TECHNICAL MEMORANDUM

TO: Julio Perucho, Metro
FROM: Rich Walter, ICF
CC: Brian Calvert, ICF; Chelsea Richer, Fehr & Peers
DATE: August 30, 2023

RE: Vehicle Miles Traveled (VMT) Mitigation Program: Evaluation Criteria Memo

Executive Summary

This memorandum describes the draft eligibility criteria and evaluation criteria under consideration for evaluation and ranking of VMT mitigation strategies for use in a VMT Mitigation Program. **Eligibility criteria** are limited to VMT reduction effectiveness and evidentiary support and are proposed to be evaluated on a pass/fail basis only. **Evaluation criteria** were developed by the consultant team to provide a way to rank the most favorable VMT mitigation strategies by scoring each strategy on a 3 point scale for each evaluation criterion. The team provided a draft unweighted score for the candidate mitigation strategies. The team reached out to the VMT Mitigation Program stakeholder group during a stakeholder meeting and following the meeting to get their input on the evaluation criteria. Stakeholders provided input on the more important and less important evaluation criteria in their view, suggested several additional potential evaluation criteria (such as less embodied carbon or improved travel time), and also suggested several additional VMT mitigation strategies. The consultant team devised a potential weighting scheme using the stakeholder input to weight different criteria. Finally, the memo identifies the next steps needed to finalize the VMT mitigation strategies, eligibility criteria, evaluation criteria, evaluation rating and weighting so as to support Los Angeles (LA) Metro (Metro) in the final ranking and selection of priority VMT mitigation strategies for use in a recommended VMT Mitigation Program framework (Tasks 7 and 8).

The three highest unweighted strategies are:

- Increase Transit Service Frequency
- Extend Transit Network Coverage or Hours
- Implement Commute Trip Reduction Program (Voluntary)
  (TDM programs that are workplace-based in partnership with municipalities/TMOs/employers)

The three highest weighted strategies are the same as the three highest unweighted strategies. If one compares the unweighted and weighted scores in the evaluation, the relative ranking is actually quite similar. The highest ranked strategies remained highly ranked and the lower ranked strategies remained lower ranked. There were some differences in the rankings with the influence of weighting, but the maximum shift in ranking between unweighted and weighted was only 4 ranks up or down with many changes of 2 or less ranks. If one wanted to see a greater influence of the stakeholder votes, a more aggressive approach would need to be applied to the weighting.

As this memo is organized differently than the topics listed in the consultant scope (which were developed before discussions with Metro staff), a cross-reference is provided below for the different criteria:

- CEQA compliance and legal regulations: This is discussed below under "Eligibility Criteria" in terms of whether a VMT mitigation strategy is effective at reducing VMT, is enforceable, and that there is substantial evidence to show that it would be effective.
- Cost effectiveness and affordability: This is discussed below with the criterion of "Cost Effectiveness"
- Geographic fit and scale: This topic is discussed below with the criteria "Affected by VMT/Pollution Burden" and "Scalability"
- Metro agency priorities & oversight: This topic is discussed below under the criteria "Metro Direct Enforceability", "Expansion of Existing Programs", "Able to be Incorporated into Project", "Speed of Delivery" and "Prioritization of Capital Projects"
- Equity: This topic is addressed through the criteria "Benefits to EFCs/Low-Income Populations" and "Affected by VMT/Pollution Burden"

1. Eligibility Criteria

All VMT mitigation strategies must meet the CEQA mitigation requirements in that they need to be effective and enforceable, and supported by substantial evidence. Eligibility criteria were applied to the initial list of VMT Mitigation Strategies on a pass/fail basis. Only those determined to have a medium to high degree of confidence in terms of effectiveness and enforceability and to have evidentiary support were carried forward for further evaluation.

1.1 Effective and Enforceable

Fehr & Peers reviewed a myriad of different VMT mitigation strategies and identified whether these strategies are effective at reducing VMT and whether their implementation is enforceable. VMT mitigation strategies with a low degree of confidence in reducing VMT were eliminated from further consideration. The project team reviewed the CAPCOA 2021 *Handbook for Analyzing Greenhouse Gas Emissions Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (CAPCOA 2021) to determine which strategies could be advanced based on their effectiveness and enforceability. Many strategies would include Metro as a partner but lack full enforceability by the agency that would be necessary to deploy the strategy as a mitigation measure. Strategies that were eliminated at this stage due to lack of Metro enforceability include:

- Changes to land use such as increased residential and employment density, destination accessibility, and transit-oriented development (with the exception of Metro-owned parcels through the Joint Development program, which have advanced for further consideration as a mitigation strategy)
- Improvements to street connectivity, on-street bike facilities, or pedestrian network
- Implementation of a mandatory commute trip reduction program
- Implementation of parking pricing, changes to residential or commercial parking supply, and changes to on-street parking policies
- Implementation of carshare programs (conventional or electric)

1.2 Evidentiary Basis

In order to qualify as CEQA mitigation, VMT mitigation strategies must have substantial evidence to support their effectiveness. Evidentiary support for the strategies advanced for further evaluation was found in CAPCOA

2021, the Caltrans SB743 Program *VMT Mitigation Playbook* (Caltrans 2022), evidence from the South Bay Cities Council of Governments (SBCOG) Local Travel Network and Neighborhood Electric Vehicle studies, and evidence from an e-bike voucher program in Denver, Colorado.

