legal requirements/expectations, political hurdles, be acceptable to stakeholders, and be affordable to implement

City of Los Angeles' VMT Calculator



Benefits

- Provides an easy-to-use tool to understand potential project impacts and to mitigate those impacts using a user-friendly menu of options
- Simplifies analysis for projects that are under the threshold
- Lowers the bar of entry to developers who are not professional transportation modelers



Challenges

- Calculator does not allow for regional investments
- Transportation investments are tied to the specific development site (or immediately surrounding community)
- Difficult to fully mitigate impacts due to limited options and limited VMT reduction potential of on-site project/programs

City of Los Angeles Impact Fee Program



Benefits

- Common Practice
- Adds certainty to development costs
- Allows for regional-scale projects
- Allows for long-range mobility investment planning



Challenges

- Time consuming and expensive to develop and maintain, and requires a strong nexus
- Projects on the list are not individually tied VMT; only in aggregate
- May not meet "additionality" test
- Unclear whether programmatic solutions can be funded through fee program

VMT Bank & Exchange Overview

Interactive Poll

How familiar are you with the concept of a VMT Bank or VMT Exchange?

Interactive Poll

How familiar are you with the concepts of cap & trade or wetland mitigation banking?



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** a VMT-reducing **project/program** off a pre-qualified list, or propose a new one.



Benefits

- Expands mitigation options**
+ to include a longer list of projects, cost for programs, operations, and maintenance
- Creates the potential to quantify VMT reductions**
+ which would allow for projects to be fully mitigated
- Allows for mitigation projects that serve multiple jurisdictions**
+ and in other parts of the city, creating the potential for more equitable distribution of projects/programs
- Takes advantage of economies of scale**
+ increasing the potential for VMT reduction by allowing for regional-scale projects
- New efficiencies are created**
+ by pursuing these models

Challenges

- Increases mitigation costs for developers**
- because it increases feasible mitigation options
- Requires extensive data analysis and demonstration of 'additionality'**
- with potential privacy concerns if there is a third-party administrator
- Geographic distribution**
- of mitigation projects and programs can become political
- Requires more investment in agency oversight**
- and administration due to larger-scale, regional focus
- Unprecedented with unknowns**
- such as the required timeframe for mitigation



+ **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 projects/programs

+ **Multiple agencies can deliver programs/projects**
not just the lead agency, which could greatly expand
the project/program list

- **Project/program implementation is limited to a pre-qualified list
determined by the lead agency.** A developer can propose a new project
or program subject to lead agency verification.

+ **Added certainty to development costs**
compared to an exchange

- **Potential mismatch**
between mitigation need and available projects & programs

- **Requires strong nexus**
to determine VMT credits for each project/program
and to assign a monetary value to VMT

+ **Reduces nexus obligation**
compared to an impact fee program or bank

- **More complex to administer**
and therefore time consuming and expensive

+ **Less complex** than a bank

Interactive Poll

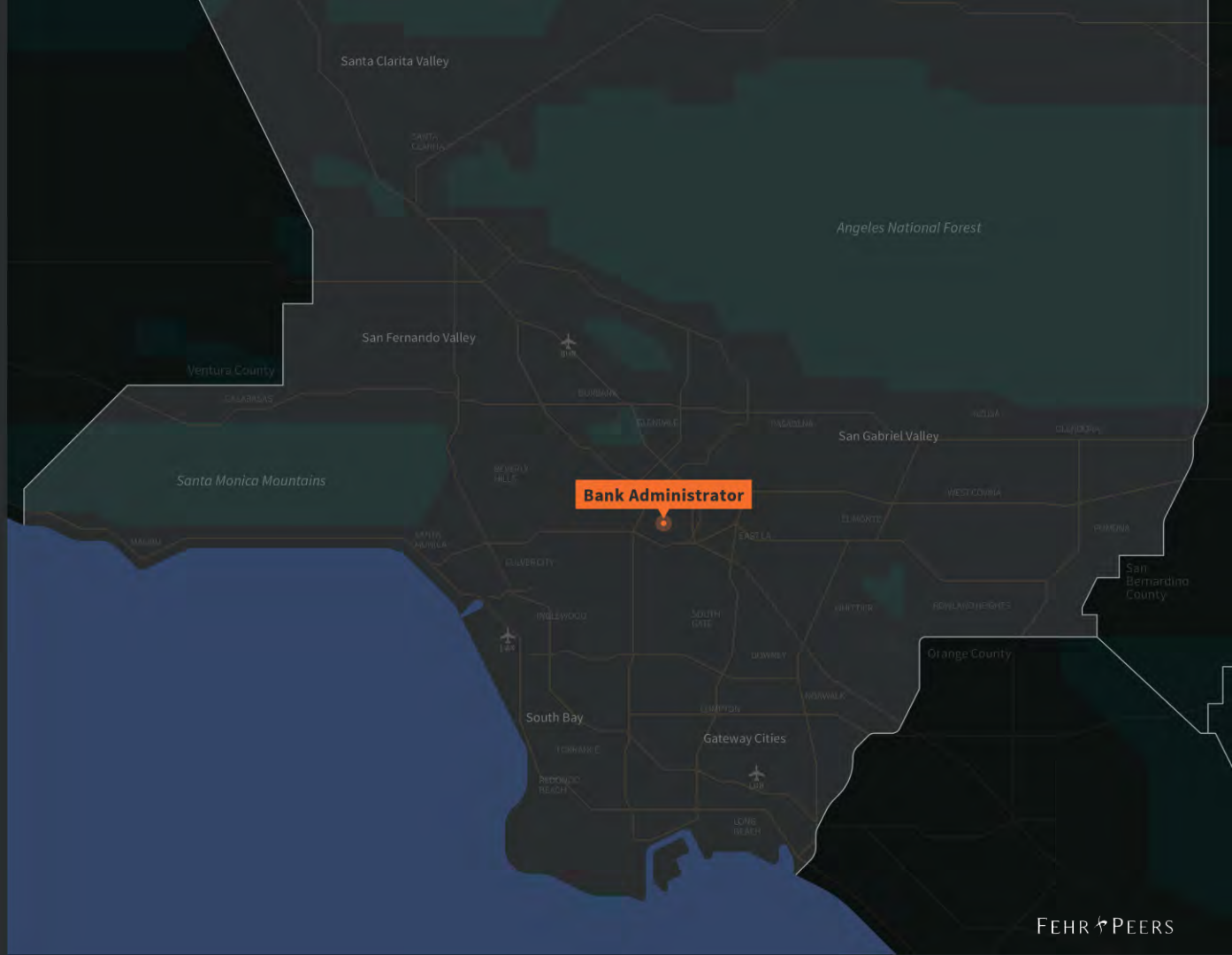
What is the top problem
a **VMT Bank** or **Exchange**
could help solve?

VMT Bank

STEP 1

Bank Administrator

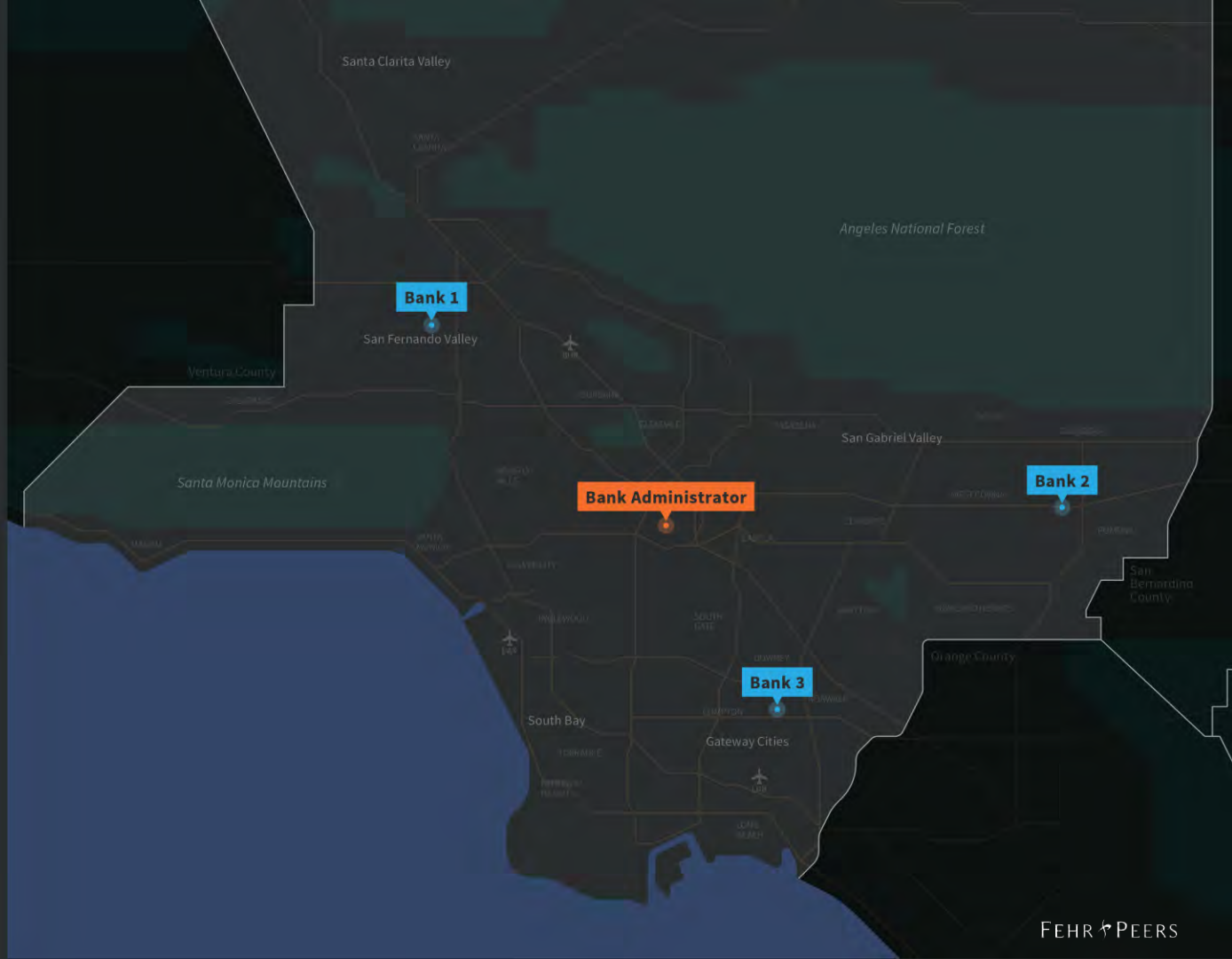
establishes a monetary value for VMT



STEP 2

Agencies & institutions evaluate their projects/programs for **ADDITIONALITY** and VMT reduction potential.

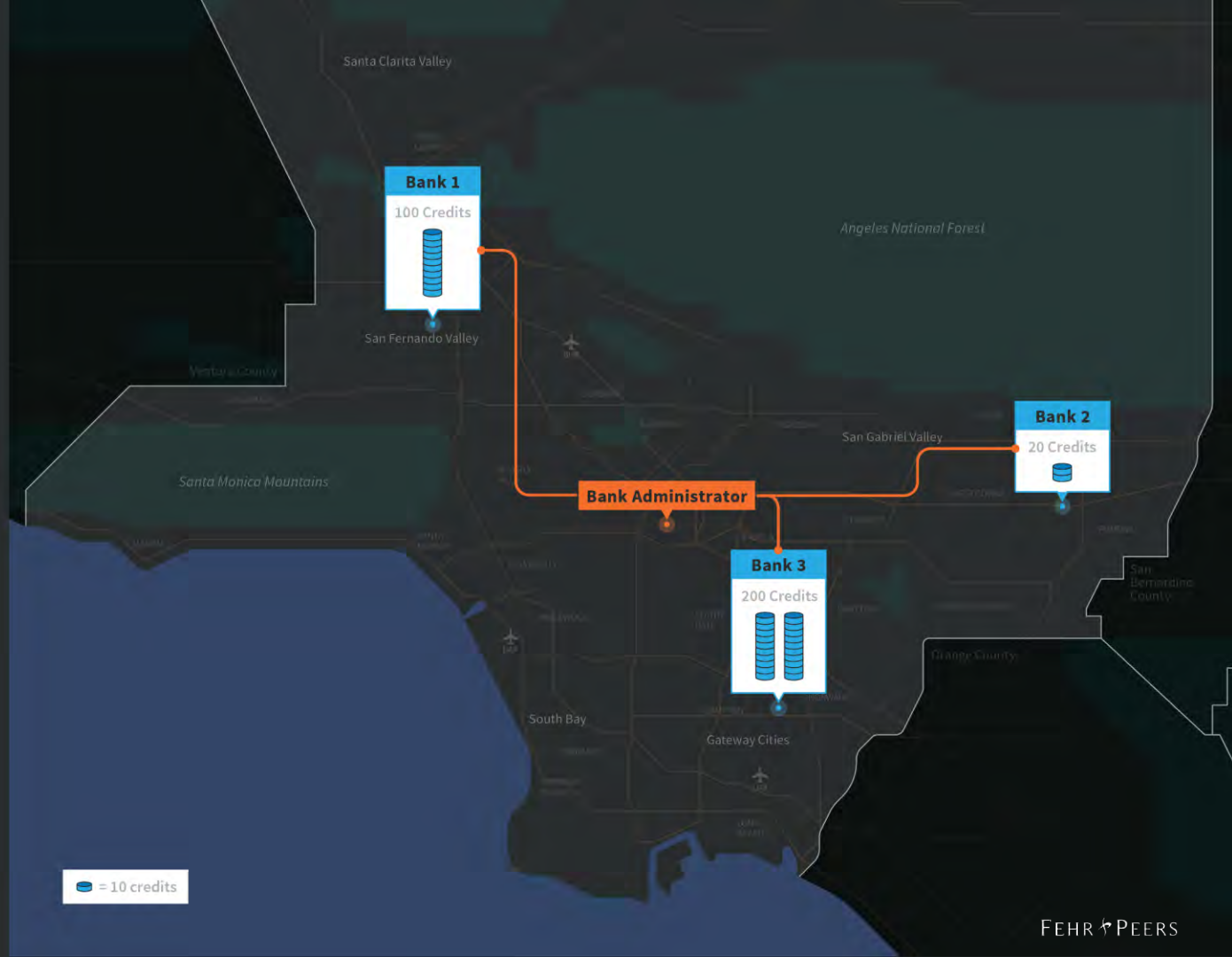
They then apply with a **Bank Administrator** to become a **Bank**



STEP 2

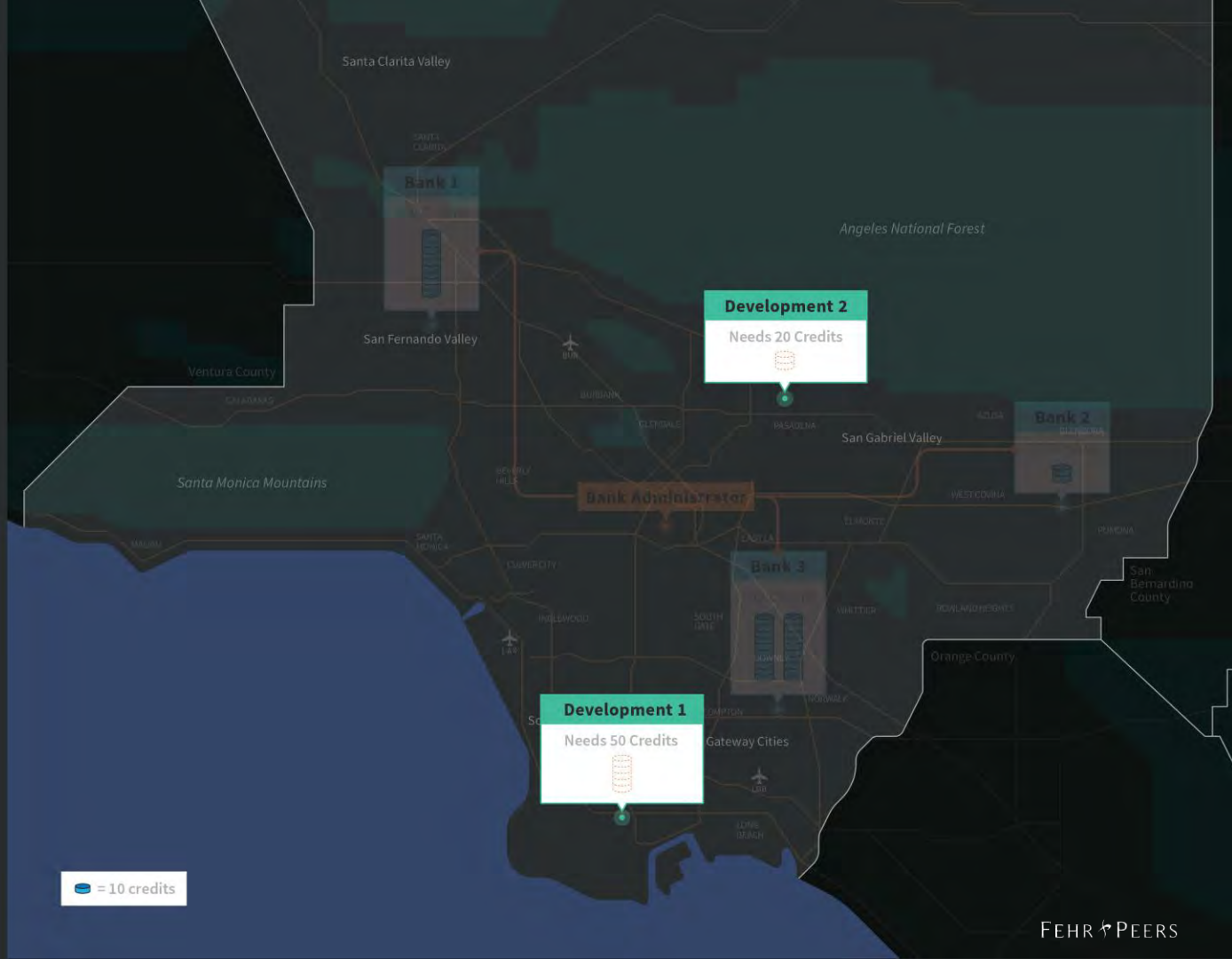
Agencies & institutions evaluate their projects/programs for **ADDITIONALITY** and VMT reduction potential.

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.



STEP 3

Developers determine their project's mitigation needs.



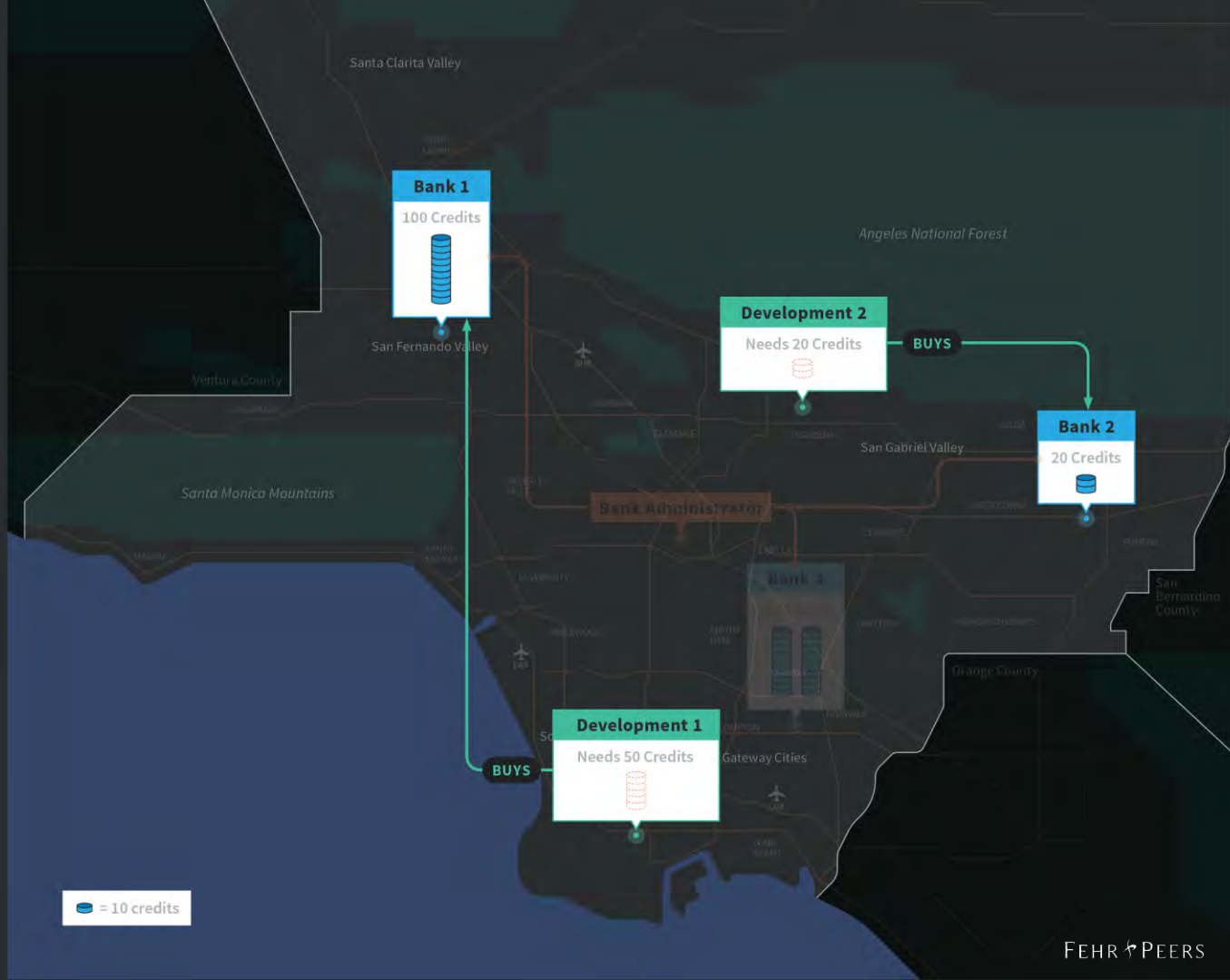
● = 10 credits

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)

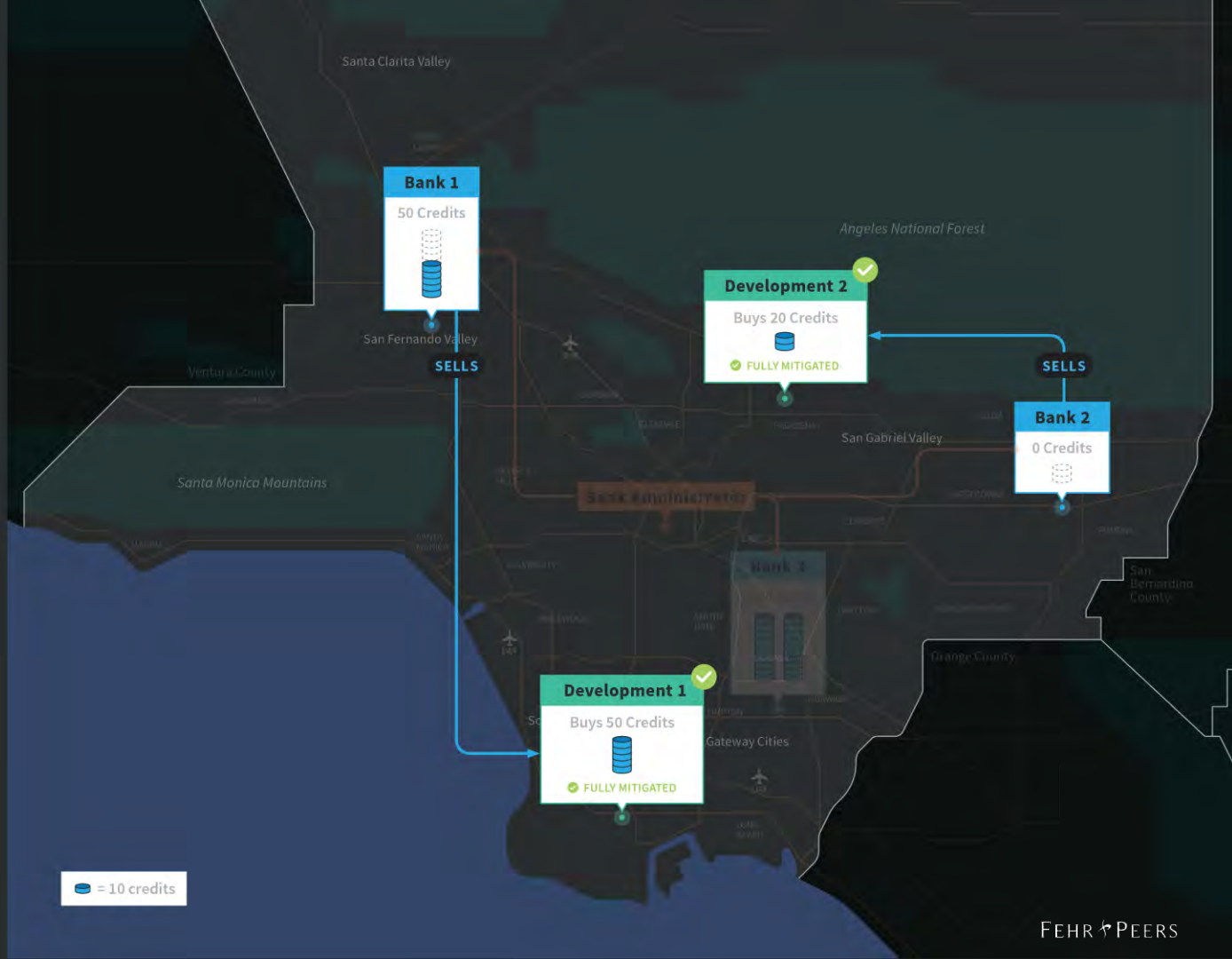


🏠 = 10 credits

STEP 4

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

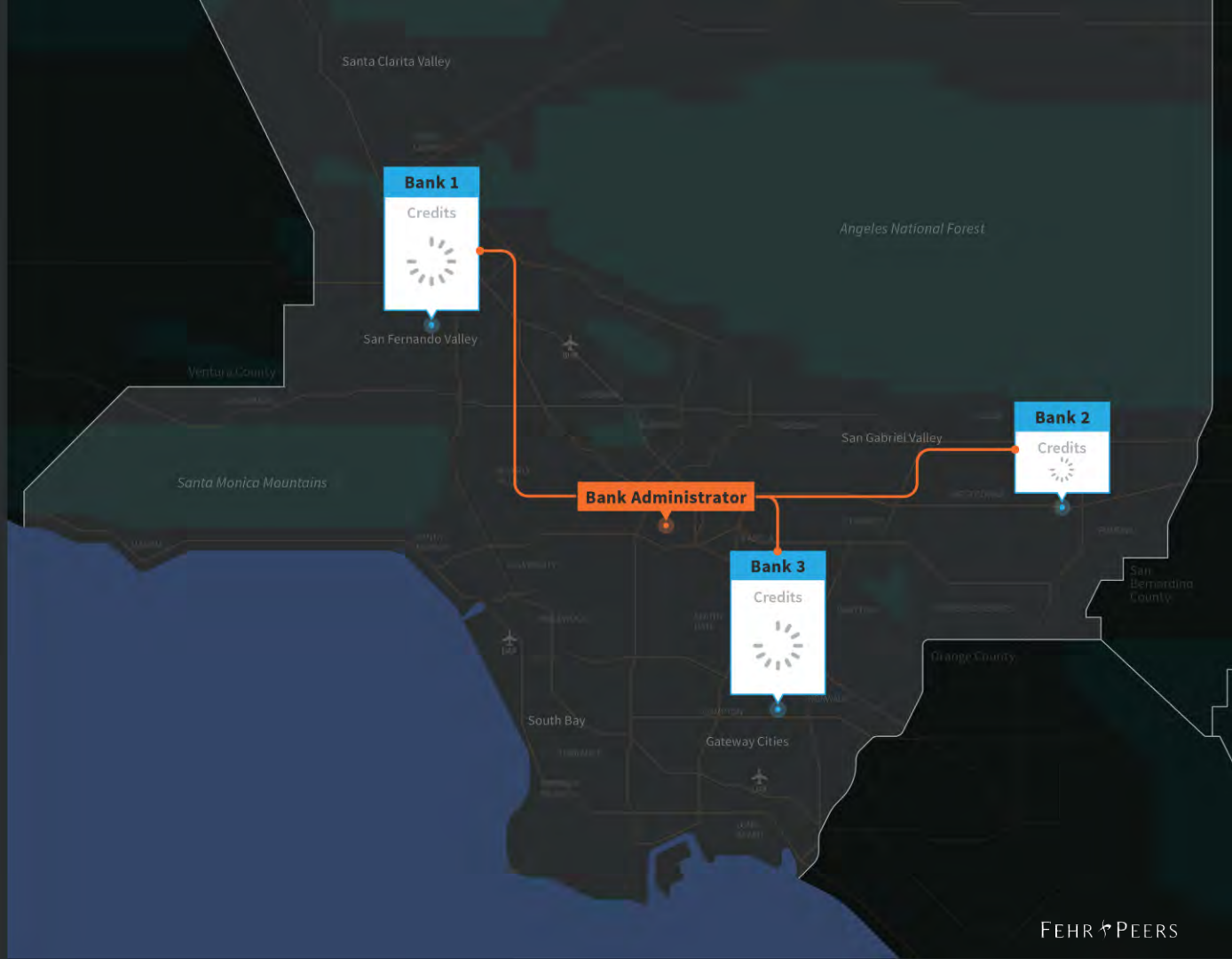
Developers are able to **fully mitigate** their projects and **Banks** use their revenue to implement their projects/ programs. **Banks** total number of credits available to sell are reduced.



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.

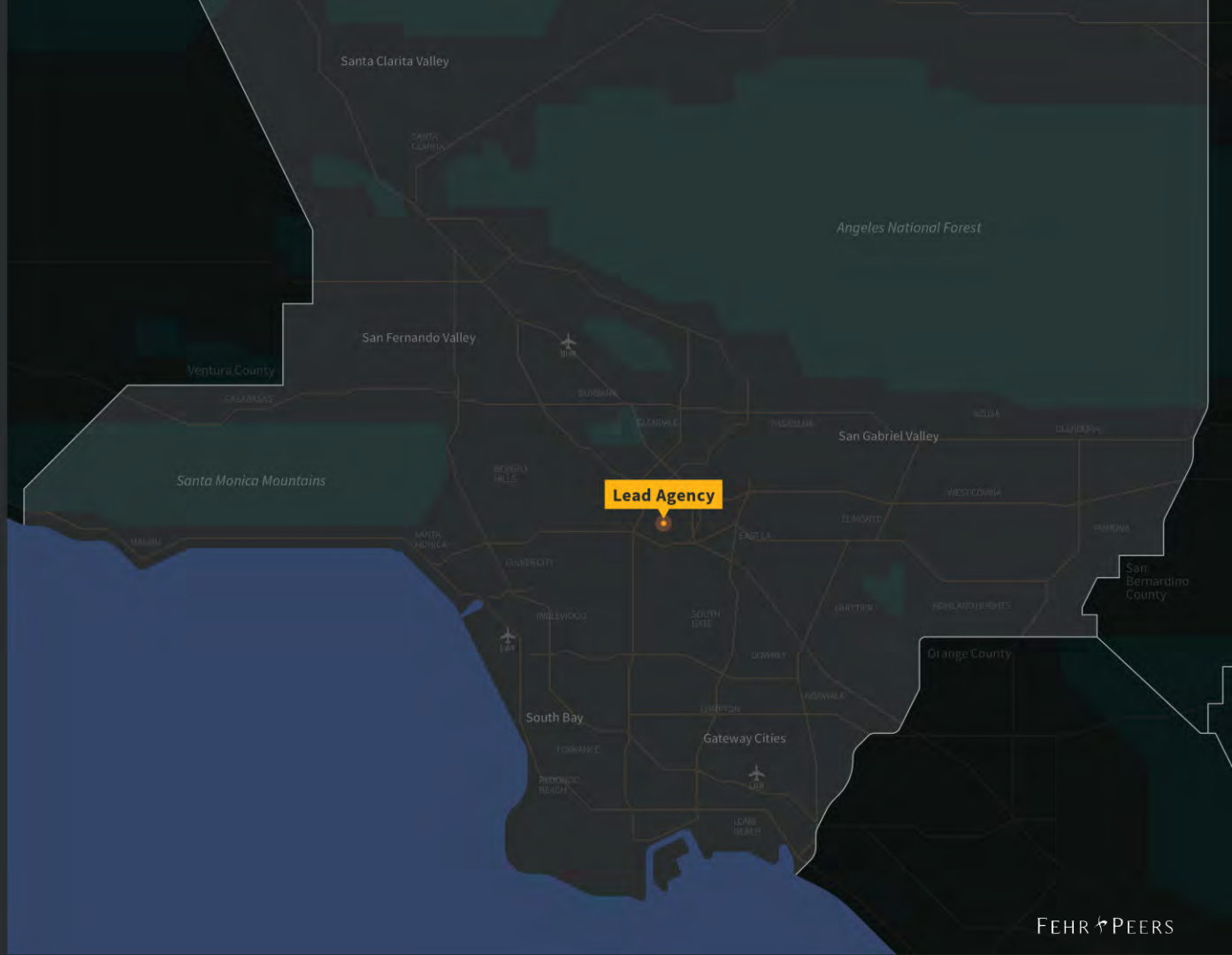
Banks re-apply for VMT credits.



VMT Exchange

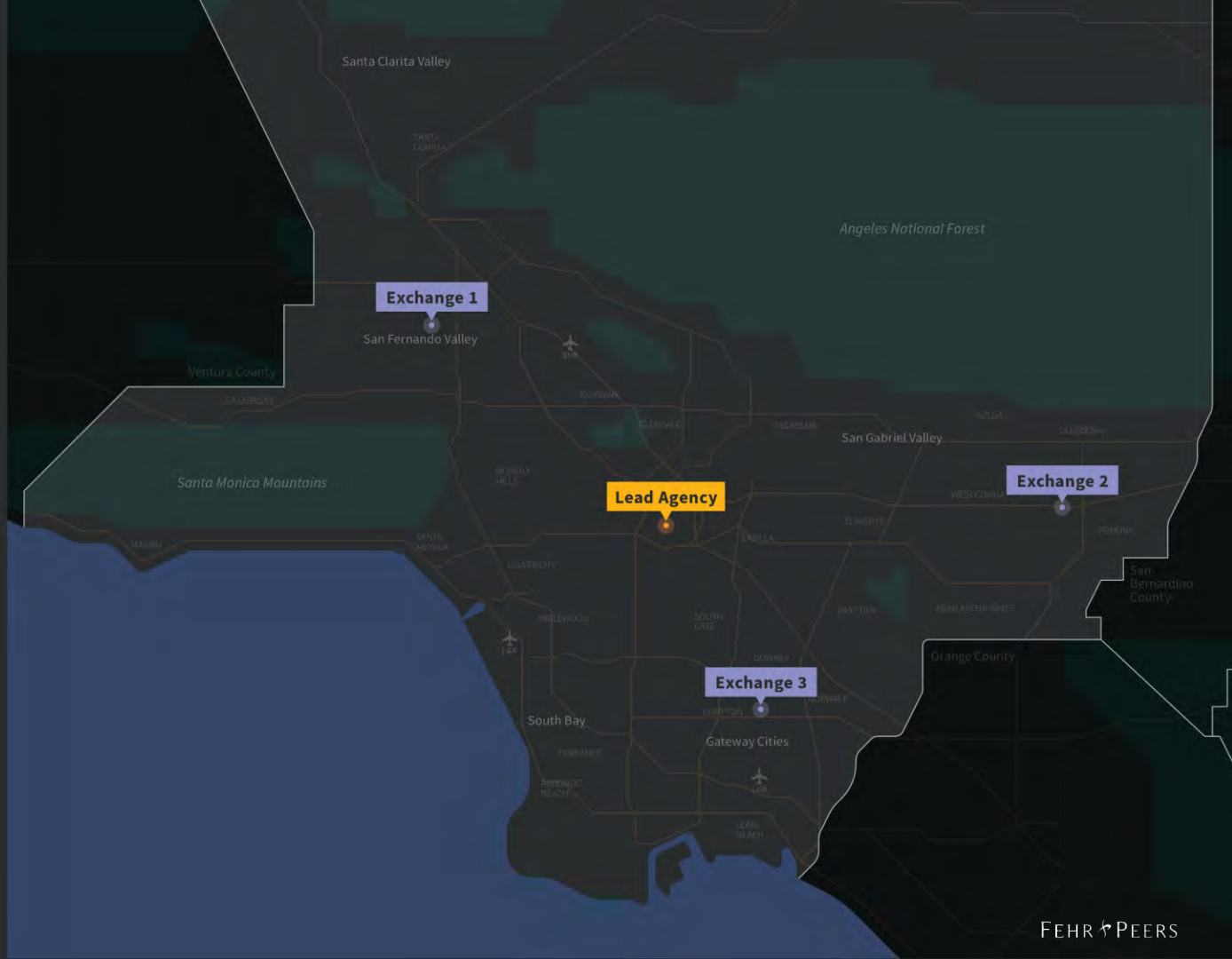
STEP 1

A **Lead Agency** is established.



STEP 1

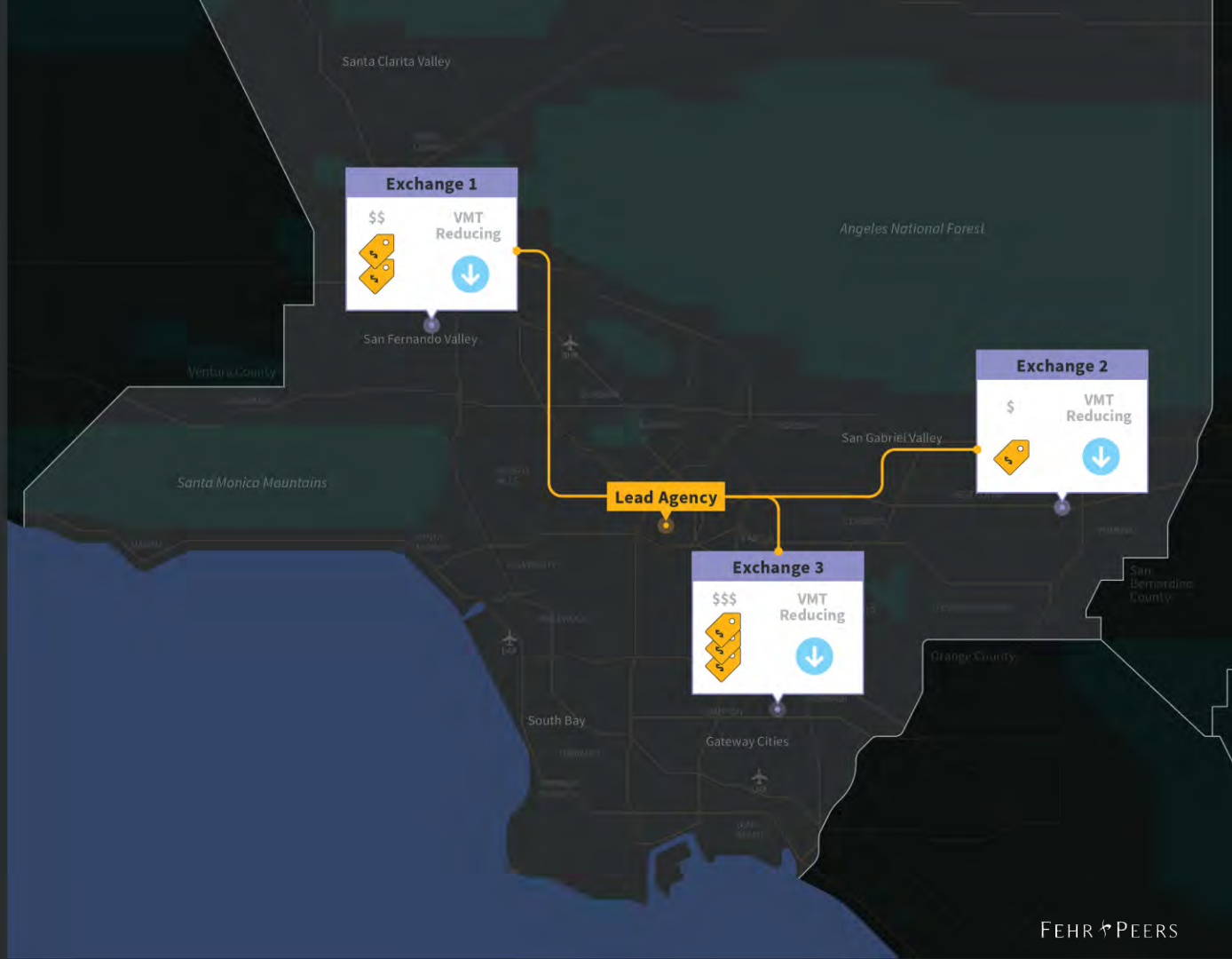
Lead Agency establishes a list of VMT-reducing projects/programs.



STEP 1

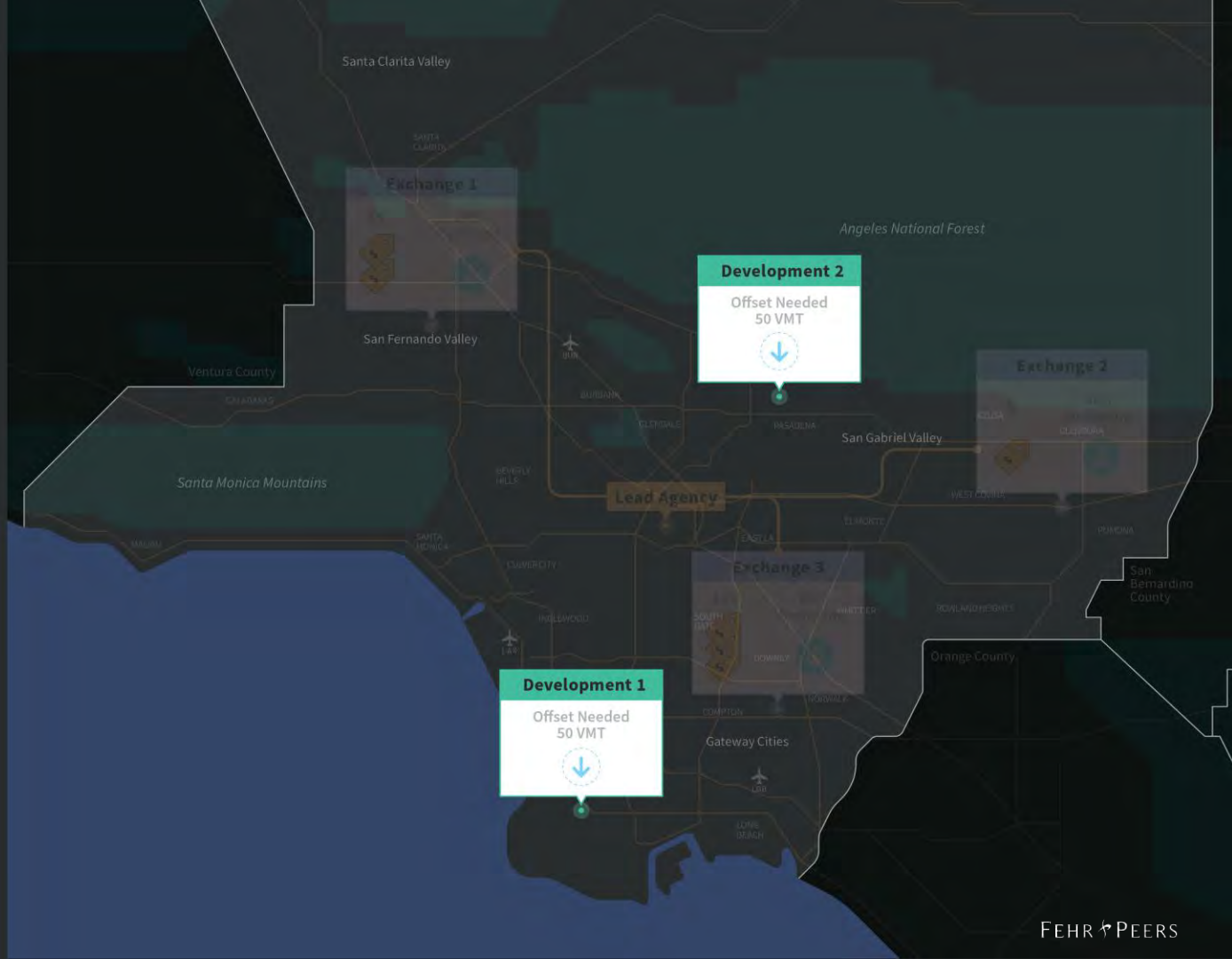
Lead Agency evaluates each **Exchange** to confirm **ADDITIONALITY** and cost to implement.