2. Evaluation Criteria

A series of potential evaluation criteria were identified to allow Metro staff to prioritize different VMT mitigation strategies on a range of cost, speed, implementation, and equity criteria as discussed below. As explained in Section 3 below, a workshop was held with key stakeholders regarding the candidate evaluation criteria, which was modified in response to stakeholder input. Weighting is discussed in Sections 3 and 4 below.

2.1 Metro Direct Enforceability

This criterion identifies the degree to which a VMT mitigation strategy is directly enforced by Metro. Some strategies can be directly implemented and enforced by Metro, whereas others require partnership with other agencies or organizations, and some are entirely implemented by others. A higher score was identified for mitigation actions directly implemented and enforced by Metro given the lesser complexity in implementation.

2.2 Expansion of Existing Programs

This criterion is used to evaluate the degree to which a VMT mitigation strategy is an expansion of existing Metro programs. Strategies that consist of expansion of existing programs have a lower implementation cost and complexity and higher confidence in success than those that are new programs. Existing programs may also have a lower startup cost, where administrative/organizational infrastructure already exists. The VMT Mitigation Program will need to coordinate closely with existing program implementers to understand their interest and ability to scale with additional funding unlocked through the Mitigation Program.

2.3 Cost Effectiveness

This criterion is used to evaluate the cost-effectiveness of the VMT mitigation strategies. While all of the strategies that pass the eligibility criteria are effective in reducing VMT, the strategies vary substantially in terms of their cost-effectiveness in reducing VMT. Strategies that have relatively higher cost-effectiveness (e.g., lower $/VMT reduced) are ranked higher than those with lower cost-effectiveness.

2.4 Scalability

This criterion is used to evaluate the ease with which a strategy can be scaled up. As there are varying needs for VMT mitigation over time, highly scalable strategies offer greater flexibility in implementation than strategies that have limited ability for expansion.

2.5 Can be Incorporated into Project

This criterion is used to evaluate the ease with which a strategy could be incorporated into Metro's portfolio of State Highway System (SHS) projects. A strategy that can be incorporated into a project with ease increases the opportunities for implementation and efficiency by avoiding separate implementation effort, cost, and time.

2.6 Speed of Delivery Timeframe

This criterion is used to evaluate the time necessary to implement the strategy. Some strategies can be readily implemented in the short-term if they have limited capital requirements, less need or complexity in establishing partnerships, or have other logistical steps necessary to launch the strategy. Strategies with higher speed to implementation are ranked higher than those with greater timeframes to launch.

2.7 Prioritization of Capital Projects

This criterion is used to evaluate the degree to which the strategy requires capital improvements. Strategies that

are a capital investment are ranked higher than those with only some capital improvements and those that are not a capital project. As explained below, stakeholders recommend the elimination of this criterion.

2.8 Benefits to EFCs/Low-Income Populations

This criterion is used to evaluate the degree to which the strategy would provide benefits to Equity Focus Communities (EFCs)/Low-Income Populations. Some strategies provide financial benefits, improved access, opportunities for affordable housing or VMT reduction within EFCs/Low-Income populations. While most strategies could be narrowly implemented in EFCs, some strategies provide more inherent benefits to EFC residents or low-income populations regardless of where they are implemented, such as transit service improvements given the population characteristics of current riders. Strategies with greater potential benefits to EFCs/Low-Income populations were ranked higher than those with lesser or not potential benefits.

2.9 Benefits to Populations Affected by VMT/Pollution Burdens

This criterion is used to evaluate the degree to which the strategy could benefit populations affected by VMT including populations with pollution burdens due to VMT. Strategies with greater potential benefits in reducing VMT-affected populations or those with pollution burdens due to VMT are ranked higher than those with less potential.