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



STEP 2

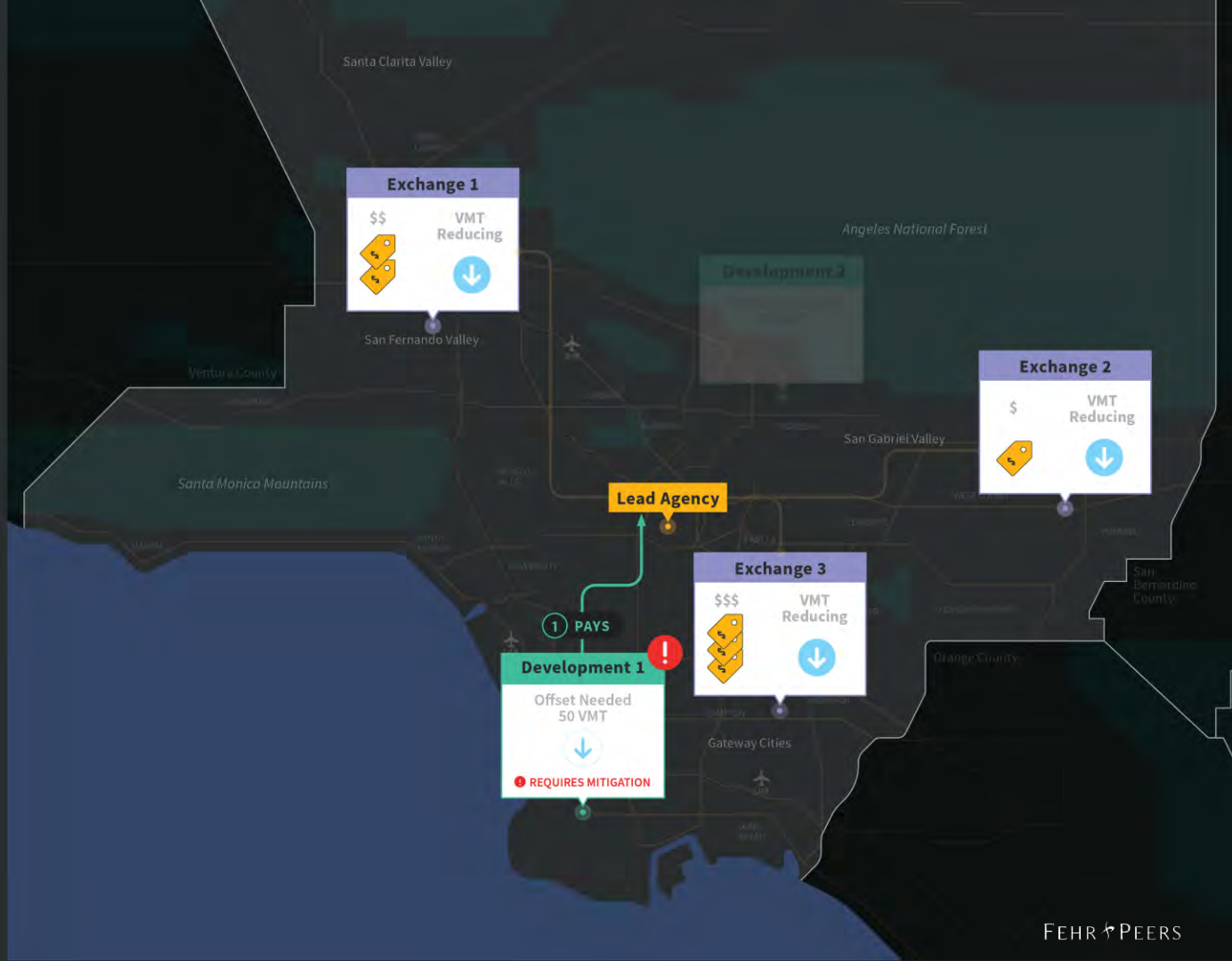
Developers determine their project's mitigation needs.



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 most cost-effective project.



STEP 2

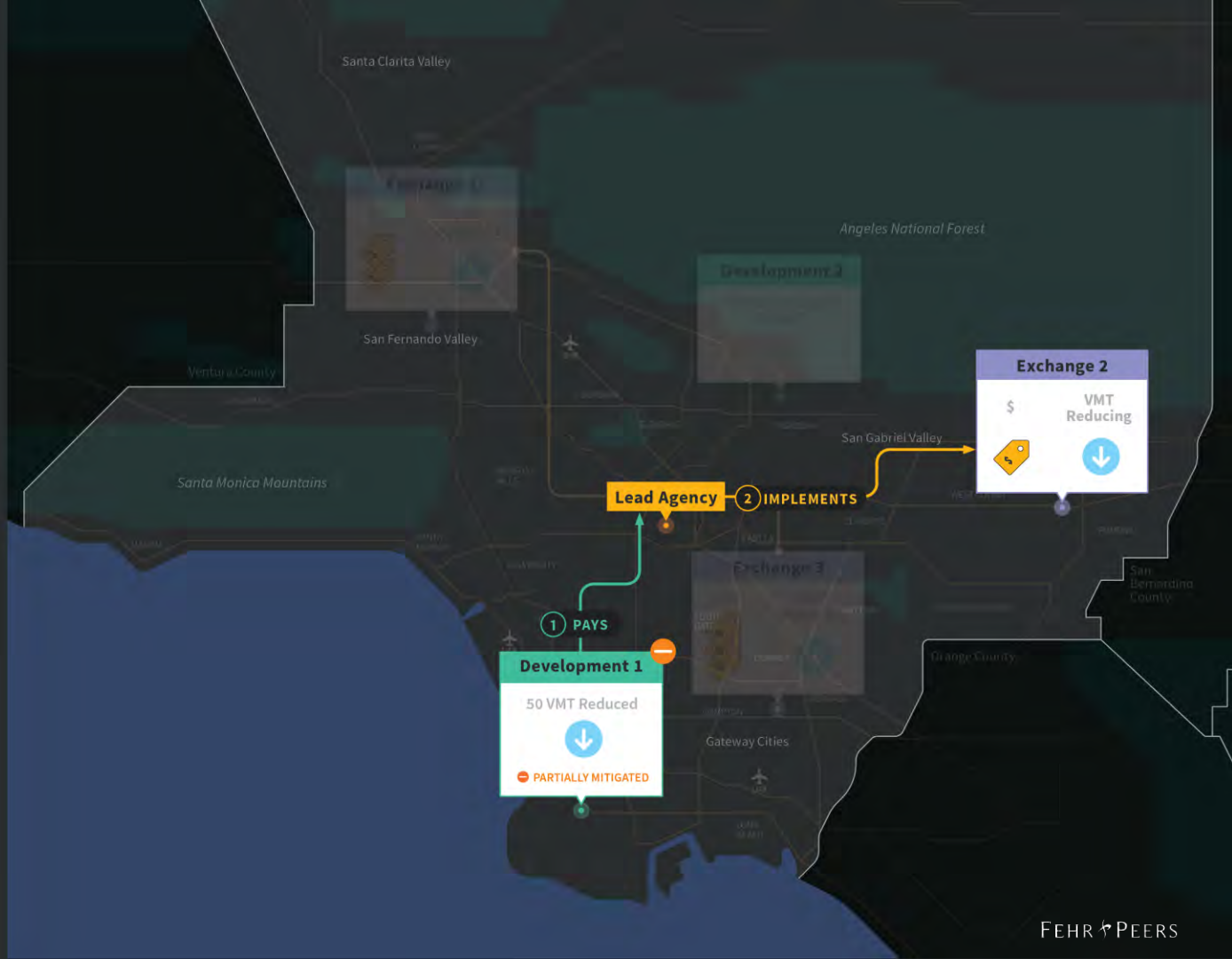
Developers determine their project's mitigation needs.

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.



STEP 2

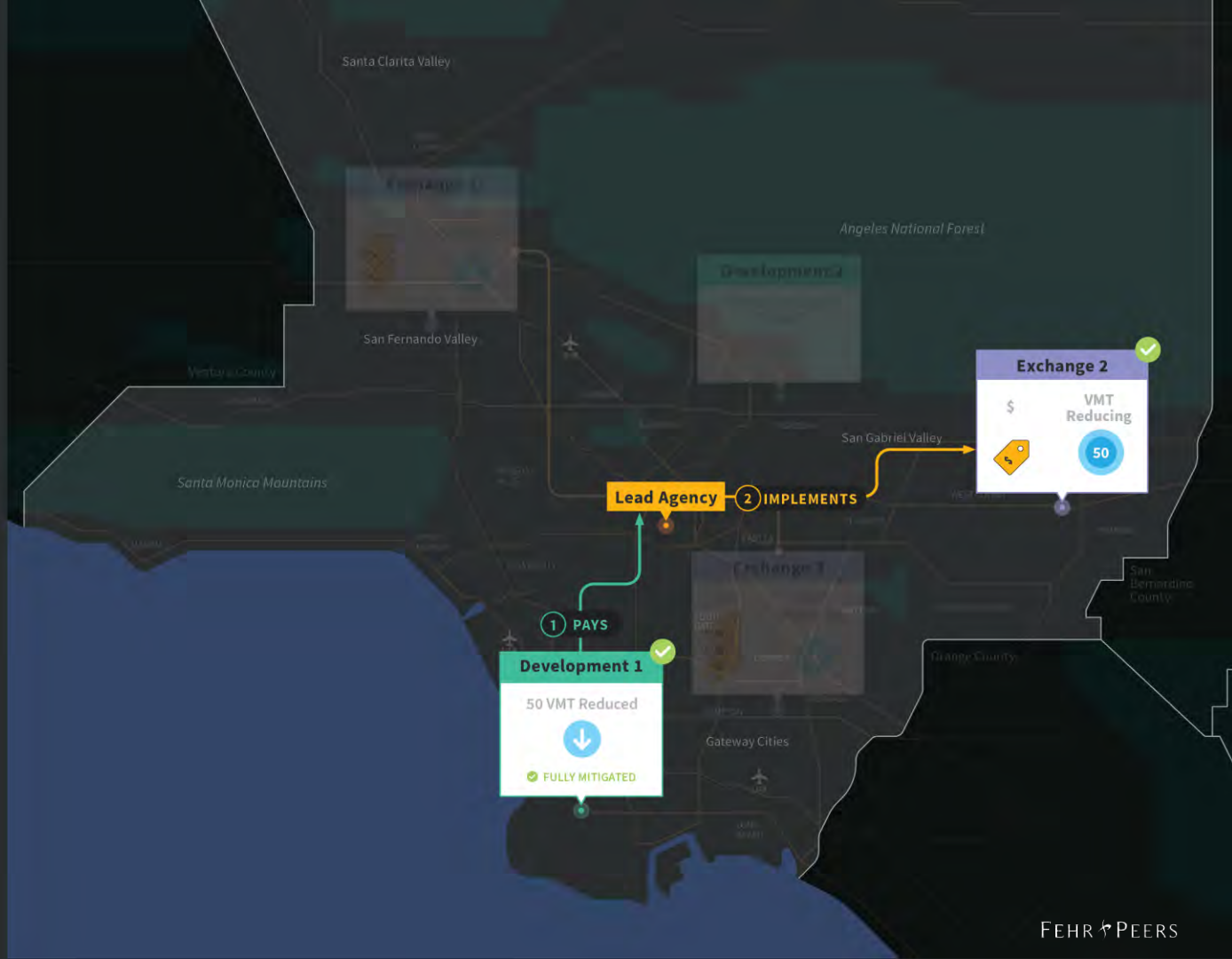
Developers determine their project's mitigation needs.

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.

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.

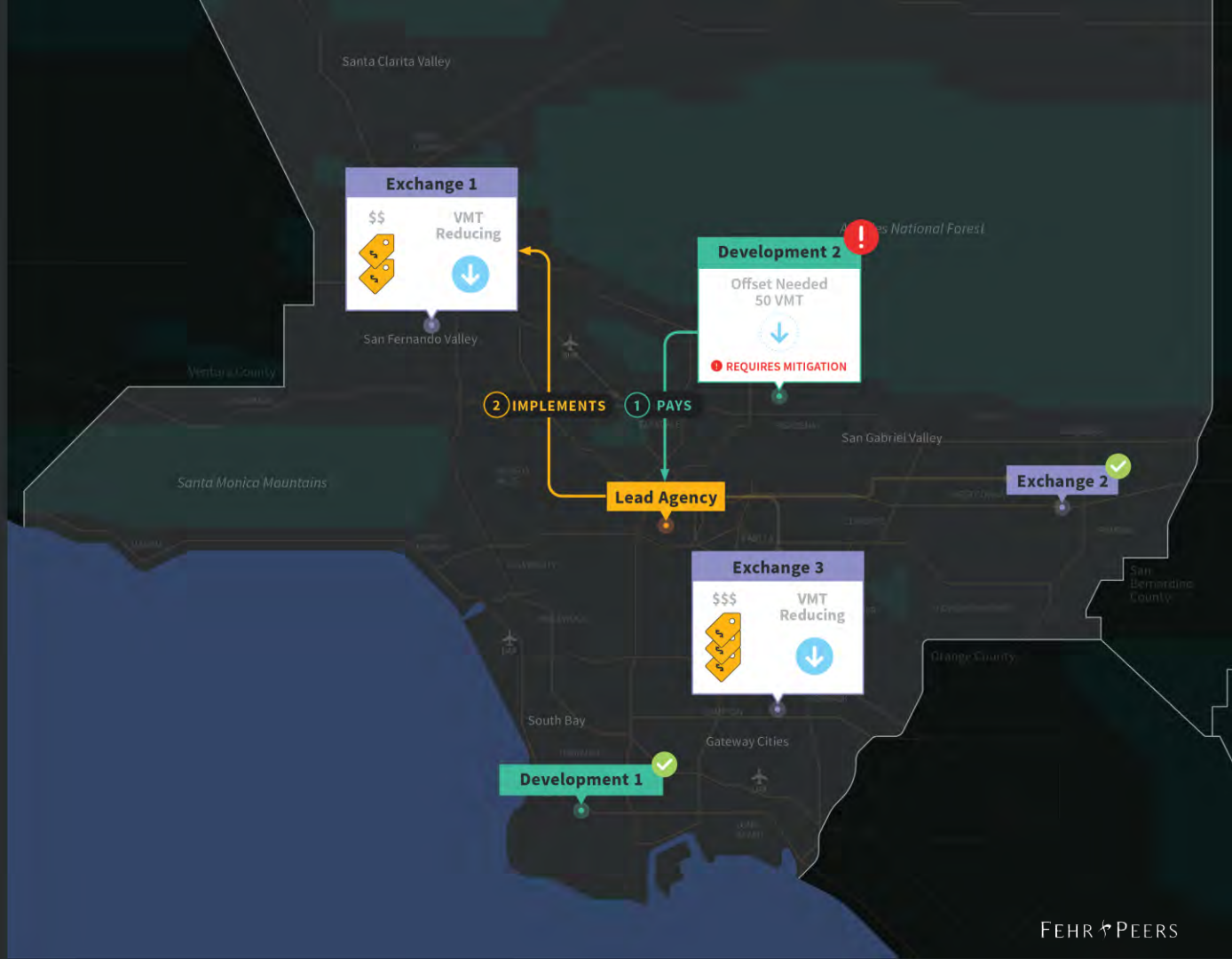


STEP 2

Developers determine their project's mitigation needs.

Then **PAY** for a project that meets their needs.

→ **Developers** cost determined by the cost of the project.

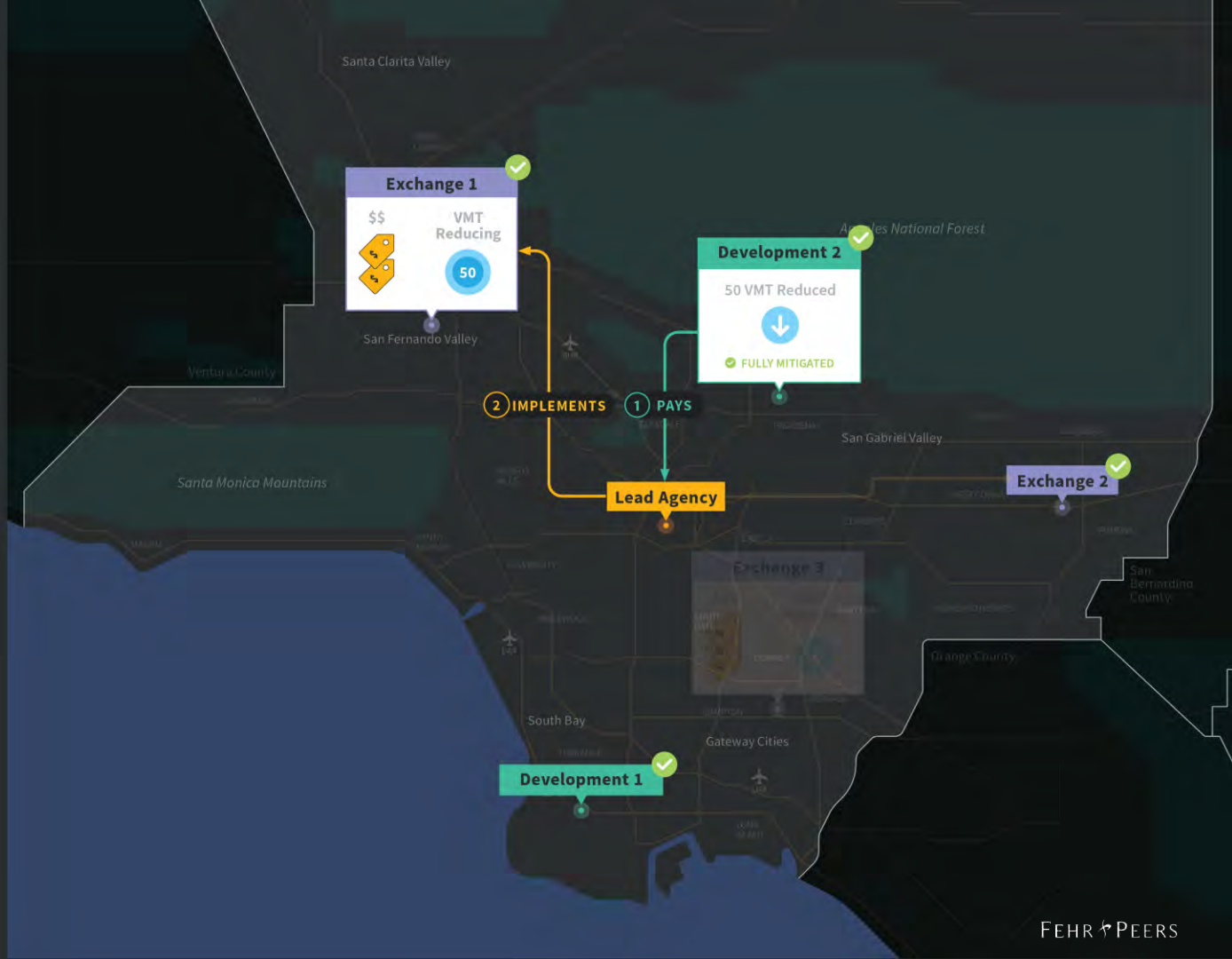


STEP 2

Developers determine their project's mitigation needs.

Then **PAY** for a project that meets their needs.

→ **Developers** cost determined by the cost of the project.

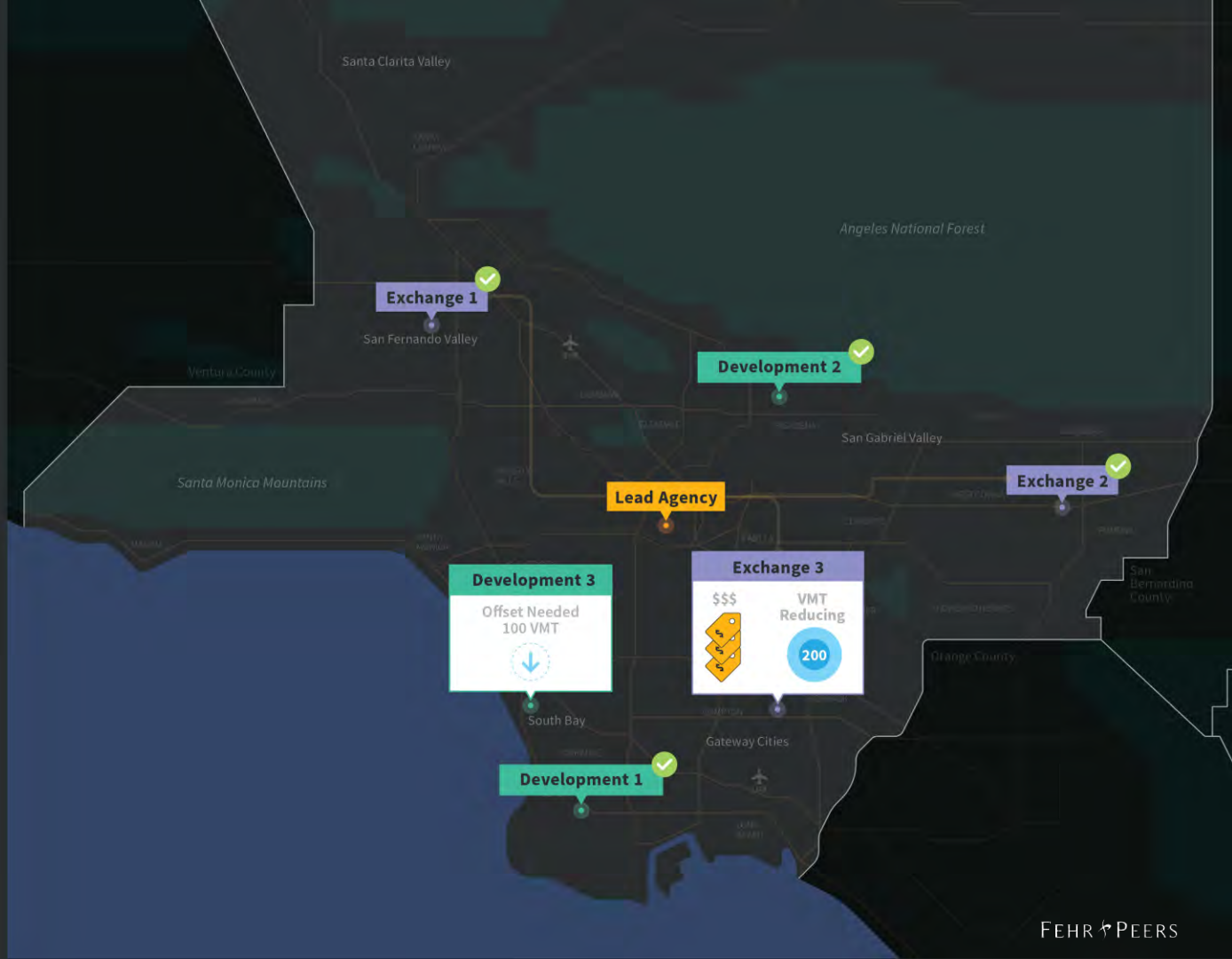


STEP 2

Developers determine their project's mitigation needs.

Then **PAY** for a project that meets their needs.

→ **Developers** cost determined by the cost of the project.

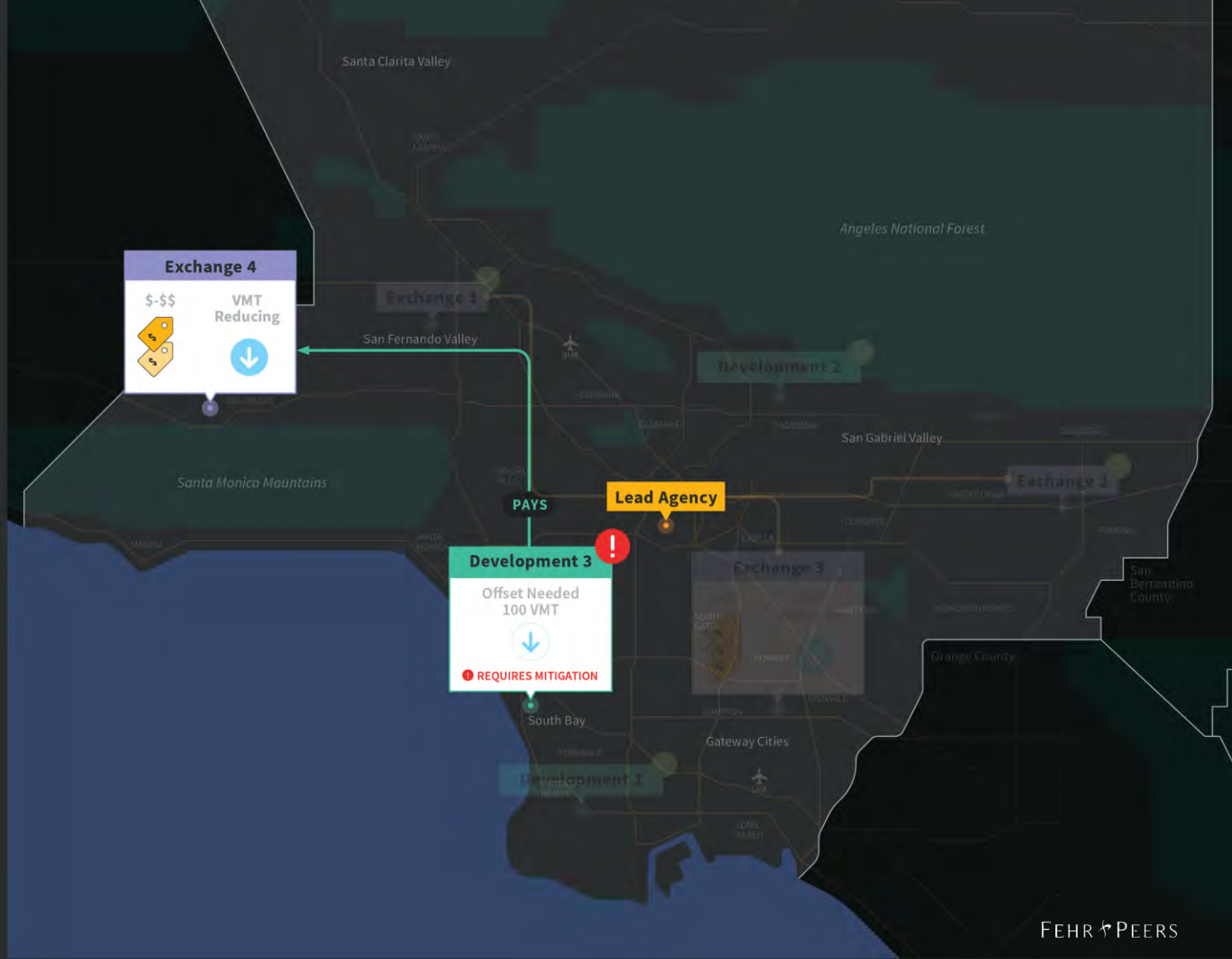


STEP 2

Developers determine their project's mitigation needs.

Then **PAY** for a project that meets their needs.

→ **Developers** cost determined by the cost of the project.

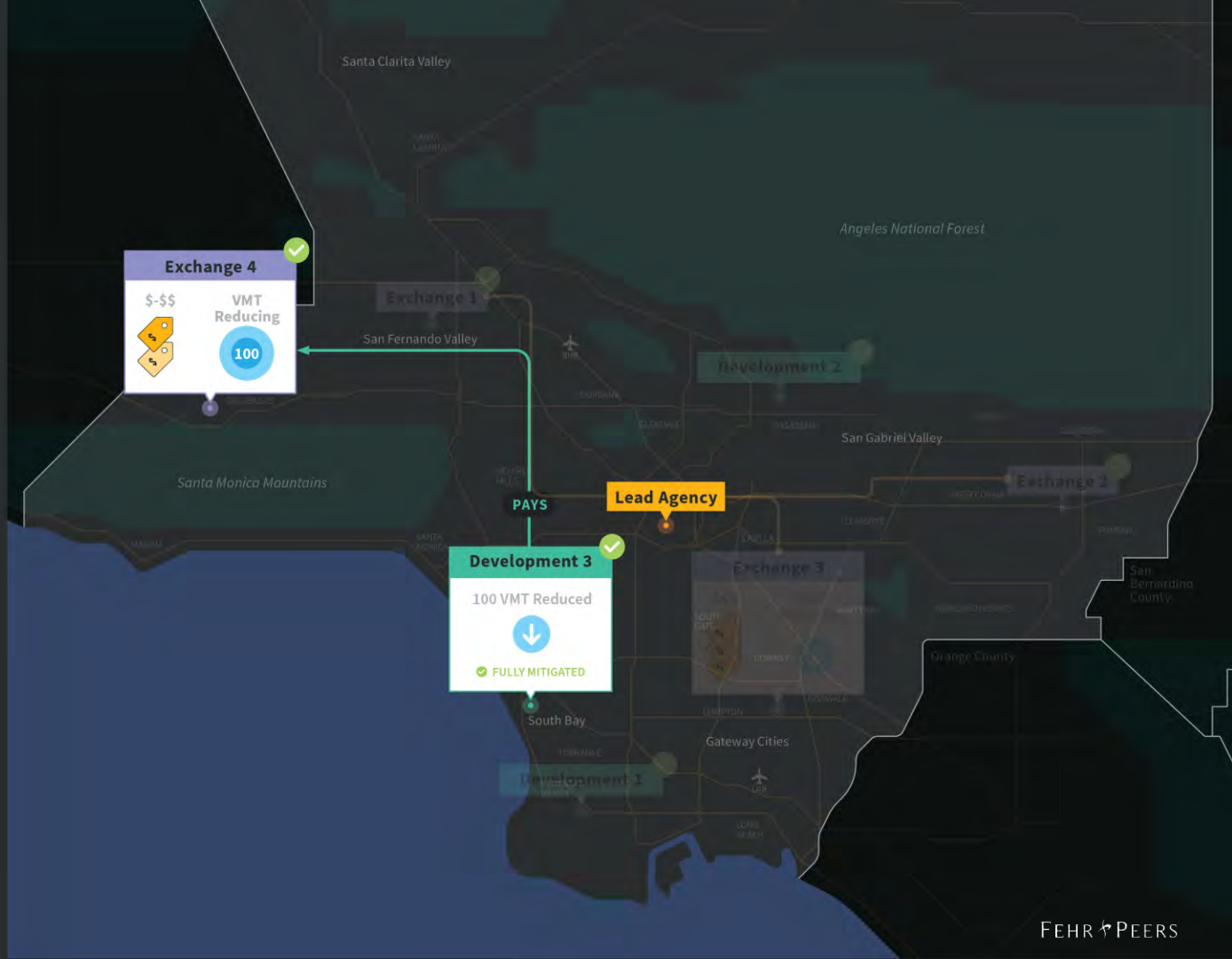


STEP 2

Developers determine their project's mitigation needs.

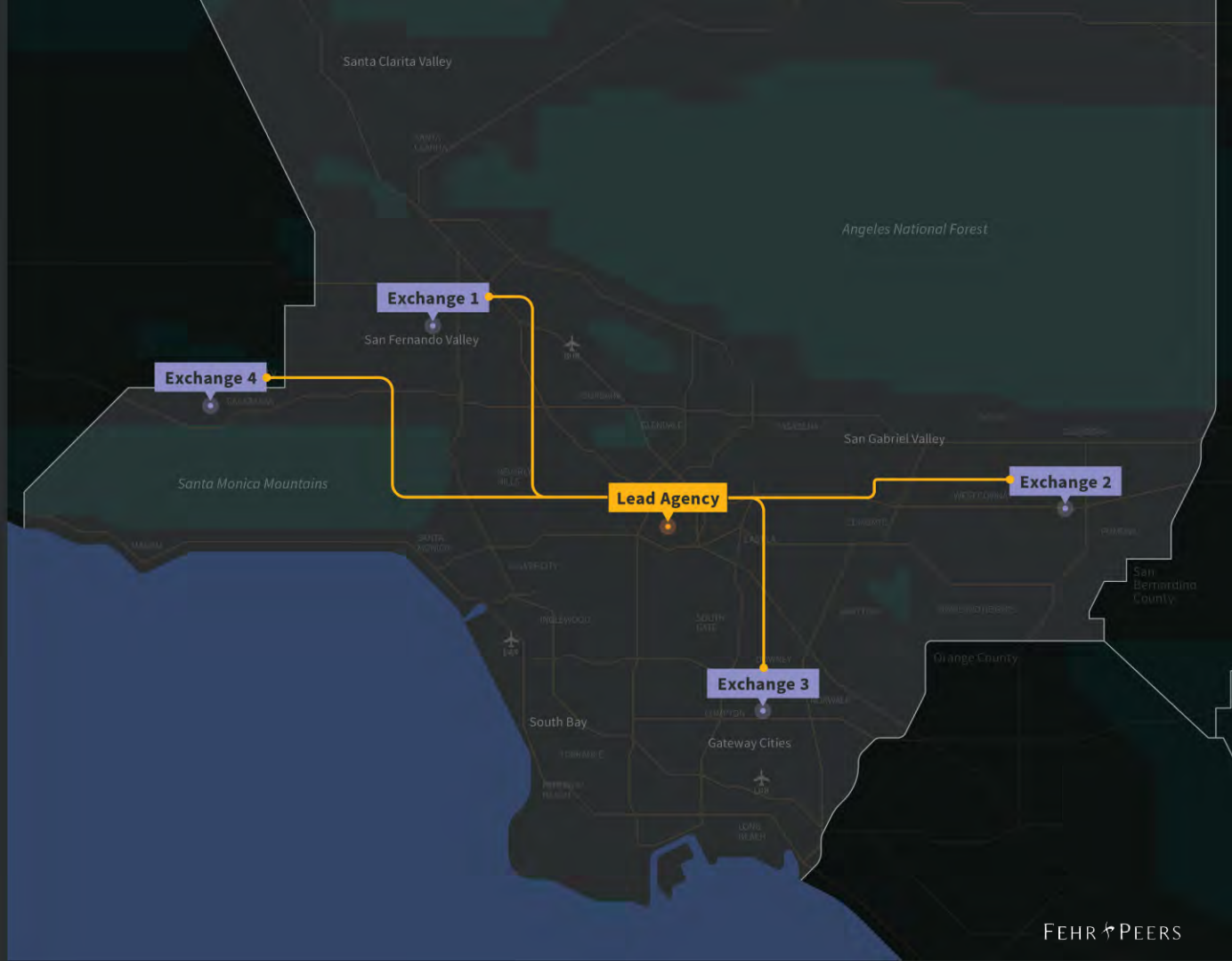
Then **PAY** for a project that meets their needs.

→ **Developers** cost determined by the cost of the project.



STEP 3

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





Interactive Poll

Which one is more intuitive to you?

Interactive Poll

Which of the two do you think would be most successful in Los Angeles?

Interactive Poll

What geographic scale do you think makes the most sense for a VMT Bank?

Interactive Poll

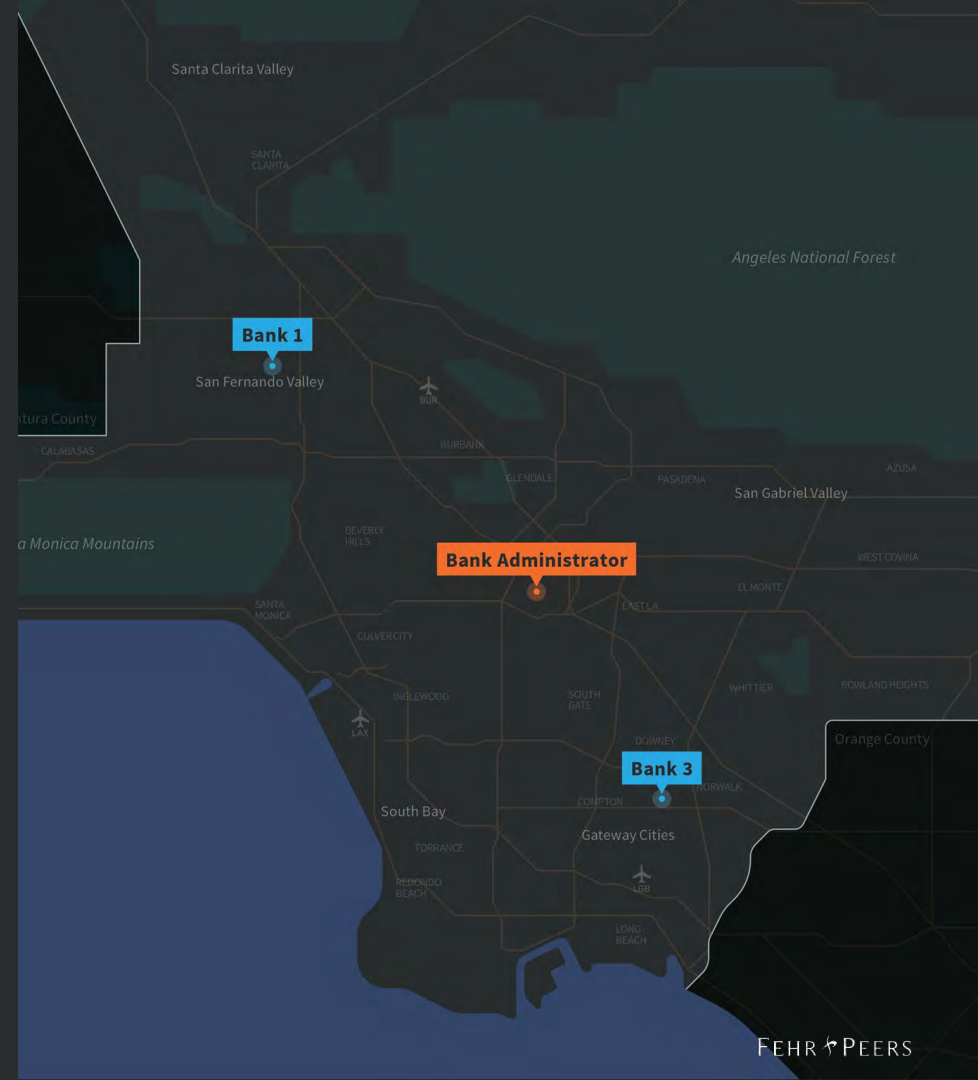
What geographic scale do you think makes the most sense for a VMT Exchange?

VMT Bank/Exchange Pilot Project

PILOT PROJECT

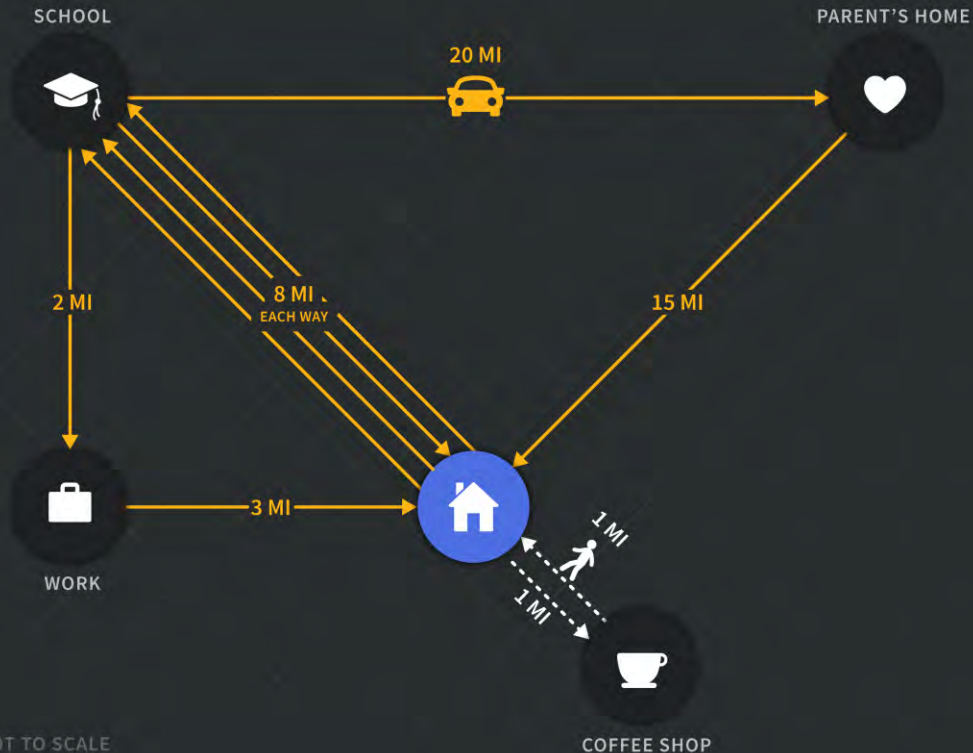
Student Transit Passes

LADOT, SCAG, and Metro are exploring using the existing **UPass** or **Dash to Class** programs as a pilot project for an Exchange or Bank.



Weekly Miles Traveled Without Transit Pass

This student is mainly auto-dependent, using their car to travel between SCHOOL, WORK, their PARENTS', and HOME. Sometimes they choose to walk to nearby locations, like a LOCAL COFFEE SHOP.



NOT TO SCALE

 VEHICLE TRIPS

72 miles

 WALKING TRIPS

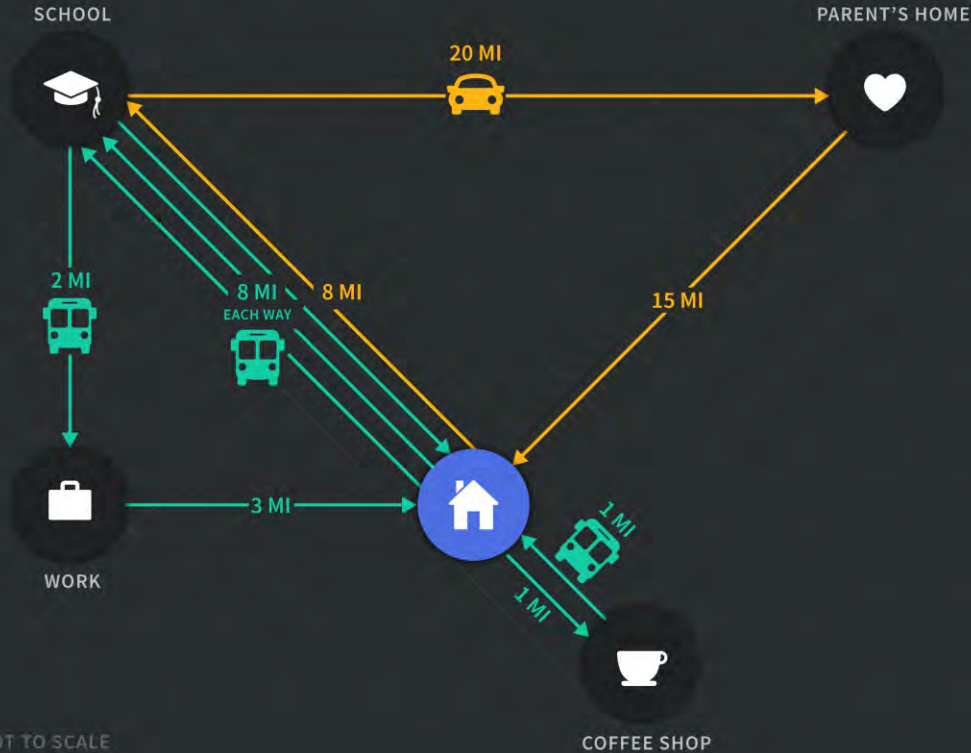
2 miles

 TRANSIT TRIPS

0 miles

Weekly Miles Traveled With Transit Pass

The same student now has access to a **transit pass** and replaces their car commute to **SCHOOL** with transit, as well as trips to **WORK** and to nearby destinations. They still use their car on occasion for longer-distance trips.



VEHICLE TRIPS ↓-29

43 miles

This represents the concept **ADDITIONALITY**, or a reduction in VMT that would not have occurred otherwise.

WALKING TRIPS ↓-2

0 miles

Without the transit pass, this person would have driven **72 vehicle miles**, and instead, drove only **43**.

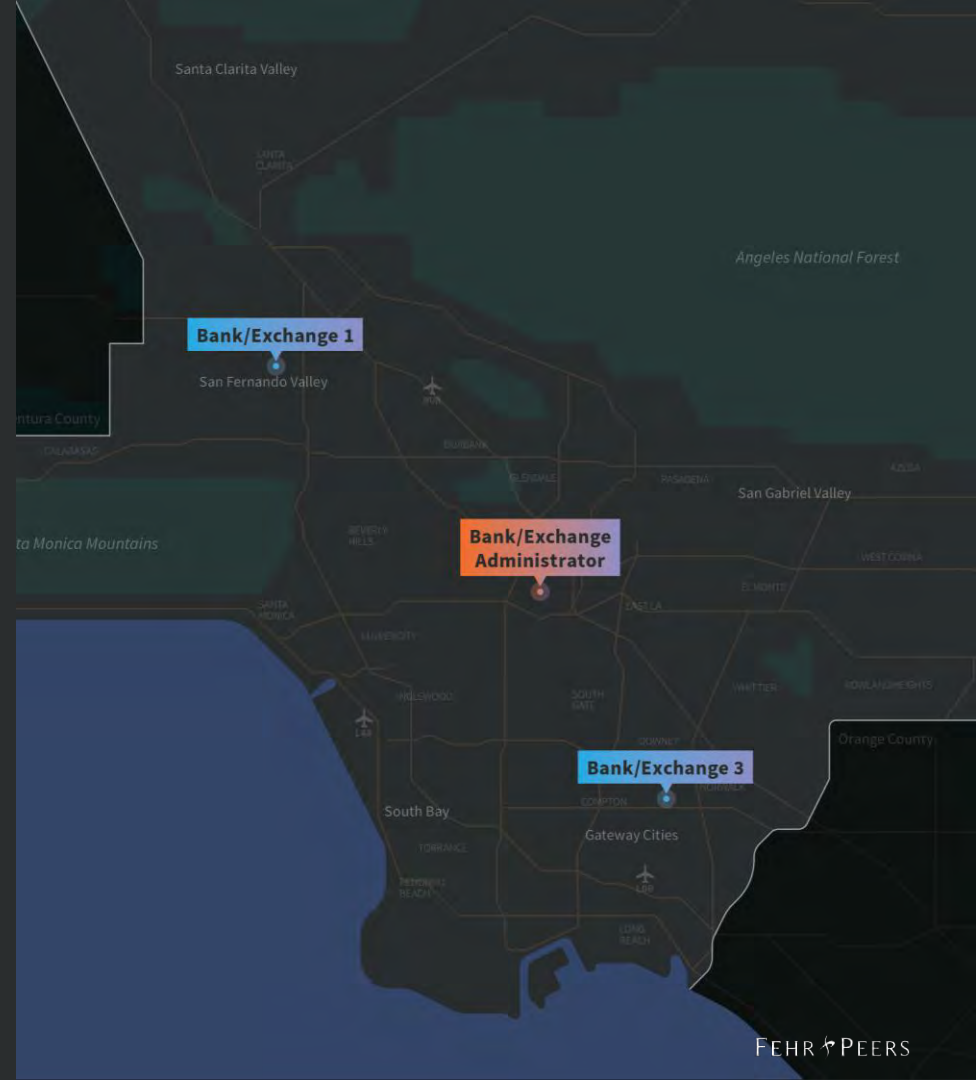
TRANSIT TRIPS ↑+31

31 miles

Student Transit Passes

The Pilot Project will help understand how a VMT Bank or Exchange would function through the lens of:

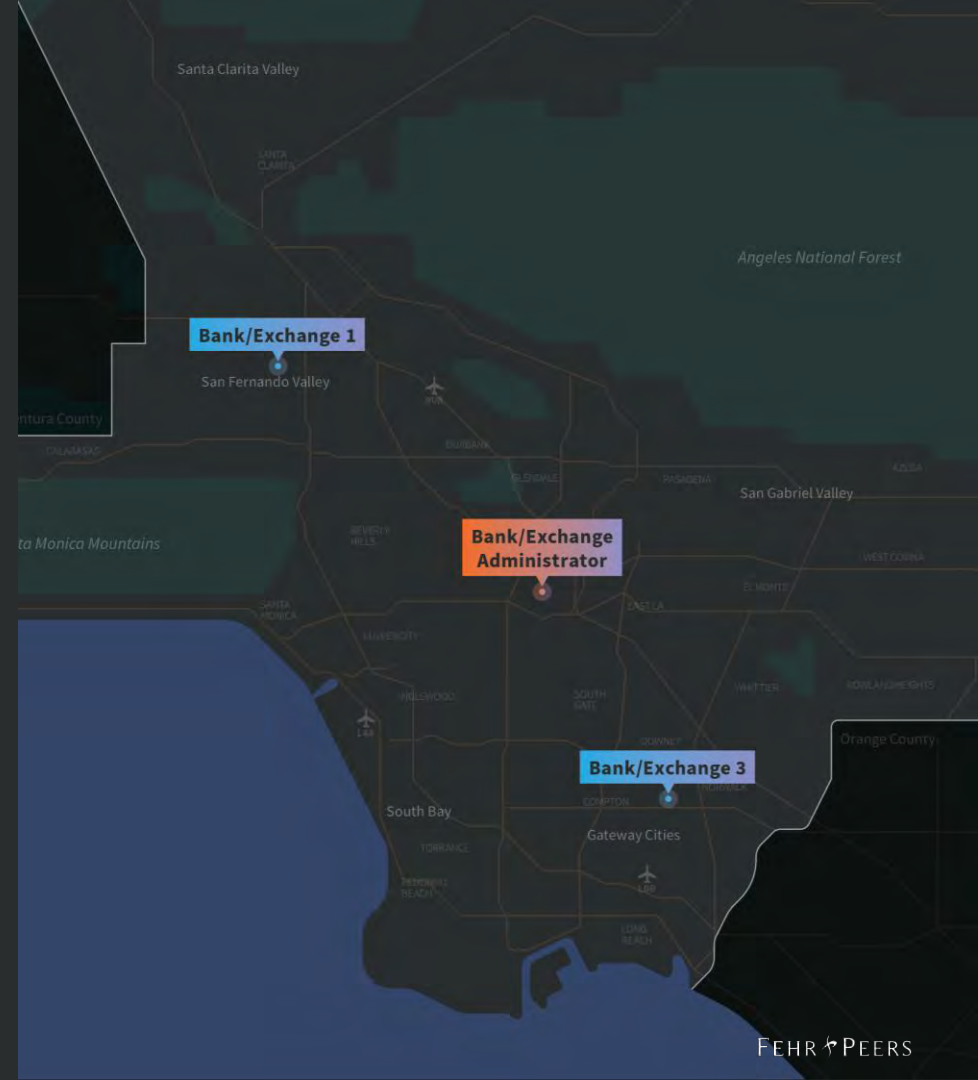
- Agency oversight and funding
- Program criteria and efficacy
- Implementation and legality
- Geography and scale
- Monitoring and data needs
- Duration



Student Transit Passes

The Pilot Project Goals are to:

- Develop a framework for broader implementation
- Understand the mitigation potential of the pilot within the context of a VMT Bank/Exchange



Breakout Session Guiding Questions

AGENCY OVERSIGHT & FUNDING

Who is the right “bank administrator” or “lead agency”?