3. Stakeholder Input

Draft evaluation criteria were developed with feedback from the Policy Working Group. Input on evaluation criteria was solicited during PWG Meeting #3, convened on September 12, 2023, and PWG #4, convened on January 17, 2023. The project team presented information on the VMT patterns across the County related to EFC designation, and presented ideas for mitigation actions that could equitably meet the goals of the program while delivering benefits to EFCs. The key points of input that were offered, which helped to inform the development of the nine above evaluation criteria, include:

- Consider a broad definition of equity that does not purely focus on EFCs but also considers other kinds of equity criteria (such as exposure to negative impacts of VMT, and potential for EFC residents to benefit from the mitigation action even if it is not located in an EFC)
- Mitigation actions should be context-sensitive; not all strategies will work in all places, so the evaluation criteria should be broad and flexible enough to recognize that reality
- Consider building on active transportation and mobility hub efforts already underway
- Consider technology solutions like broadband
- Mitigation action implementation and the mitigation framework should not further burden low-income travelers, even if they have high VMT; they are already burdened through cost and time penalty

The draft VMT evaluation criteria were provided to the VMT Mitigation Program stakeholder group for review during and following Stakeholder Meeting #2, held on June 13, 2023. Attendees at the stakeholder meeting and providing input afterward via a Menti poll included Caltrans, LA County Public Works, representatives of various cities, and non-governmental organizations. Stakeholders provided input on the degree of importance of the different criteria and also suggested a number of additional criteria.

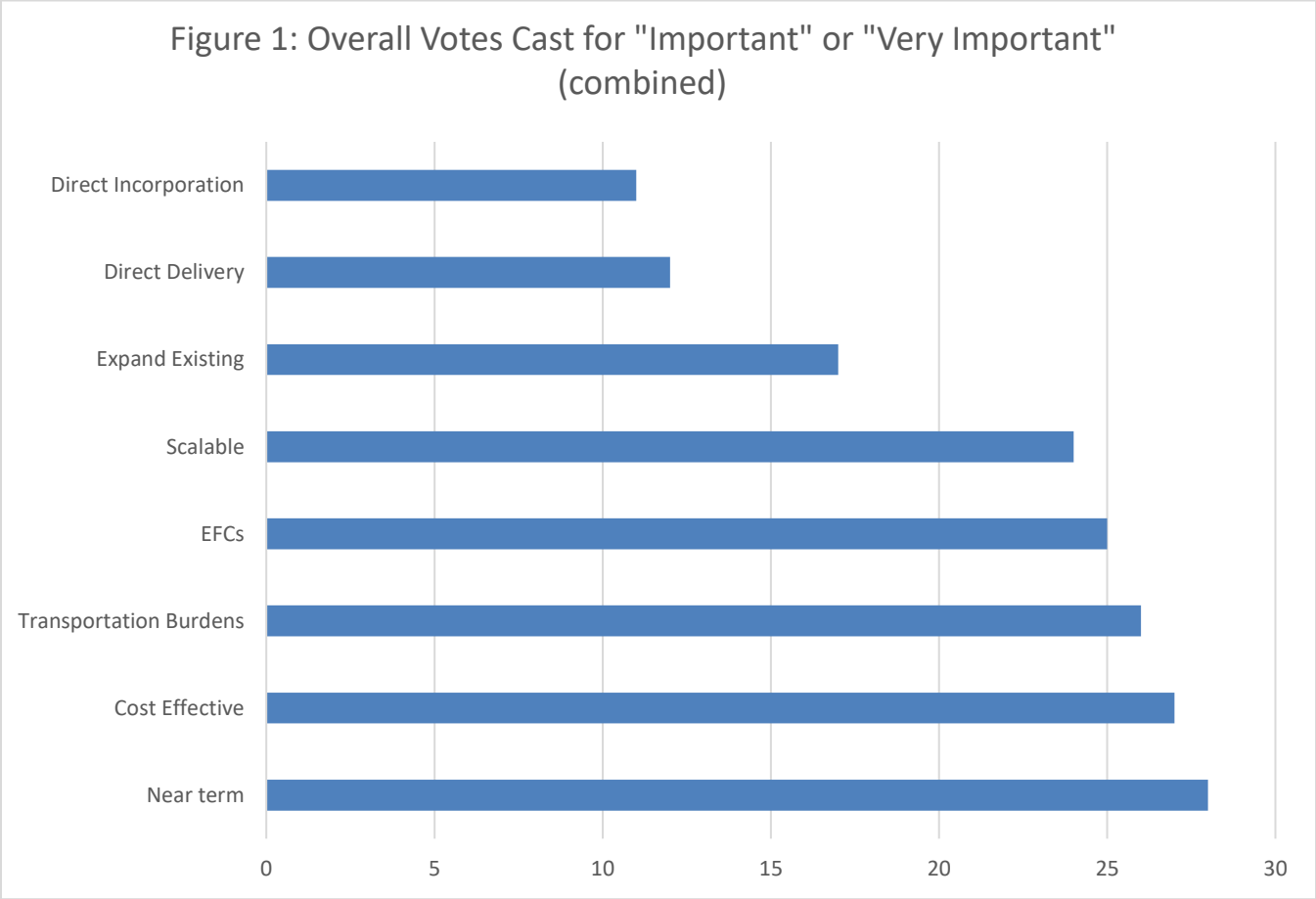
Table 1 shows the ranking of different criteria provided during the stakeholder meeting. The second line shows the ranking if “Not Important” and “Unimportant” are combined and “Important” and “Very Important” are combined.