- Who is the right agency to administer a “VMT exchange rate” calculator, and how would that integrate into existing city tools like the VMT Calculator?
- What systems are in place for the exchange of money?

PROGRAM CRITERIA AND EFFICACY

What problems are you hoping a VMT bank/exchange helps solve for the region? What are the equity goals and priorities of the program?

IMPLEMENTATION

What parts of program design do you think would be a relatively easy lift? What parts would be more challenging?

LEGALITY

What are your primary concerns from a CEQA perspective?

Geography / Scale: What do you think the right scale is for a VMT bank/exchange program? How do we ensure equitable distribution of projects/funds?

MONITORING AND DATA NEEDS

Do you feel like your agency/organization has the staff resources to collect and analyze programmatic data?

What do you think is the appropriate duration for monitoring mitigations?

DURATION

How often do we re-evaluate the program?

PILOT PROJECT

What lessons have you learned in implementing a pilot project?

- Roles & responsibilities
- Identifying the right people and partner

Next Steps

- Understand data needs for mitigation banks/exchanges
- Demonstrate the concept of additionality through the Pilot Project
- Utilize Pilot Project to establish VMT Exchange/Bank program criteria
- *Next steps for the TAC:* Dive into draft program criteria in March

TAG Small Group Check-Ins Meeting Summary

Meeting Attendees

Name	Organization/Agency	Email	Meeting
David Somers	LADOT	david.somers@lacity.org	1
Alexander Wikstrom	LADOT	alexander.wikstrom@lacity.org	1,2,3
Michael Gainor	SCAG	gainor@scag.ca.gov	1,2,3
Devon Deming	Metro	demingd@metro.net	1,2,3
Chelsea Richer	Fehr & Peers	c.richer@fehrandpeers.com	1,2,3
Jeremy Klop	Fehr & Peers	J.Klop@fehrandpeers.com	1,2,3
Natalie Chyba	Fehr & Peers	N.Chyba@fehrandpeers.com	1,2,3
Ron Milam	Fehr & Peers	R.Milam@fehrandpeers.com	1
Jennifer Gress	California ARB	jennifer.gress@arb.ca.gov	1
Heather King	California ARB	heather.king@arb.ca.gov	1
Alyssa Begley	Caltrans	alyssa.begley@dot.ca.gov	1
Chris Ganson	OPR	chris.ganson@opr.ca.gov	1
Chris Joseph	CAJA/VICA	chris@ceqa-nepa.com	2
Neill Brower	VICA	nb4@JMBM.com	2
Karen Heit	Gateway Cities COG	kheit@gatewaycog.org	3
Eric Shen	San Gabriel Valley COG	eshen@sgvcog.org	3
Riley O'Brien	Westside Cities COG	riley@estolanoadvisors.com	3
John Bwairie	San Fernando Valley COG	john@sfcog.org	3

February 23, 2021
1:30 - 4:30 PM

LOCATION:
Teams

SESSIONS:
#1: State Agencies
#2: Land/Use Development
#3: COGs

Meeting #1 – State Agencies

Agency Oversight & Funding

- Caltrans role as an administrator:
 - There are several benefits to Caltrans playing an administrator role in large-scale mitigation programs for the State, including recent case law that provides Caltrans legal authority to facilitate these programs, their Local Development Intergovernmental Review (LDIGR) role which allows them to collect ad-hoc fees, and recent court decisions that have set the precedent for fairly low requirements for Caltrans in defining what “mitigation” would be at the time of charging the fee. Further, they are one of the few State agencies with technical expertise in-house.
 - It is also important to note that one agency alone may not have the full breadth of expertise required to administer a program at this level of complexity.
 - Caltrans is starting to discuss what this could look like. Ellen Greenberg is heading the Caltrans SB743 team and is currently working with Ethan Elkind (UC Berkeley) to explore this as an option.
 - LADOT expressed interest in being a thought/research partner on this initiative, similar to ongoing collaborations with ARB.
 - At this point, Caltrans is not ready to take on a role in the SCAG/LADOT program. However, it would be helpful as this effort moves forward to identify roles and have discussions about what the responsibilities are for all parties involved.
- Other considerations:
 - Caltrans hopes that the SCAG/LADOT effort helps to identify the challenges and roadblocks that should be anticipated in these types of mitigation programs to help other jurisdictions predict and overcome those as they start to establish their own programs.
 - Those that would likely benefit the most from a larger-scale mitigation program are those that are the least equipped to administer them (e.g. smaller jurisdictions, Riverside, San Bernardino).
 - To lower the administrative burden of the program, the administrator could follow the Cap-and-Trade model and rely on third-party agencies to manage the exchange/implementation of mitigation actions, as well as on third-party verifiers to monitor their success.
 - In order to have cross-jurisdiction collaboration, MOUs would have to be established to fund projects in other jurisdictions.

Background provided on Caltrans Ad-Hoc Fees:

Since many communities exclude Caltrans facilities from their fee programs, Caltrans will often request a fair-share contribution from local development projects as part of mitigating cumulative impacts to the State highway system. This type of request is an 'ad-hoc' fee, which is different from the fee programs established by local agencies under Government Code Section (GC) 66000, which apply to subdivisions of the State. Since Caltrans is not a subdivision, GC 66000 does not apply to them and an ad-hoc fee payment is an adequate form of mitigation for cumulative State highway impacts based on historical case law. Since CEQA does not include any provisions for concurrency (i.e., constructing mitigation at the time of impact), accepting an ad-hoc fee that Caltrans can hold until sufficient funding has accumulated to pay for a mitigation improvement fulfills CEQA mitigation requirements based on court decisions such as the Friends of Lagoon Valley (FLV) v. City of Vacaville. The FLV decision held that paying an impact fee to cover a portion of impacts is adequate mitigation since CEQA does not require a time-specific schedule for completion of the mitigation. The only requirement is that the money is linked to the specific mitigation improvements. Caltrans supports this position and has the ability to hold fees for specific improvement projects until such time as any remaining funds have accumulated. Further, in the City of Marina v. Board of Trustees of the California State University (2006) 39 Cal.4th 341, the California Supreme Court acknowledged that some uncertainty may exist as to the success of long-term mitigation, but this was not a basis to reject a fee payment. Further, Caltrans will explicitly state that they intend to implement the cumulative mitigation or something equivalent so this combination of factors will likely constitute substantial evidence that this approach fulfills CEQA requirements for mitigation.

One question likely to come up when discussing this form of mitigation is whether Caltrans must have an established financing mechanism to provide the remaining portion of the mitigation cost to determine that the mitigation is feasible. While court decisions such as Save Our Peninsula Committee v. Monterey County Bd. of Supervisors, supra,⁸⁷ Cal.App.4th 99, have consistently found that, "...a commitment to pay fees without any evidence that mitigation will actually occur is inadequate.", they have differentiated between fee programs and 'ad-hoc' fees. The court cases above would suggest that ad-hoc fees do not have to pass the same feasibility test as a fee program as long as there is evidence that the entity collecting the fee intends to fulfill the obligation to mitigate. Caltrans can and does make this commitment so the ad-hoc fee would be adequate mitigation when a fee program does not meet all the requirements noted above to provide full mitigation.

Monitoring and Data Needs

- There is potential to explore a state-wide threshold for VMT, especially if a state agency comes online as the administrator of this program.
- It is important to consider that traditionally, CEQA does not include any monitoring. Monitoring would be a new requirement and potentially introduce a level of risk and uncertainty into the

development landscape that may not be in the state's best interest. However, monitoring also provides the level of accountability and transparency that is required to demonstrate the need for programs like this.

- If monitoring is considered, it should be considered at a programmatic level as opposed to at the individual project or action level. This would allow for ongoing adjustments of project applicant requirements without introducing risk to project applicants that have come before.
- *Request by the group for the consultant team to follow-up with case law examples around monitoring.*

Cost and Funding Timeline

- Consider performing a full lifecycle impact analysis upfront, as opposed to requiring project applicants to mitigate in perpetuity
- Consider incorporating a safety margin into the quantification of VMT mitigation need to confirm that targets are being met.
- Consider cost parity across the state to limit too large of discrepancy between jurisdictions

Meeting #2 – Land Use/Development

Cost and Funding Timeline

- Developers' primary concern is predictability. Designing a program that limits risk and streamlines the analysis process is important. For this reason, developers typically prefer banks.
- There was general confusion over the "exchange" scenario and what would be required of developers under a program structure like this. Developers would be wary of this program structure if they were required to identify, implement, and monitor mitigation actions themselves.
- There would be a slight preference towards paying an upfront fee over paying an annual mitigation fee. However, developers aren't necessarily opposed to an annual fee as long as there is an assurance that it won't fluctuate too greatly over time.
- The recognized lifespan of a residential project is 50 years (or 55 for affordable).
- There is interest in the U-Pass pilot, but there is also concern over how the pilot will hold up to the "additionality" test with the introduction of the fareless transit pilot in 2022/2023.

Geography

- Some developers care deeply about the location of their mitigation actions (either for community benefit or political reasons) and others are indifferent.

- An accepted and preferred method of determining mitigation actions' proximity to the project site is the "tiered" approach similar to watershed mitigation – first looking at and around the project site, then zooming out as needed.

Meeting #3 - COGs

Agency Oversight & Funding

- SGV COG is in the process of establishing a sub-regional VMT mitigation program. 26 of 31 agencies have on-boarded and an RFP for the study will be released shortly. The study will be two-fold – first developing the framework and second establishing a technical nexus. Key questions being asked in the first phase include:
 - Where is the right geographical divide?
 - How far should mitigation dollars be stretched?
 - What is the right split of mitigation dollars for local vs regional projects?
 - What percentage of the fee should go towards administrative costs?
- SGV COG's study will look at agency oversight and administration last, recognizing it as a potential roadblock and not necessary to determine prior to establishing a framework and nexus.
- COG representatives were interested in SGV COG's funding model for the study (requiring participating jurisdictions to contribute \$10K), but acknowledged that a sliding scale fee based on city size/revenue may be more appropriate

Geography

- There was general consensus that a subregional scale would be the most successful, however the boundaries can be confusing since there can be jurisdictions that sit in multiple COGs
- There was also an acknowledgment that mitigation actions know no boundaries, so there will need to be some level of coordination and collaboration between LADOT, COGs, and SCAG, however there was also discussion that COGs may not need to be involved this early on in the process.
- There were reservations amongst COG representatives on getting involved in this project too early, before LADOT and SCAG have solidified any details for COGs to react to.

Cost and Funding Timeline

- In general, there is a need to recognize budget shortages and limited tax revenue at the city level. Given this, there may be little appetite to put any additional pressure on development through mitigation programs.

SCAG VMT Bank/Exchange Pilot Technical Advisory Committee Meeting Summary

Agenda

1:00-1:15	Introductions
1:15-1:25	Where We've Been & Where We're Going
1:25-2:00	VMT Mitigation Program Framework
2:00-2:20	U-Pass Program Analysis
2:20-2:35	Next Steps / Phase II
2:35-3:00	Group Discussion

June 2, 2021
1:00 PM - 3:00 PM

LOCATION:
Microsoft Teams
[Click here to join](#)

Meeting Attendees

Organization/Agency	Name	Email	Attendance
Alston & Bird	Ed Casey	Ed.casey@alston.com	
AQMD	Elliott Popel	epopel@aqmd.gov	✓
AQMD	Lane Garcia	lgarcia@aqmd.gov	✓
AQMD	Laurence Brown	Lbrown1@aqmd.gov	✓
AQMD	Carol Gomez	cgomez@aqmd.gov	
AQMD	Jeffrey Inabinet	jinabinet@aqmd.gov	
CAJA/VICA	Chris Joseph	chris@ceqa-nepa.com	✓
California ARB	Heather King	heather.king@arb.ca.gov	✓
California ARB	Lana Wong	Lana.wong@arb.ca.gov	✓
California ARB	Jennifer Gress	jennifer.gress@arb.ca.gov	
Caltrans	Eric Sundquist	Eric.sundquist@dot.ca.gov	✓
Caltrans	Alyssa Begley	alyssa.begley@dot.ca.gov	
Caltrans	Yatman Kwan	Yatman.kwan@dot.ca.gov	
Cascadia Partners	Robert Liberty	Robert@Cascadia-Partners.com	✓
City of Pasadena	Conrad Viana	cviana@cityofpasadena.net	✓
City of Pasadena	Laura Cornejo	lcornejo@cityofpasadena.net	
Civic Enterprise / Council of Infill Builders	Mott Smith	mott@civcenterprise.com	✓
Climate Resolve	Bryn Lindblad	blindblad@climateresolve.org	✓
Estolano Advisors	Cecilia Estolano	cecilia@estolanoadvisors.com	
Fehr & Peers	Ron Milam	R.Milam@fehrandpeers.com	✓
Fehr & Peers	Jeremy Klop	J.Klop@fehrandpeers.com	✓
Fehr & Peers	Chelsea Richer	c.richer@fehrandpeers.com	✓
Fehr & Peers	Natalie Chyba	N.Chyba@fehrandpeers.com	
Gateway Cities COG	Melani Smith	msmith@gatewaycog.org	✓
Gateway Cities COG	Karen Heit	kheit@gatewaycog.org	
Gateway Cities COG	Nancy Pfeffer	nancy@gatewaycog.org	
Gibson Transportation	Sean Mohn	smohn@gibsontrans.com	✓

Organization/Agency	Name	Email	Attendance
Investing in Place	Jessica Meaney	Jessica@investinginplace.org	
LA City Attorney's office	Kathryn Phelan	kathryn.phelan@lacity.org	✓
LA City Planning	Laura Krawczyk	laura.krawczyk@lacity.org	✓
LA City Planning	Thea Trindle	theadora.trindle@lacity.org	✓
LA City Planning	Jason Mccrea	jason.mccrea@lacity.org	
LA City Planning	Milena Zasadzien	milena.zasadzien@lacity.org	
LA City Planning	Kathleen King	kathleen.king@lacity.org	
LA City Planning / Michael Baker International	John Bellas	john.bellas@lacity.org	✓
LA City Council Office - CD14	Nate Hayward	Nat.hayward@lacity.org	
LA County Public Works	Kent Tsuji	KTSUJII@dpw.lacounty.gov	✓
LA County Public Works	Jeff Pleytak	jplety@dpw.lacounty.gov	
LA Mayor's office	Stacy Weisfeld	stacy.weisfeld@lacity.org	✓
LA Mayor's Office	Thea Trindle	Theodora.trindle@lacity.org	✓
LA Mayor's Office	Nick Maricich	Nicholas.Maricich@lacity.org	
LA Mayor's Office	Melissa Alofaituli	Melissa.alofaituli@lacity.org	
LADOT	Alexander Wikstrom	alexander.wikstrom@lacity.org	✓
LADOT	Kay Sasaki	kay.sasaki@lacity.org	✓
LADOT	David Somers	david.somers@lacity.org	✓
LADOT	Tomas Carranza	tomas.carranza@lacity.org	✓
LADOT	Jay Kim	jay.kim@lacity.org	✓
LADOT	Rubina Ghazarian	rubina.ghazarian@lacity.org	✓
Metro	Avital Shavit	ShavitA@metro.net	✓
Metro	Mark Yamarone	yamaronem@metro.net	✓
Metro	Jocelyn Feliciano	FelicianoJ@metro.net	✓
Metro	Paul Backstrom	backstromp@metro.net	✓
Metro	Julio Perucho	PeruchoJ@metro.net	✓
Metro	Devon Deming	demingd@metro.net	✓
Metro	Tom Kefalas	kefalast@metro.net	

Organization/Agency	Name	Email	Attendance
Metro	Heather Repenning	repenningh@metro.net	
Move LA	Eli Lipmen	eli@movela.org	✓
Natural Resources Defense Council	Carter Rubin	crubin@nrdc.org	
OPR	Chris Ganson	chris.ganson@opr.ca.gov	✓
San Fernando Valley COG	John Bwairie	john@sfvkog.org	
San Gabriel Valley COG	Eric Shen	eshen@sgvcog.org	✓
SCAG	Rongsheng Luo	luo@scag.ca.gov	✓
SCAG	Michael Gainor	gainor@scag.ca.gov	✓
SCAG	Annie Nam	nam@scag.ca.gov	✓
SCAG	Jenna Hornstock	hornstock@scag.ca.gov	✓
SCAG	Sarah Jepson	jepson@scag.ca.gov	✓
South Bay Cities COG	Steve Lantz	lantzsh10@gmail.com	✓
ULI Los Angeles	Marty Borko	Marty.borko@uli.org	
South Bay Cities COG	Jacki Bacharach	jacki@southbaycities.org	
VICA	David Goldberg	david@agd-landuse.com	
VICA	Neill Brower	nb4@JMBM.com	✓
Westside Cities COG	Riley O'Brien	riley@estolanoadvisors.com	

Meeting Summary

The following summarizes comments (C), questions (Q), and response (R) that arose during the TAC meeting. The PowerPoint presentation and outcomes from the polling exercise are included as an attachment.

Where We've Been & Where We're Going

- Q: Could you remind us what you plan to do with the guidance the TAC provides to you and where this study is headed? *Mott Smith, Civic Enterprise*
 - R: This phase provides the framework for a VMT Mitigation bank or exchange that would be relevant and useful to the Southern California marketplace, including providing program specifications and criteria that create a defensible approach for the region. The next phase will

take what we learn from the U-Pass pilot program to create a more universal set of actions for the region. *Jeremy Klop, Fehr & Peers*

- R: We are working to create a pathway to providing more options than are available now; this TAC is the bookend to the first phase of the effort. *David Somers, LADOT*

VMT Mitigation Program Framework

Geography & Scale

- C: There seems to be an obvious trade-off between establishing a narrow geography for the application of mitigation and the opportunity for cost effectiveness. *Robert Liberty, Cascadia Partners*

Agency Oversight & Funding

- C: There are multiple roles that may or may not be consolidated into a single entity—broker, administrator, evaluator. *Robert Liberty, Cascadia Partners*

Mitigation Action Selection

- *No comments*

Data Analysis & Monitoring

- C: I've been working with TAP and Devon at LA Metro in how to quantify VMT from trip journey data. There is a state law (*Streets & Highways Code Sec. 31490*) that is not specific about who can get access data for research analysis. Our legal counsel has said we cannot provide any identifiable information from TAP data at all, even for research purposes—it can only be used in payment settlements. With that limitation, no data can be provided to a third-party monitor or data analyst. Metro is the only one who can do this analysis at this point. *Avital Shavit, LA Metro*

Regulatory Framework

- Q: Would an exchange fall under the mitigation fee statutory framework? *Robert Liberty, Cascadia Partners*
- C: Caltrans is working with UC Berkeley Law, looking at legal and regulatory issues of VMT mitigation programs. This work is just getting started and I can help connect the teams. *Eric Sundquist, Caltrans*

Program Risk Mitigation

- C: Developers are more concerned with cost stability, and the amount of risk of increased cost over time (e.g., re-evaluation) that capital and lenders can tolerate, and the ability of projects to provide continuous financing. *Neill Brower, VICA*
- Q: Can you clarify who are the beneficiaries of increased certainty? Isn't that related to who has what legal obligation? *Robert Liberty, Cascadia Partners*
 - R: What we've heard to date is that the development community was seeking increased certainty around cost of their involvement in this type of market. *Chelsea Richer, Fehr & Peers*
 - R: We recognize the economic reality of development projects, and the intent is to create a program that provides an opportunity that will compete for the available mitigation dollars, not increase the overall mitigation cost of development. *Ron Milam, Fehr & Peers*
- C: VMT is fundamentally about incentives that lead to behavior change. Even if a developer may not be incentivized to contribute to a VMT exchange because it doesn't help them in the short term (may not be able to achieve full mitigation for their project), there may be an incentive from the long-term benefits—as transportation behavior shifts, it becomes easier and more efficient to move the needle, and therefore mitigation becomes more cost efficient if there are more resources going into VMT mitigation. *David Somers, LADOT*
- Q: Isn't the potential benefit of a bank or exchange that VMT mitigation costs might be lower? *Robert Liberty, Cascadia Partners*
 - R: There is potential. A lot of the analysis is still in process. *Chelsea Richer, Fehr & Peers*
- Q: Is this program going to be outside of the CEQA/NEPA process? *Steve Lantz, South Bay Cities COG*
 - R: It is intended to be in the CEQA context as a "menu item" that applicants can choose from for mitigation. *Jeremy Klop, Fehr & Peers*

U-Pass Program Analysis

Efficacy

- Q: Is the team confident that the U-Pass program option can deliver trips via transit in lieu of vehicle trips? Or are these potentially in lieu of other non-vehicle modes? Or just new trips because the mode is now free? *Julio Perucho, LA Metro*
 - C: In spite of the fact that Metro ridership decreased overall, between fall 2018 and fall 2019, U-Pass participation increased almost 100%. *Devon Deming, LA Metro*

- C: We also have survey data that provides some travel behavior characteristics from before participation in the U-Pass program that is helpful in demonstrating additionality. *Jeremy Klop, Fehr & Peers*
- C: This data is also based on published research through CAPCOA. To demonstrate larger impacts on VMT reduction, we'll need more data from the program. *Ron Milam, Fehr & Peers*
- Q: If U-Pass appears effective despite a general decrease in transit ridership among other groups, do we know if the figures translate to other kinds of projects/target populations? *Neill Brower, VICA*
 - R: This is the first population-specific analysis we've done for transit subsidies. CAPCOA does have other transit subsidy research they've done. *Chelsea Richer, Fehr & Peers*
- Q: Have there been any studies on the effectiveness of the U-Pass program based on geographic boundaries (i.e., does it reduce effectiveness the farther away a project is from local schools)? *Kent Tsuji, LA County Public Works*
 - R: There is potential to do this type of analysis if the data becomes available, but unfortunately at this time we do not have access to that data and were limited in what questions we could answer. *Chelsea Richer, Fehr & Peers*
- C: I think the sensitivity testing confirms some of the elasticity tests from more refined travel demand models: free transit or increased headways really don't make a huge dent on VMT overall. *Julio Perucho, LA Metro*
- Q: Have we done an analysis of the E-pass program or the old A/B employer passes? I would expect the VMT reduction potential to be higher. *Avital Shavit, LA Metro*
 - R: Not yet. *Devon Deming, LA Metro*
- Q: Might you get a dramatically different effect if the riders were actually paid for taking transit? That is, could there be a big difference between a \$1 cost savings versus a \$1 payment in travel behavior change? If so, then the increase in VMT reduction may justify the greater subsidy. Is there information from behavioral science that suggest the answer? *Robert Liberty, Cascadia Partners*
 - R: There's behavioral science research that indicates that incentives do have a positive effect. We have a behavioral science expert on the project team for the next phase of work to explore how behavior may impact the effectiveness of strategies in the near- and long-term. *Chelsea Richer, Fehr & Peers*
- Q: How can we measure the effects of coupling multiple strategies? For example, the effect of combining 1) pricing parking, 2) paying students to take transit, 3) land use strategies would theoretically be more than 3x greater than either of those on their own. *Rubina Ghazarian, LADOT*

- We should also look at how this effort combines with other policy levers, not only fareless transit but congestion pricing at Metro. *Julio Perucho, LA Metro*
- This is an outstanding question that depends on the types of VMT reducing programs you are combining; for example, if you are combining several commuting programs, the VMT reduction may actually be less than the sum of its parts as users can only participate in one program at a time. *Chelsea Richer, Fehr & Peers*

Fareless Transit Initiative

- C: This strategy would need to be coordinated with the ongoing Fareless System Initiative as a potential method to replace the foregone fare revenues. *Steve Lantz, South Bay Cities COG*
 - R: LA Metro should be thinking about how a VMT mitigation program could fund a fareless transit initiative. *Ron Milam, Fehr & Peers*
- C: The fareless transit effort should be used as a programmatic mitigation option for highway projects. *Julio Perucho, LA Metro*

Program Risk Mitigation/Cost to Project Applicants

- C: It seems like CAPCOA is indicating that there will be a lot of EIRs and statements of overriding considerations. *Julio Perucho, LA Metro*
- C: It seems like the business that is paying for the mitigation may also contribute to the marketing effort, as part of the mitigation or just as part of its own business marketing. *Robert Liberty, Cascadia Partners*
- C: Do we have a measure of cost effectiveness like the CMAQ program uses? CMAQ uses \$/GHG emission reduction. I would be interested to see \$/VMT reduction analysis. [Background Material: 2005-05 Methods to Find the Cost-Effectiveness of Funding Air Quality Projects \(ca.gov\)](#)
Avital Shavit, LA Metro
- Q: Are there any VMT mitigation costs that put the U-Pass VMT mitigation cost in context? Viz. Is it expensive or inexpensive? And for this to meet CEQA would the program have to be endowed so as to be permanent? *Robert Liberty, Cascadia Partners*
 - R: We have seen other calculations that vary in their approach. What we're finding is that there is a very wide spectrum in efficacy of the programs and that there is a lot of nuance when looking at their efficacy; for example, there is research that shows telecommuting programs could actually increase VMT due to the increased time and flexibility individuals have in their schedule. *Ron Milam, Fehr & Peers*
 - R: In terms of endowment, that is still unknown at this time. *Chelsea Richer, Fehr & Peers*

- Q: Why are we requiring evaluation of someone's full travel behavior (beyond commute VMT changes) when we are only asking for impact analysis of their employment VMT? If you're only asking about daily VMT/employee in the impact statement of the EIR, why should you care about the VMT that is not associated in that calculation on the mitigation end? *Jay Kim, LADOT*
 - R: It really depends on what data is available – it poses a risk when the data is available to understand the trade-offs and net effect. *Ron Milam, Fehr & Peers*

Other

- Q: What about advancing land use strategies in an exchange? It may seem far-fetched, but could an exchange fund food distribution uses in an area that lacks nearby food access? Could we evaluate supporting land use strategies in a TDF Model? *David Somers, LADOT*
 - R: Similarly, I'd like to suggest improving jobs-housing match as another land use strategy. *Bryn Lindblad, Climate Resolve*
- C: Other transit subsidy studies include (1) [Stanford's Fair Value Commuting program](#) reduced SOV driving from 75% to 50% of its workforce; (2) [TravelChoice](#) personalized transit marketing program reduced VMT by 14%. *Bryn Lindblad, Climate Resolve*
- Q: What do we know about the actual demand for a VMT exchange/bank? How many projects might take advantage of the program? *Paul Backstrom, LA Metro*
 - R: The first annual [VMT report](#) is back for the City of Los Angeles. *Rubina Ghazarian, LADOT*

VMT Mitigation

Responding to the Challenge Of VMT Reduction



Agenda

1:00-1:15pm

1:15-1:25pm

1:25-2:00pm

2:00-2:20pm

2:20-2:35pm

2:35-3:00pm

Introductions

Where we've been & where we're going

VMT Mitigation Program Framework

Preliminary U-Pass Program Analysis

Next Steps / Phase II

Group Discussion

Introductions

Name

Organization

Favorite VMT-reducing
activity

→ [Go to: Menti.com](https://www.menti.com)

Where we've been & Where we're going

SB 743 Mitigation Options

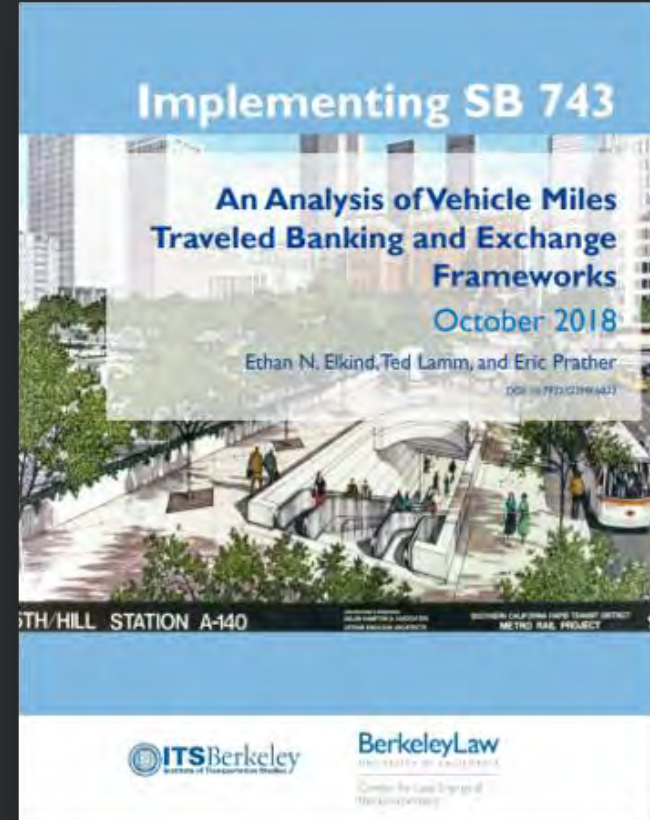
What's Feasible?

On-Site Mitigation Options

- Physical Design (Land Use or Transportation)
- Transportation Demand Management (TDM)

Off-Site Mitigation Options

- Impact Fees
- Banks
- Exchanges



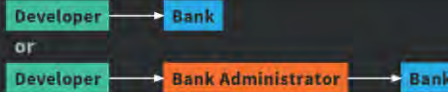
Existing Mitigation Challenges

- ⊖ **On-site mitigation may not be feasible or effective**
 - Physical design may be too much of a change to the project
 - Mitigation effectiveness is location-dependent
 - TDM is building tenant-dependent
- ⊖ **Off-site mitigation must comply with legal requirements/expectations, political hurdles, be acceptable to stakeholders, and be affordable to implement**

Off-Site Mitigation Program Options



Who pays who?

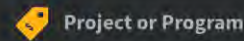
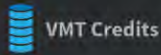


Who delivers the project/program?

Banks

Lead Agency or Developer

What are you paying for?



What is being evaluated?

Value of VMT Reduction

Project'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.

RECAP

The Role of the TAC

As a member of the TAC, we need your help to:

- Share insights on the interest and need of an off-site, multi-agency VMT Mitigation Program
- Provide guidance on program criteria and key considerations
- Review deliverables and help shape the Pilot Program
- Spread awareness of this program in communities across LA County



A pause for questions!

VMT Mitigation Program Framework Elements

Geography & Scale

Agency Oversight & Funding

Mitigation Action Selection

Data Analysis & Monitoring

Regulatory Framework

Program Risk Reduction

VMT Mitigation Program Criteria

Topic	Preliminary Recommendations	Further Exploration
Geography & Scale	<ul style="list-style-type: none">• Tiered mitigation boundaries (local options → regional options)• Scalable program design to enable local off-site options first with expansion to regional mitigation options	<ul style="list-style-type: none">• Establishment of tiers:<ul style="list-style-type: none">• Do jurisdictional boundaries matter, or should it be distance-based?• What is the right distance from a project to be considered a “local” mitigation action?

VMT Mitigation Program Criteria – Geography & Scale



Local level: Local jurisdictions may establish off-site mitigation programs that are self-contained, which may still be fairly limited in VMT reduction potential.



Multi-agency level: As multiple agencies express interest in expanding the reach of off-site mitigation options and growing the potential for meaningful VMT reduction, the need for more oversight also expands, to ensure consistency in technical approach and legal rigor across mitigation actions.

- Priority could still be granted to mitigation actions that are proximate to the project site.
- A multi-agency program should establish how existing single-agency programs might transition in.



State level: As VMT mitigation programs gain traction throughout the State and pilots programs come online, state agencies such as Caltrans or CARB may have increasing interest in administering a state-wide program. With that in mind, a multi-agency program should be flexible enough to adapt and scale up over time.

VMT Mitigation Program Criteria

Topic	Preliminary Recommendations	Further Exploration
Agency Oversight & Funding	<ul style="list-style-type: none">• Careful selection of an administering agency• Transparency and accountability achieved through reporting and/or third-party oversight• Dedicated funding source should be baked into the cost structure	<ul style="list-style-type: none">• What are the key responsibilities of the administering agency?• What are the key considerations when choosing the Administrator?• How does the Administrator recuperate costs?• What roles do other key stakeholders – who are not in the administrator role – hold?

VMT Mitigation Program Criteria – Agency Oversight & Funding → [Go to: Menti.com](https://www.menti.com)

Administrator Criteria	Caltrans	CARB	SCAQMD	SCAG	Metro	COGs	Locals
Interest in the program							
Influence in the region							
Program management experience							
Ability to collect fees							
Staff capacity to execute (or manage) nexus and valuation analyses							
Staff and funding resources for upstarting the program							

VMT Mitigation Program Criteria

Topic	Preliminary Recommendations	Further Exploration
Mitigation Action Selection	<ul style="list-style-type: none">• Maximize flexibility in types of mitigation actions (infrastructure, operations, and programmatic)• Develop robust framework to select actions for the Program and prioritize for funding	<ul style="list-style-type: none">• What does the Action Selection Framework look like?• Depending on program structure, what are the regulatory limitations on what type of actions may be included?

VMT Mitigation Program Criteria – Initial Mitigation Action Selection Framework



VMT Reduction Potential – mitigation actions must reduce VMT



Additionality – mitigation actions must demonstrate that the VMT reduction estimated for the action is above and beyond what would have occurred without the mitigation program



Equity – mitigation actions should demonstrate benefit for historically and presently under-resourced communities



Regional mobility – mitigation actions should improve walking, biking, and transit access and mobility for the region, recognizing that large-scale, forward-thinking actions are what will be needed to significantly reduce VMT



Cost Effectiveness – the most cost-effective mitigation actions should be prioritized first, with a cost/benefit analysis that includes a broad set of benefits such as VMT reduction potential, ability to improve mobility, and ability to address equity needs



Marketing approach – mitigation actions should be paired with strong marketing or program design strategies that cultivates the behavioral change required to maximize the VMT reduction potential of the action

VMT Mitigation Program Criteria

Topic	Preliminary Recommendations	Further Exploration
Data Analysis & Monitoring	<ul style="list-style-type: none">• Establish standardized data specification to enable consistent analysis, expectation of data-sharing between participating agencies and program administrator• Establish standardized analysis to evaluate VMT impacts and mitigation effectiveness for participating agencies• Establish standardized monitoring of VMT reduction effectiveness with full program evaluation and action-specific monitoring	<ul style="list-style-type: none">• Understanding existing data limitations and establishment of agreeable data specification for partners• Development of recommended practice for data and methods to quantify mitigation action reduction benefits• Establishment of a valuation methodology to determine the value of VMT reduction credits (if the program design requires)

VMT Mitigation Program Criteria

Topic	Preliminary Recommendations	Further Exploration
Regulatory Framework	<ul style="list-style-type: none"> • Framework must comply with (evolving) legal and regulatory environment, including: <ul style="list-style-type: none"> • CEQA Statute • CEQA Guidelines • Mitigation Fee Act (if structured as a fee) • Nexus and rough proportionality standards established by case law (i.e., Nollan and Dolan) also apply. • While not directly applicable to VMT mitigation programs, the Fish & Game Code is reasonable to use as a reference that outlines the necessary steps to develop a conservation bank for mitigation purposes. 	<ul style="list-style-type: none"> • How, if at all, does the Mitigation Fee Act apply to a mitigation program that is structured like a bank or exchange? • What other cases might apply to this approach to VMT mitigation?

VMT Mitigation Program Criteria

Topic	Risk Concern	Initial Recommendations	Further Exploration
Program Risk Reduction	Program Clarity	Program must be legible and intuitive to project applicants, with standardized and automated analysis methods where possible	How to balance local lead agency control over VMT analysis, thresholds, impacts, with a standardized multi-agency approach?
	Cost Certainty	Cost certainty should be prioritized, with options to select more certainty & costs paid up-front or less certainty & costs paid over lifespan	How might this be structured? (ARM vs Fixed Mortgage?) What is a reasonable lifespan, and reasonable mitigation timeline to assume? How might the cost of VMT mitigation affect development feasibility in the region?
	Mitigation Ratios	A mitigation ratio greater than 1:1 should be adopted to address the uncertainty in VMT reduction potential of mitigation actions.	What is the appropriate mitigation ratio? (How much uncertainty is tolerable?)

A pause for questions!

Preliminary U-Pass Program Analysis

U-Pass Program Assessment

Action Criteria U-Pass Program Detail

VMT Reduction Potential

- Has the potential to reduce VMT by providing a viable, low-cost transit option for college students in LA County
- VMT reduction potential of the program is almost 128,000 daily VMT (dependent on a series of parameters that may shift with geography and school)
- Additional unmeasurable VMT reduction benefits associated with early-adoption of transit use by students leading to more transit-oriented travel behavior later in life, which likely has a reduction effect on VMT over time that is not captured in this analysis

Additionality

- Clears the 'additionality' test because passes would be distributed to students who are not currently enrolled in the program; subsidized transit passes have been shown to increase the number of trips shifted to transit
- But for additional investment to expand the program or additional subsidization of passes for students already enrolled, the VMT reductions would not occur

Equity

- Research has shown that transportation costs can be a barrier to education, with undue burden on low-income students. The U-Pass program seeks to address this barrier by reducing the cost of riding transit
- Wide eligibility – any student enrolled in a credit or non-credit course at a vocational, two-year, or four-year educational institution is eligible for a U-Pass. Schools that have greater low-income and person of color student populations could receive additional prioritization for receiving subsidized U-Passes through the pilot program

Regional mobility

- U-Pass is eligible on Metro + nine LA County transit agencies (Culver City Bus, GTrans, DASH, Torrance Transit, Long Beach Transit, Montebello Bus Lines, Norwalk Transit, Pasadena Transit, and Big Blue Bus), enhancing regional mobility for U-Pass holders
- Additional expansion of these partnerships would result in greater regional access.

Cost Effectiveness

- Additional analysis needed to determine the cost of the program to LA Metro and determine overall cost effectiveness

Marketing approach

- Currently, marketing and promotion of the U-Pass program is largely at the discretion of participation schools
- U-Pass as a pilot program should be paired with a strategic marketing program that is aimed at increasing students' awareness of the program and the benefits of using the pass
- Effective marketing may increase the VMT reduction potential of the program over time

U-Pass Program – VMT Reduction Potential (Baseline Calculations for City of LA)

Metric	Findings
Daily VMT Reduction Potential per Pass ¹	0.09
Number of Passes Required to Reduce 1 Daily VMT	10.79
Average Amount Invoiced by LA Metro per Pass ²	\$94.18
Approximate cost of reducing 1 daily VMT ³	\$1,016.22

1. Daily VMT reduction potential per pass calculated utilizing CAPCOA methodology. See Table 11 for details on the calculation.
2. Average amount invoiced by LA Metro per U-Pass participant in the Fall 2019 semester. This cost includes boardings and \$2.00 sticker cost.
3. (Average amount invoiced)x (Number of passes required to mitigate 1 Daily VMT). This value is subject to change and based on the current invoice structure of the U-Pass program. LA Metro may decide to restructure the fee schedule of the U-Pass program to better function as a mitigation action, such as implementing a flat rate per U-Pass.

U-Pass Program Scenario Testing Results

Parameter ¹	Scenario		
	Baseline	Full Subsidy	UCLA Case Study
Average transit fare without subsidy (\$)	\$1.75	\$1.75	\$1.75
Subsidy amount (\$)	\$1.00	\$1.75	\$1.00
Transit mode share of all college student trips (%) ²	14%	14%	25.5%
Elasticity of transit boardings with respect to transit fare price (unitless) ³	0.43	0.43	0.43
Percent of transit trips that would otherwise be made in a vehicle (%) ⁴	20%	20%	34%
Average student generated daily VMT (Daily VMT) ⁵	14.0	14.0	14.0
Daily VMT Reduction Potential per Pass ⁶	0.09	0.16	0.30
Number of Passes Required to Reduce 1 Daily VMT	10.8	6.2	3.3
Percent Change over Baseline (increase in VMT reduction)	--	75%	223%

1. Bolded parameters indicate changes over baseline.
2. "Baseline" and "Full Subsidy" scenarios utilize California Household Travel Survey (CHTS, 2012) travel characteristics for 2-year and 4-year college students in the City of Los Angeles. The "UCLA Case Study" scenario utilizes transit mode share data for students presented in *State of the Commute* (UCLA, 2019).
3. *Nature and/or nurture? Analyzing the determinants of transit ridership* (Taylor, 2008). This research is the most up-to-date analysis available, however, it represents data collected prior to the full economic rebound from the 2008 recession. It should be revisited as additional research becomes available.
4. LA Metro U-Pass Survey Data. Percent of students who stated they did not previously ride transit when applying for the U-Pass program in Fall 2019. "Baseline" and "Full Subsidy" scenarios both utilize the percentage of students across the whole program, while the "UCLA Case Study" example utilizes survey results from UCLA participants specifically.
5. All scenarios utilize California Household Travel Survey (CHTS, 2012) travel characteristics for 2-year and 4-year college students in the City of Los Angeles.
6. Calculation based on refinements to the reduction formula for "Implement Subsidized or Discounted Transit Program" found in *Handbook Update Measure Quantification Methodology* (ICF, 2021).

U-Pass Program – Initial Pilot Program Recommendations



Cost Structure of the Program: Review cost structure of the U-Pass program to determine the cost of the program to LA Metro in order to right-size the cost of participation in the program to project applicants and determine the overall cost effectiveness of the program.



Cost to Participants: Consider fully subsidizing the passes for students, maximizing VMT reduction potential. Consider switching to an 'opt-out' format from an 'opt-in' format for students at participating schools.



Data Collection and Analysis: A data specification should be developed to streamline the data collection and analysis for the U-Pass program. The data specification should be inclusive of survey and ridership data and created in partnership with LA County Counsel.



Program Monitoring: Performance metrics should be identified for each of the action criteria previously described to evaluate the efficacy of the U-Pass program as a mitigation action.

U-Pass Program – Initial Pilot Program Recommendations (cont'd)



Equity Priority: Consider prioritizing schools that have greater low-income and person of color student populations for receiving subsidized U-Passes through the pilot program.



Update the VMT Reduction Analysis: Once a pilot school is selected, update the VMT reduction potential with the most up-to-date and location-/school-specific data available, once a pilot school is selected.



Program Marketing: Develop a standardized, strategic marketing program that is aimed at increasing students' awareness of the program and its benefits, deployed at the pilot school and other participating schools.



Ongoing Stakeholder Engagement: SCAG, LADOT, and LA Metro should continue ongoing coordination with key stakeholders in the region, including this TAC, with additional representatives added as needed throughout the pilot program.

A pause for questions!

Next Steps / Phase II

Next Steps for the Project Team

- Identify interested project applicant for U-Pass Program Pilot
- Further refinement of Multi-Agency Mitigation Program Framework (compliance, equity, geographic scale, program administration, monitoring, costs)
- Analysis of additional Mitigation Actions' ability to clear additionality test and reduce VMT

Next Steps for the TAC

- Continued engagement, seeking input from an expanded TAC
- Topic-specific deep dives with expert advisors (legal, economic, CEQA, academic)
- Discussion of expanded public input process
- What is your interest in continuing to be involved during Phase II of this study? →Go to: [Menti.com](https://www.menti.com)

Group Discussion

Questions for the TAC

- Anything you would add to the Program Recommendations? Is there anything out of alignment with other ongoing efforts?
- Are you interested in participating in the U-Pass program mitigation action? If not, is there anything you'd like to see included in the program recommendations that would make this a more enticing program?

Name, Organization, Favorite VMT-reducing activity?

Conrad Viana, City of Pasadena,
Telework

Xander Wikstrom, LADOT, Riding my
electric bike

Julio Perucho, Metro, Riding Rail

Elliott Popel, South Coast AQMD,
Telecommuting

Lane Garcia, South Coast AQMD,
BICYCLE RIDER FOR LIFE

Chelsea Richer, Fehr & Peers, walking
to the grocery store

Mott Smith, Council of Infill Builders,
Eliminating Minimum Parking
Requirements!

Kathryn Phelan, City of Los Angeles,
City Attorney's Office, working at
home

Lana Wong, CARB, Walking

Name, Organization, Favorite VMT-reducing activity?

Avital Shavit, LA Metro, Telework tied with Biking

Jeremy Klop, Fehr & Peers, Living close to the kids' school

Eric Sundquist, Caltrans
Commuting/errands by bike.

Mark Yamarone, LA Metro, Biking to Train

Devon Deming, LA Metro, Bicycling! :)

Jocelyn Feliciano- Metro-Telecommuting

Tomas Carranza, LADOT, Walking & Telework

Kent Tsujii, LA County DPW, Telework

Stacy Weisfeld, Mayor Garcetti's Office, Active transportation

Name, Organization, Favorite VMT-reducing activity?

Robert Liberty, Cascadia Partners,
dynamic tolling used to fund
affordable housing near transit

David Somers, LADOT, Riding a bike
on low stress neighborhood streets

Heather King, CARB. Bike
commute/kid school drop-off.

Sean Mohn/Gibson Transportation
Consulting, Inc./Working Remotely

Laurence Brown, South Coast AQMD,
Exchanging general purpose lanes for
transit and bike lanes

Rubina Ghazarian, LADOT, gardening

John Bellas, Working from home

Jenna Hornstock, SCAG, walking

Kay Sasaki, LADOT, transit subsidies
(or free transit!)

Name, Organization, Favorite VMT-reducing activity?

Jay Kim, LADOT, Telecommuting

Bryn Lindblad, Climate Resolve, biking and smiling at neighbors :-)

Melani Smith, Gateway Cities COG, dog walk/walk to the grocery store.

Paul Backstrom, Metro, staying local for all activities and biking to those destinations

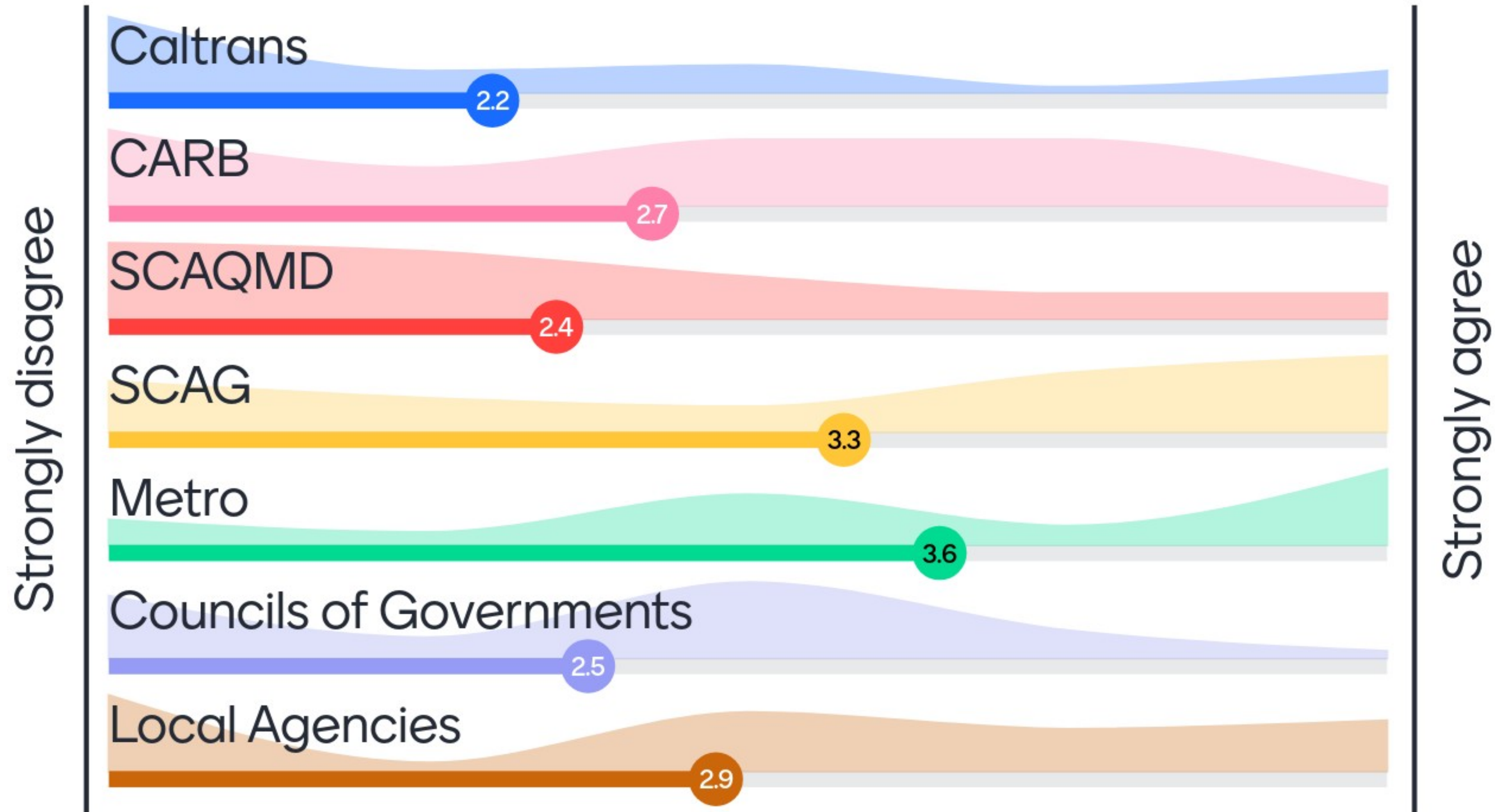
Neill Brower, Jeffer Mangels Butler & Mitchell, telecommuting and walking to the grocery store.

Chris Ganson, OPR; hard to choose but probably have to go with cycling

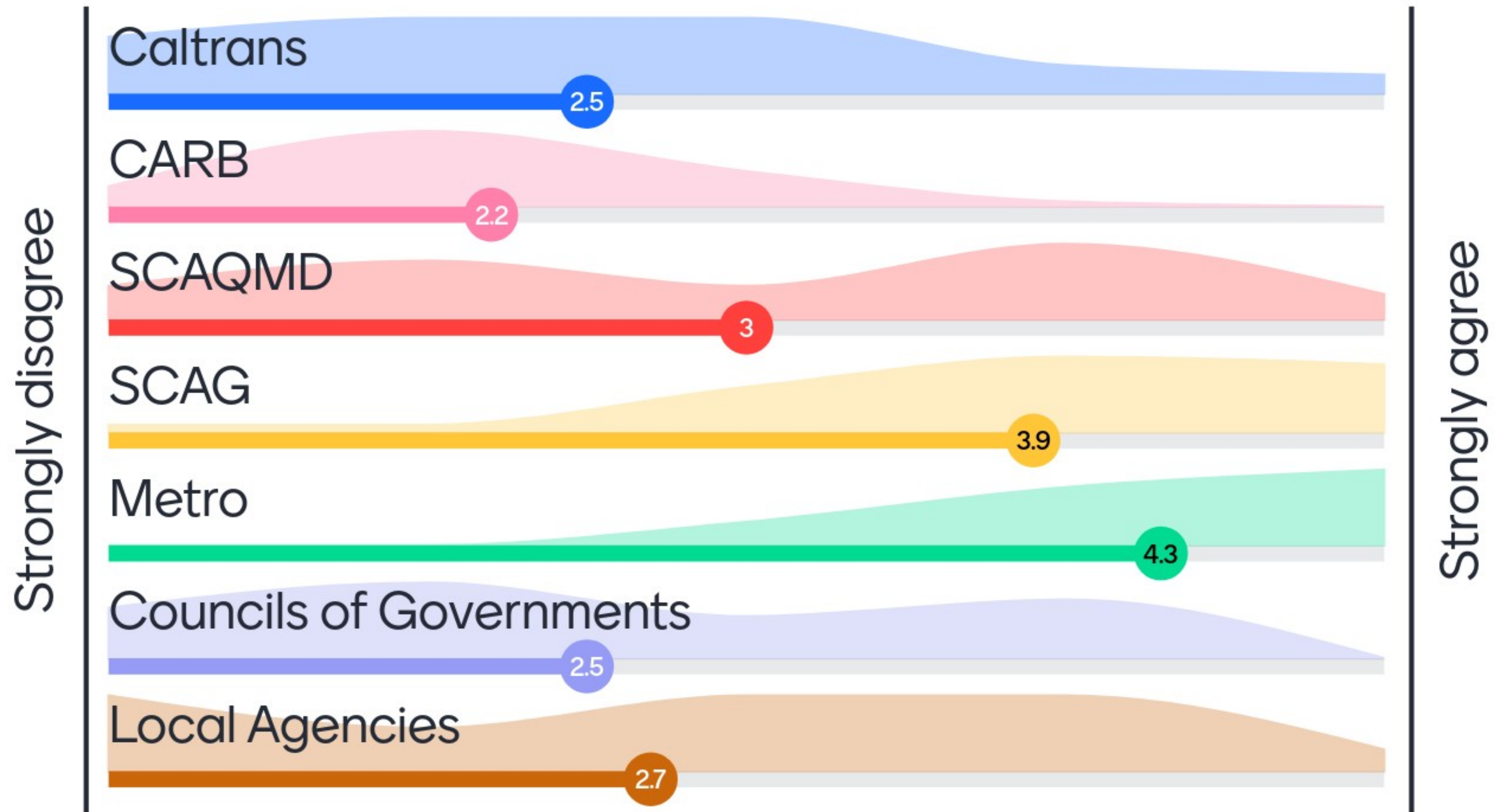
Thea Trindle, City of LA Mayor's Office, cycling!

Eric Shen, SGVCOG, photographing city scape by foot.

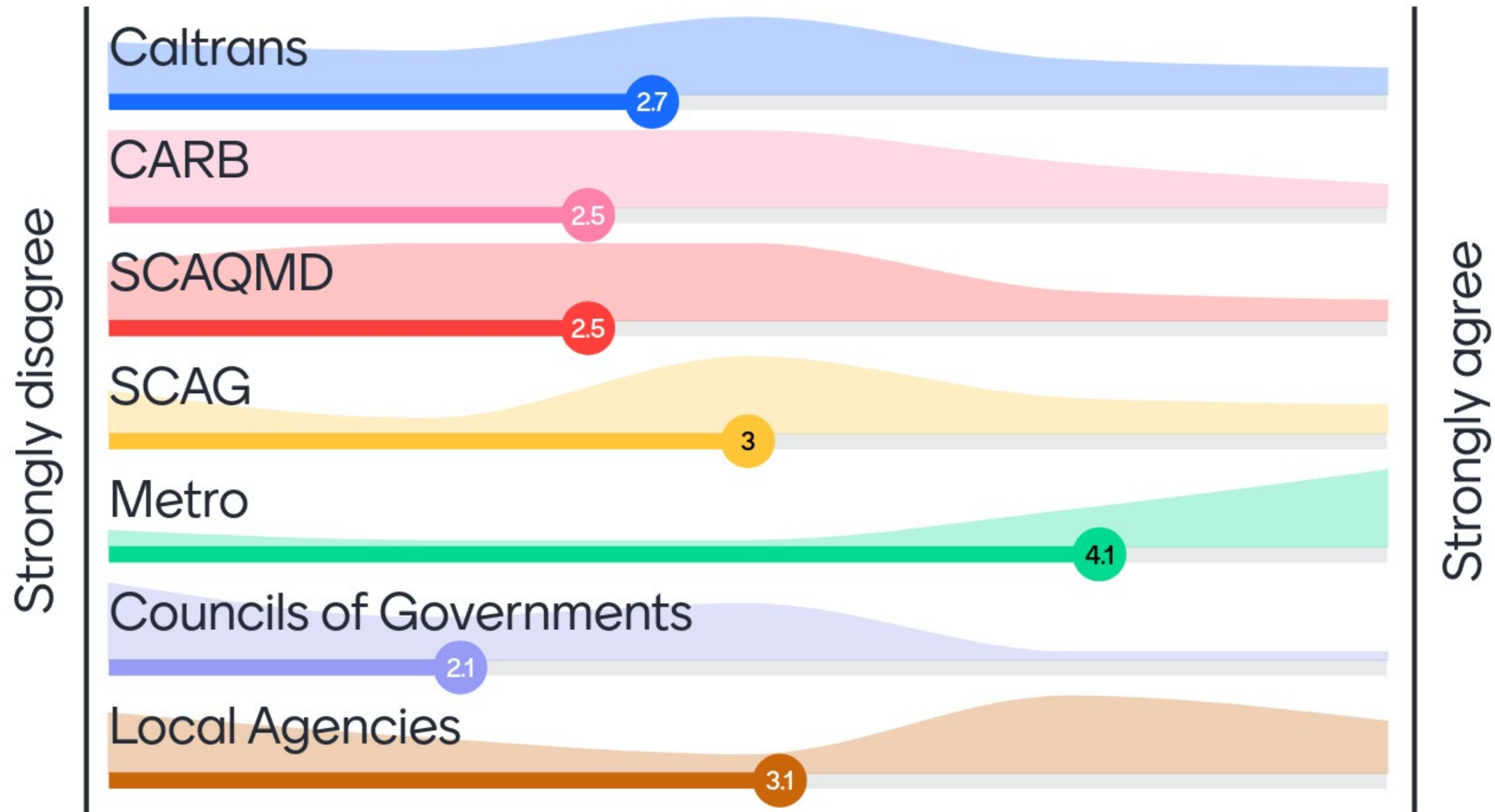
Interest in the Program



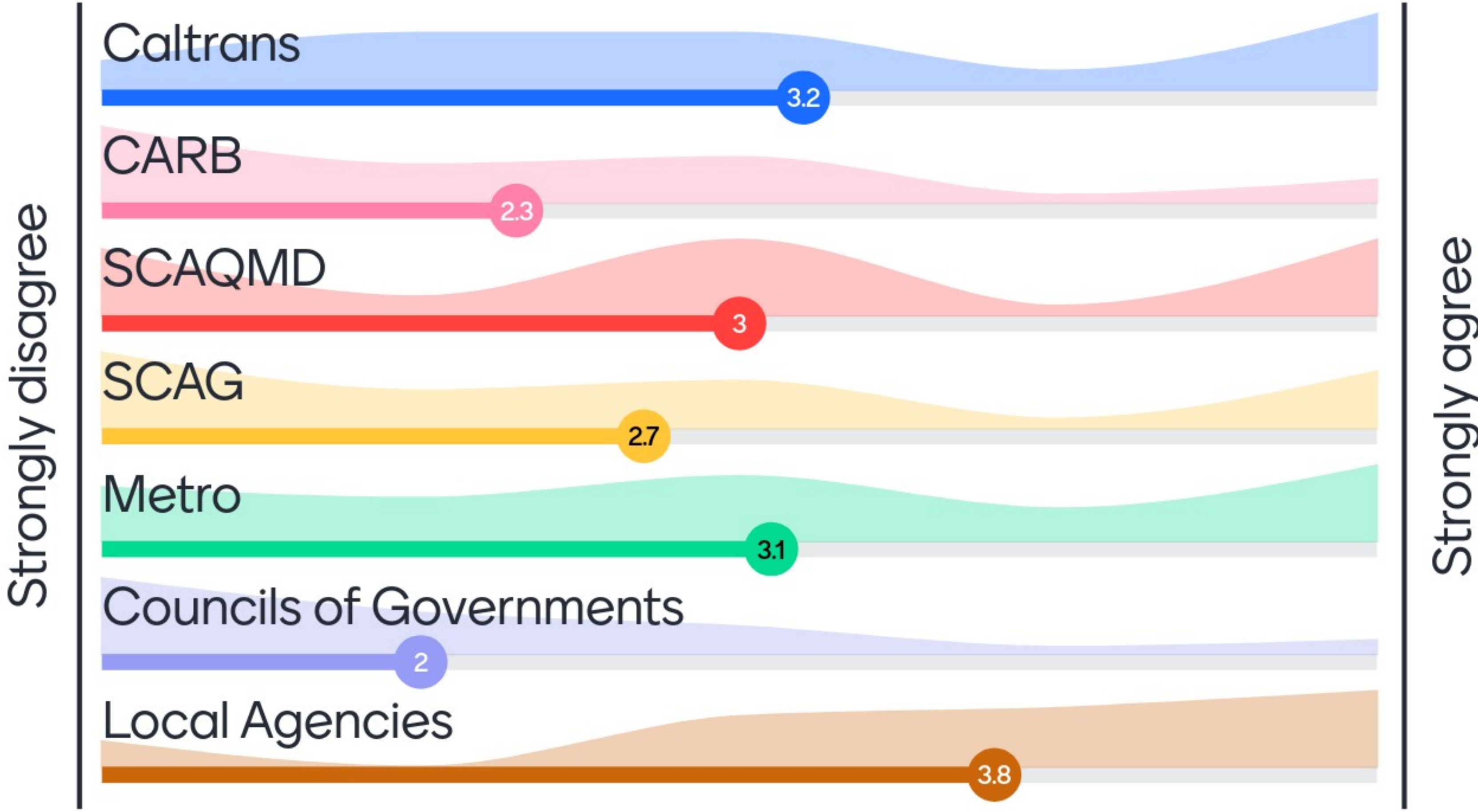
Influence in the Region



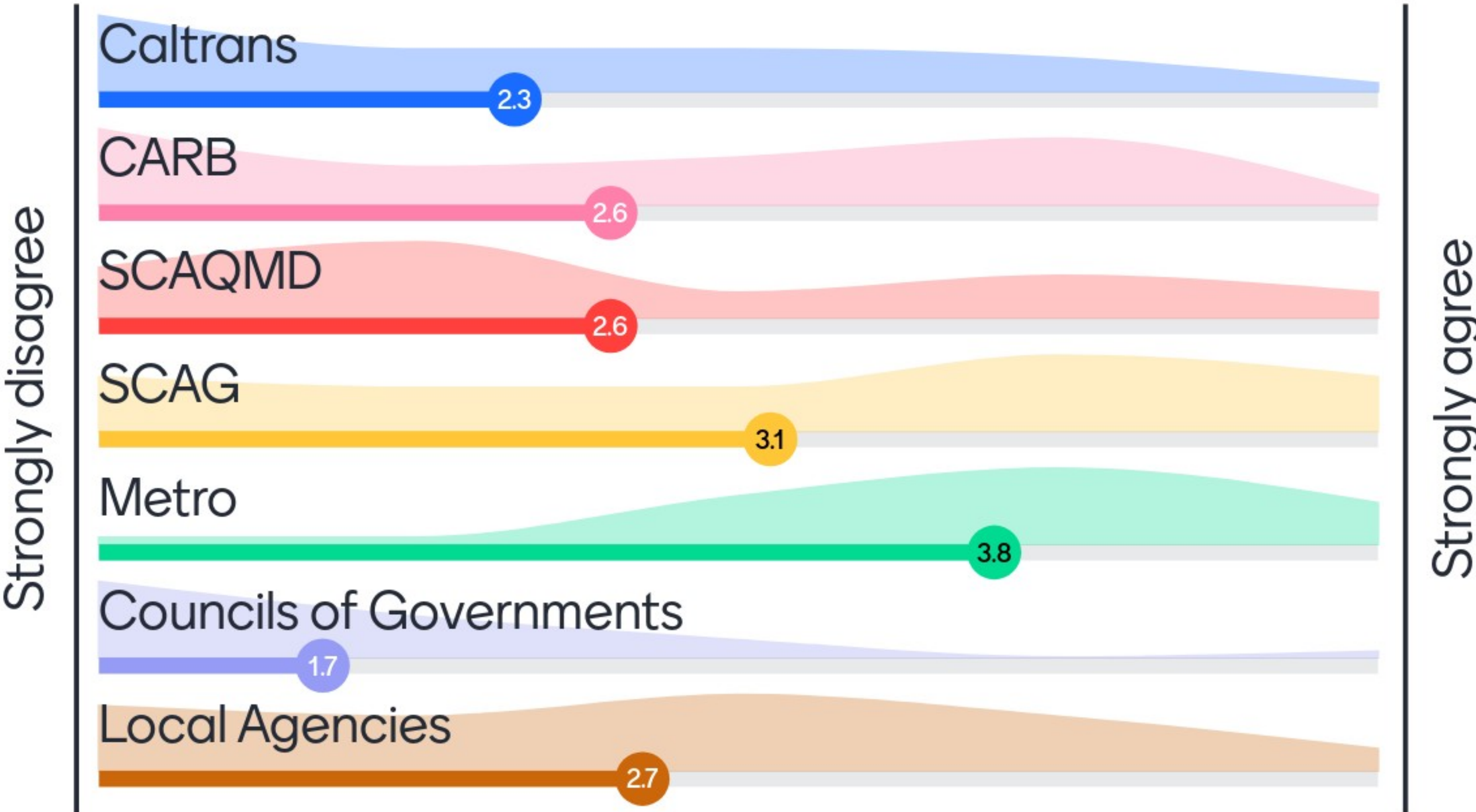
Program Management Experience



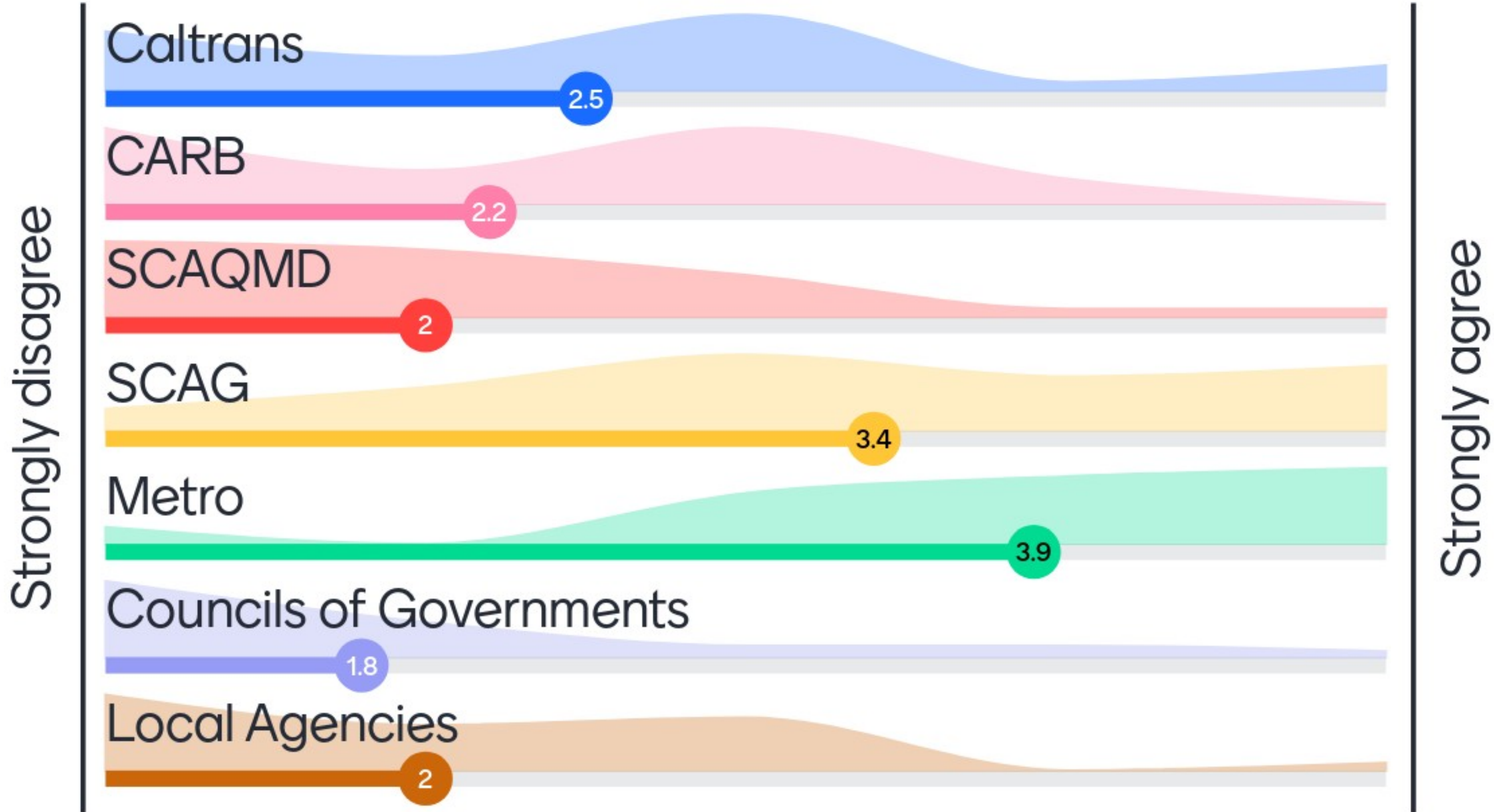
Ability to Collect Fees



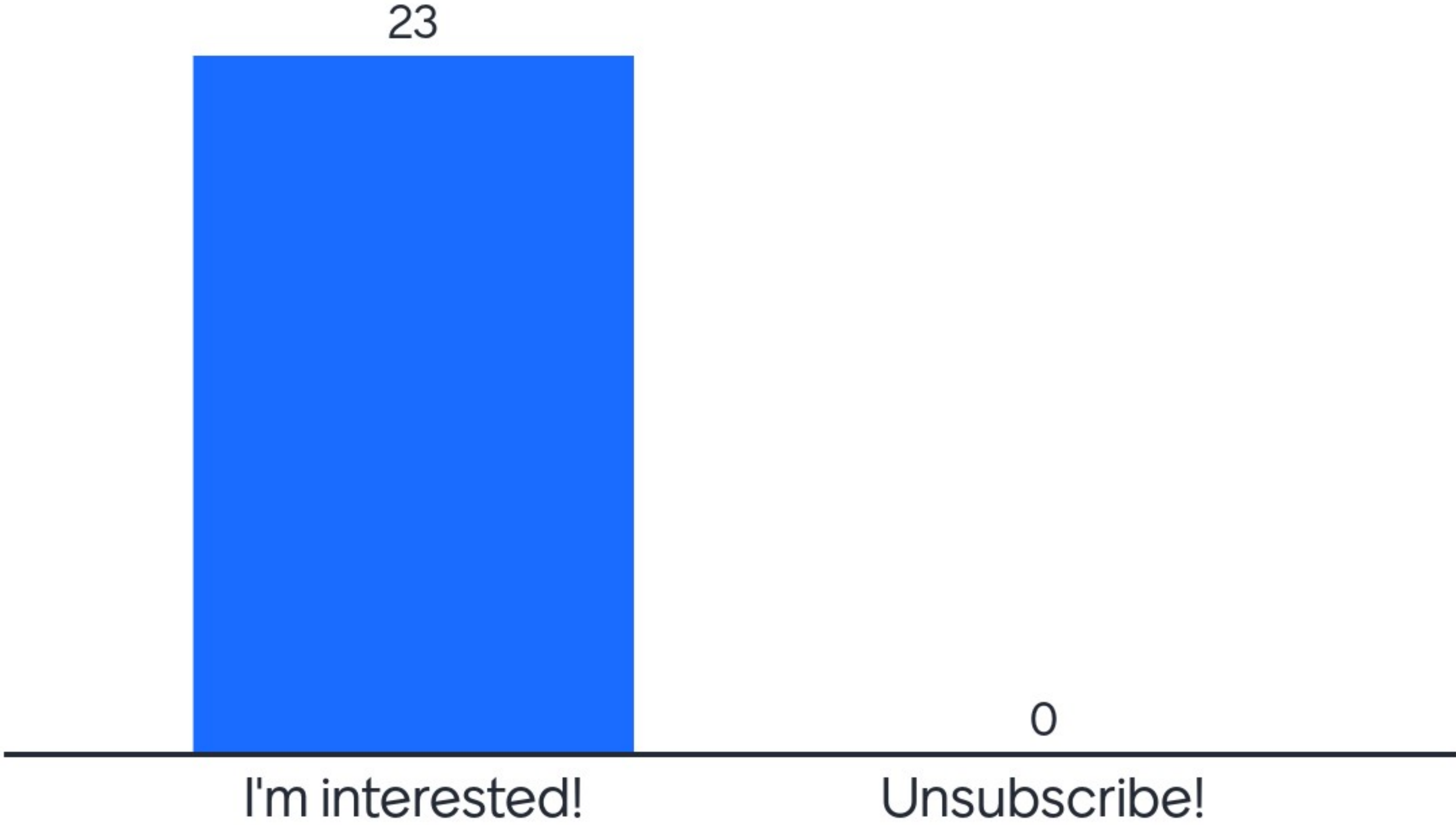
Staff Capacity to Execute (or manage) Nexus and Valuation Analyses



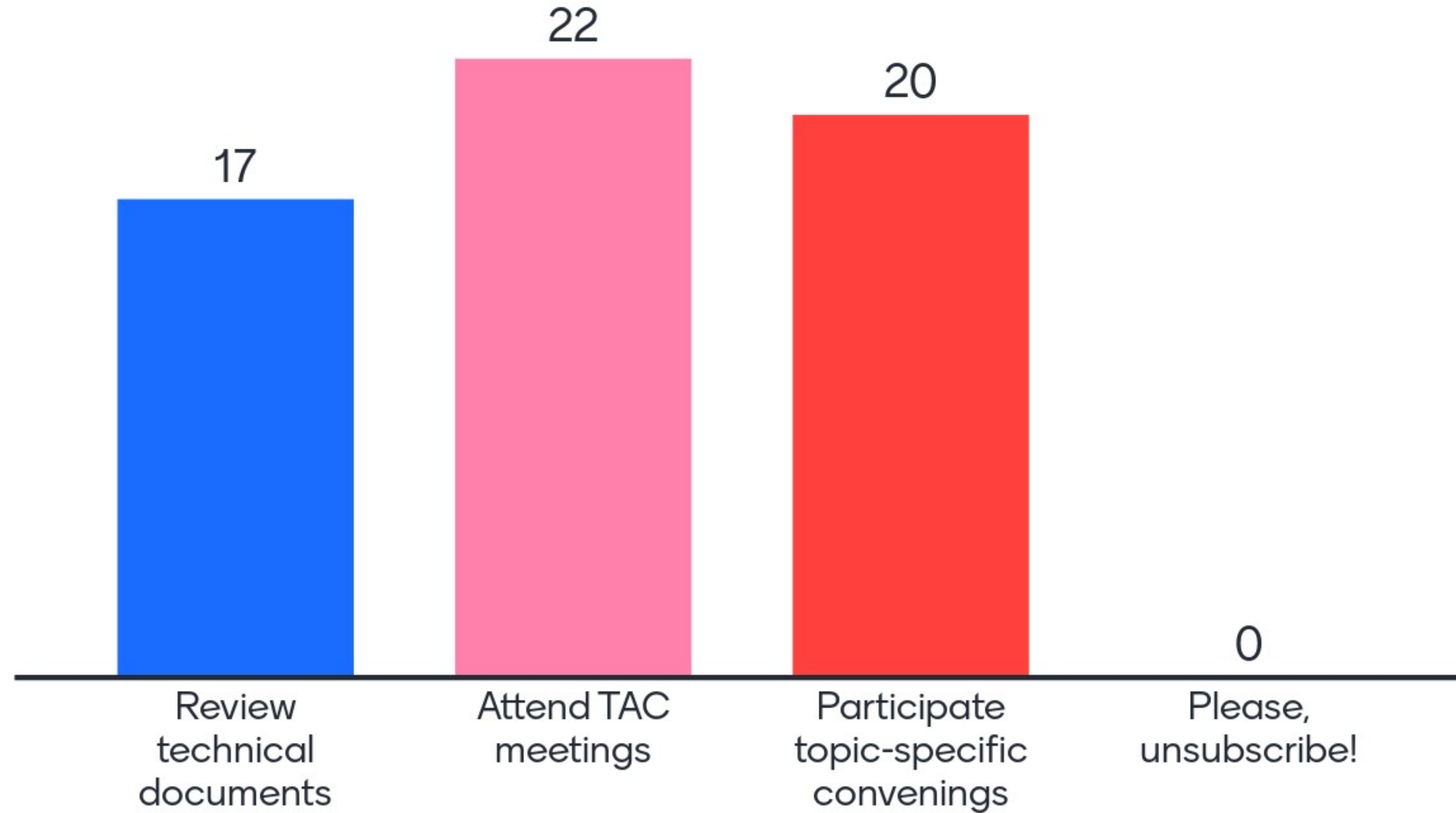
Staff and Funding Resources for Upstarting the Program



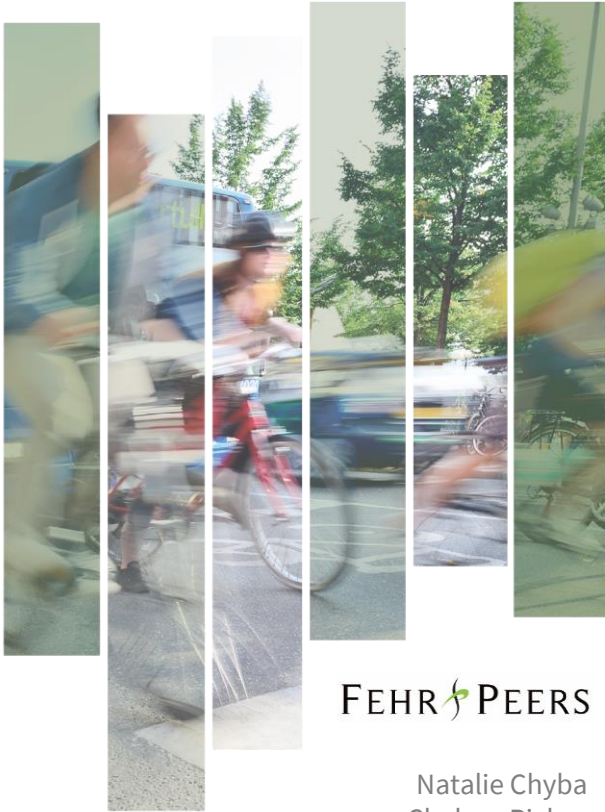
What is your interest in continuing to be involved during Phase II of this study?



How would you like to be involved?



Appendix C: Literature Review Summary



FEHR  PEERS

Natalie Chyba
Chelsea Richer

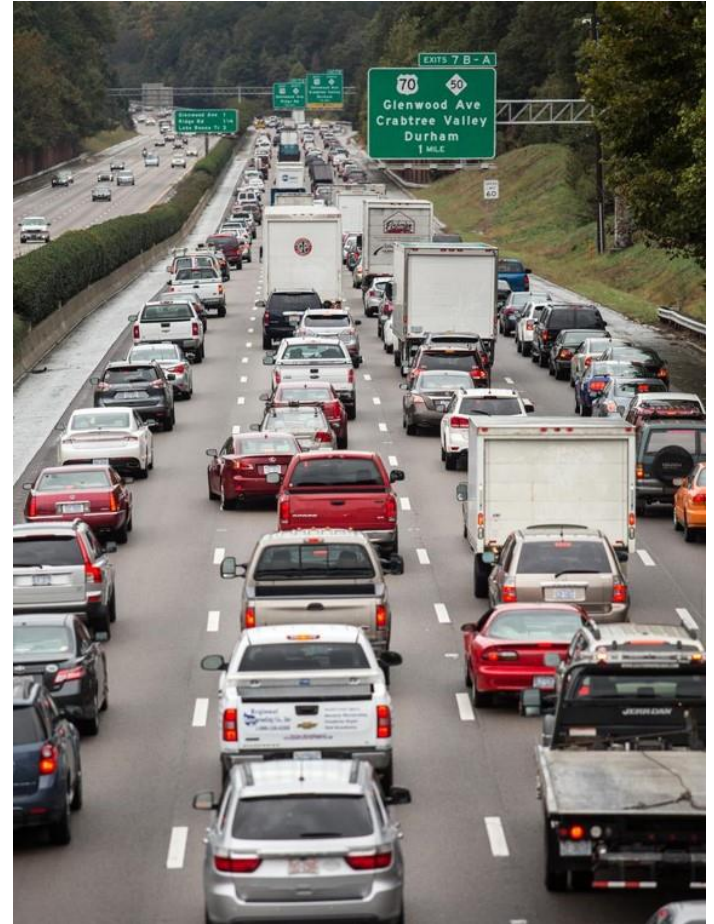
Literature Review Summary

LADOT VMT Bank/Exchange Project

Purpose

Review case studies and literature that provide context for the precedent and procedural considerations of Mitigation Banks with a special emphasis on:

- Agency Oversight & Funding
- Program Criteria & Efficacy
- Implementation & Legality
- Geography/Scale
- Duration
- Monitoring



Materials Reviewed

Reviewed 14 documents that fell into 4 categories:

- **Academic:** Research-based documents
- **Pilot Project:** Transportation pilot project case studies
- **Precedent:** Examples across other fields that provide precedent for banks as mitigation strategies
- **Procedural:** Documents that outline the procedural steps necessary to implement mitigation banks

Category	Document
Academic	VMT Mitigation Through Fees, Banks, & Exchanges
Academic	Maximizing the Ecological Contribution of Conservation Banks
Academic	A Flawed Law: Reforming California's Housing Element
Academic	Implementing SB 743: An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks
Pilot Project	Perfecting Policy with Pilots: New Mobility and AV Urban Delivery
Pilot Project	Go Centennial Final Report
Precedent	Conservation and Mitigation Banking Guidelines
Precedent	Transportation Impact Review Guidelines
Precedent	Transportation Demand Management Strategies in LA VMT Calculator
Procedural	An Overview of Mitigation Processes and Procedures
Procedural	Cap-and-Trade Regulation Instructional Guidance
Procedural	Mitigation Fee Act
Procedural	TIA Fee Program Study Report
Procedural	City Of Los Angeles Ordinance 184505: LA Park Fees

General Overview

- Programmatic approaches to mitigate impacts are used for transportation, air quality, greenhouse gases, and habitat. Banks and exchanges exist for wetlands preservation and habitat conservation, although these applications are focused on **protecting fixed land amounts** versus **reducing a metric that fluctuates** over time.
- VMT Mitigation Exchanges require the developer to implement a predetermined VMT-reducing project or propose a new one
- VMT Mitigation Banks create a monetary value for VMT Reduction such that a developer could purchase VMT reduction credits.

General Overview

VMT Mitigation Through Fees, Banks, and Exchanges lists the following benefits and challenges of VMT Mitigation Banks

Benefits	Challenges
<ul style="list-style-type: none">• Added certainty to development costs• Allows for regional scale projects• Allows for mitigation projects to be in other jurisdictions• Allows regional or state transfers• Expands mitigation options to include costs for programs, operations, and maintenance• Increases potential VMT reduction compared to project site mitigation only	<ul style="list-style-type: none">• Requires "additionality"• Can be time consuming and expensive to develop and maintain• Requires strong nexus• Political questions about distributing mitigation dollars/projects• Increases mitigation costs for developers because it increases feasible mitigation options• Unknown timeframe for mitigation life• Effectiveness depends on scale of the program

Agency Oversight & Funding



What is the right agency to oversee the VMT Mitigation Banks?

- **Wildlife Mitigation Banks:** Third parties enter into an agreement with the Department of Fish & Wildlife to manage “banks”. The Department issues them credits that they can then sell to recoup costs, or use themselves.
- **Precedent in Los Angeles:** Departments other than City Planning collect and manage mitigation fees, for example Department of Recreation and Parks.

Agency Oversight & Funding



How are administrative costs recuperated?

- **The Department of Fish and Wildlife:** Halted their program due to lack of funding. Legislation was passed in 2013 that included associated fees for cost recovery.
- **Pilot Project Lessons Learned:** Important to consider agency oversight early on, especially in regard to increased demand on staff time.

Program Criteria/Efficacy



How does a VMT Bank demonstrate long-term viability? Are programs taking advantage of economies of scale?

- **Wildlife Conservation Banks:** Long-term management plans ensure that the bank is properly managed, monitored, and maintained in perpetuity.
- **Economies of Scale:** The primary purpose of wildlife mitigation banks is to take advantage of economies of scale that are often not available to individual mitigation projects.

Program Criteria/Efficacy



What program criteria are required for a VMT Bank?

- **Cap-and-Trade Program:** Offset credits are required to be real, additional, quantifiable, permanent, verifiable, and enforceable.
- **Pilot Project Lessons Learned:** For a pilot to be effective it must be paired with broad and comprehensive marketing that ensures all users are well educated on the program from the its start.

Program Criteria/Efficacy



How does a VMT Bank adequately cover all the variables that influence mode choice?

- **Combination of Stressors:** Wildlife conservation banks may not provide appropriate mitigation for species threatened by a combination of stressors other than development.
- **Precedent Example:** The California Coastal Commission suggests mitigation ratios greater than 1. e.g. 4 acres of land must be conserved for every 1 acre of development

Implementation & Legality



What are the legal requirements of a VMT Bank? Who is required to demonstrate its legitimacy and efficacy?

- **Wildlife Conservation Bank:** Structure puts the onus on the bank manager to demonstrate efficacy and manage the land. Developers are simply required to purchase credits.
- **Mitigation Fee Act:** VMT Banks are likely outside the purview of the Mitigation Fee Act, but there is still a need to demonstrate additionality and provide verification of efficacy.

Implementation & Legality



What is the right structure for implementation?

- **“Permit to Emit”**: Cap-and-Trade allocates allowances for emissions. For every ton of emissions after that allowance, a “permit to emit” must be provided, either through off-set credits or trade.
- **Mitigation Ratios**: Wildlife conservation banks utilize 1:1 mitigation ratios for every square foot developed, with some areas (such as CCC) suggesting higher ratios.
- **Per Housing Unit/KSF**: Transportation fee programs typically apply their fees per housing unit or per KSF.

Geography & Scale



What is the right geographic scale for a VMT Mitigation Bank (e.g. state, regional, local)?

- **County of San Diego:** Court case triggered a conversation about the geographic distribution of carbon offsets to meet GHG reduction goals for suburban development.
- **City of LA's Park Fee:** This locally focused fee program requires fees to be used to construct parks within two to 10 miles (depending on park type) of the development site.

Geography & Scale



How do we ensure an equitable distribution of responsibility for VMT reduction?

- **Regional Housing Needs Allocation (RHNA):** Because housing requirements are allocated at a countywide level, there is a disproportionate burden on cities who are willing to build affordable housing. The impact of this in Los Angeles County is that 30 of 88 cities have never constructed Low Income Housing Tax Credit units.

Duration



*How long are VMT Banks required to offset VMT? What is the compliance period?
What about the pilot program?*

- **Mitigated in Perpetuity:** Both Cap-and-Trade and wildlife conservation banks function in perpetuity. Cap-and-Trade is ongoing with a two-year compliance period and wildlife conservation banks require conservation easements and long-term management plans.
- **Pilot Project Lessons Learned:** Takeaways from pilot project case studies include a suggested 1-year minimum program to allow time for marketing, awareness, and ongoing data collection and analysis.

Monitoring



What level of monitoring is appropriate for VMT Bank administration?

- **Heavy Monitoring:** Wildlife conservation banks and Cap-and-Trade are both built on a foundation of heavy data collection and monitoring, demonstrating the importance of monitoring in the long-term success of mitigation.
- **Limited Monitoring:** RHNA provides an example of the risks of poor monitoring. Cities are only required to demonstrate that they have space to accommodate their housing units, not that the units are actually developed. This loophole is frequently taken advantage of by cities who do not want to build additional housing.

Monitoring



How should the pilot program be monitored?

- **Lessons Learned from Pilot Programs:** Case studies highlight the need to identify evaluation criteria early on to ensure that the right data is collected to evaluate the success of the pilot

Category	Document	Publisher, Author	Year	Relevance
Academic	VMT Mitigation Through Fees, Banks, & Exchanges	Western Riverside Council of Governments, Fehr & Peers	2020	Reviews the validation of VMT Banks as VMT mitigation for CEQA
Academic	Maximizing the Ecological Contribution of Conservation Banks	Wildlife Society Bulletin, David A. Bunn, Peter B. Moyle, Christine K. Johnson	2014	Analyzes the efficacy of conservation banks
Academic	A Flawed Law: Reforming California's Housing Element	UCLA, Paavo Monkkonen, Michael Manville, Spike Friedman	2019	Provides helpful lessons-learned on potential inequities in geographic distribution through the lens of RHNA housing allocations
Academic	Implementing SB 743: An Analysis of Vehicle Miles Traveled Banking and Exchange Frameworks	UC Berkeley, Ethan N. Elkind, Ted Lamm, and Eric Prather	2018	Presents insights on implementation of VMT mitigation programs
Pilot Project	Perfecting Policy with Pilots: New Mobility and AV Urban Delivery	Urbanism Next, New Urban Mobility Alliance	2020	Presents a framework and considerations for implementing a pilot project
Pilot Project	Go Centennial Final Report	Centennial Innovation Team, Fehr & Peers	2017	Provides lessons-learned on a transportation pilot project
Precedent	Conservation and Mitigation Banking Guidelines	California Department of Fish & Wildlife	2019	Presents guidelines for establishing a conservation or mitigation bank
Precedent	Transportation Impact Review Guidelines	City of Oakland	2019	Includes transit subsidies as a required/suggested TDM strategy
Precedent	Transportation Demand Management Strategies in LA VMT Calculator	City of Los Angeles	2018	Includes transit subsidies as a TDM strategy
Procedural	An Overview of Mitigation Processes and Procedures	California Coastal Commission		Presents a framework for developing mitigation requirements
Procedural	Cap-and-Trade Regulation Instructional Guidance	California Air Resources Board	2012	Provides an example framework for implementation.
Procedural	Mitigation Fee Act	California Government Code Section 66000	1987	Provides legislative guidance on the application of mitigation fees
Procedural	TIA Fee Program Study Report	City of Los Angeles	2015	Summarizes the nexus for the first transportation fee program to include VMT in the fee schedule
Procedural	City Of Los Angeles Ordinance 184505: LA Park Fees	City of Los Angeles	2016	Provides a precedent for individual agencies collecting and managing fees