Table 1: Feedback Gathered During Stakeholder Meeting on Evaluation Criteria					
	Not Important	Unimportant	Neutral	Important	Very Important
	1	2	3	4	5
Cost Effective	1	0	9	9	6
(Combined)		1	9	15	
Near term	1	3	2	13	3
(Combined)		4	2	16	
Direct delivery	6	6	3	8	0
(Combined)		12	3	8	
Expand existing	1	3	10	9	1
(Combined)		4	10	10	
Direct incorporation	5	4	6	4	2
(Combined)		9	6	6	
Scalable	0	6	4	7	5
(Combined)		6	4	12	
EFCs	0	6	2	7	6
(Combined)		6	2	13	
Transportation burdens	1	2	1	4	10
(Combined)		3	1	14	

Table 2 shows the ranking of different criteria provided following the stakeholder meeting. The second line shows the ranking if “Not Important” and “Unimportant” are combined and “Important” and “Very Important” are combined.

Table 2: Feedback Gathered After Stakeholder Meeting					
	Not important	Unimportant	Neutral	Important	Very Important
	1	2	3	4	5
Cost Effective	0	1	2	8	4
(Combined)		1	2	12	
Near term	2	0	1	7	5
(Combined)		2	1	12	
Direct delivery	4	0	7	2	2
(Combined)		4	7	4	
Expand existing	2	0	6	5	2
(Combined)		2	6	7	
Direct incorporation	2	3	5	3	2
(Combined)		5	5	5	
Scalable	0	1	2	6	6
(Combined)		1	2	12	
EFCs	1	1	1	5	7
(Combined)		2	1	12	
Transportation burdens	0	1	2	4	8
(Combined)		1	2	12	

When combining the feedback during the stakeholder meeting with the feedback from after the meeting, the overall votes case for “Important” or “Very Important” are shown in Figure 1 below.



Stakeholders were separately asked about their priorities related to operational, programmatic, or capital improvement strategies. Stakeholders prioritized operational strategies over capital strategies, which suggests the criterion related to the prioritization of capital projects could be removed.

Stakeholders also suggested other criteria that could be used for evaluation of VMT Mitigation strategies including the following:

- Projects that have less embodied carbon (require steel, concrete, fuel to implement)
- Overall magnitude of VMT that can be reduced
- Carbon-free programs
- Improve speed/travel time competitiveness with driving
- Improve first and last mile (FLM) clarity and connections
- Improve flexibility and reliability

While these criteria are not currently included in the evaluation criteria discussed in Section 4 below, if Metro were to desire to add one or more of these criteria to the evaluation set, that could be done. Following further team discussion, these above criteria will be considered in the formalization of the final recommended Program Framework.

In response to the suggestion for carbon-free programs, and given the ambivalence about capital projects as a prioritized category of mitigation actions, the team will remove from further consideration the evaluation criteria that gives preference to capital projects. Additional detail and analysis about the degree to which carbon emissions are "embodied" in mitigation actions is beyond the scope of this effort. However, the general principle that actions requiring less (or no) additional steel and concrete have less "embodied carbon" would provide a counterbalance to the idea of prioritizing capital projects that require use of physical resources such as steel and concrete. Therefore, simply removing the criteria that would prioritize capital projects will have the effect of amplifying programmatic and operational mitigation actions, which have less embodied carbon.

Note, during Stakeholder Meeting #1, convened on May 16, 2023, stakeholders also suggested several other VMT mitigation strategies not included in the current candidate list:

- Shared Mobility
- Vanpools
- Fareless Transit Initiative

These strategies currently exist as component parts of other mitigation strategies that are under consideration. Shared Mobility is included via Metro Micro and Metro Bikeshare (e-bike and conventional bike) programs, Vanpools are included via Commute Trip Reduction Programs, and Fareless Transit Initiative is included under Implement Subsidized or Discounted Transit Program. When refining the specific mitigation strategies that would be included in the recommended VMT Mitigation Program, the project team will work with Metro to identify specific implementation pathways for each mitigation strategy including more specificity around the particular strategies that would receive funding through participation in the VMT Mitigation Program.

4. Evaluation Criteria Matrix Options

The identified criteria in the matrix in Section 2 could be used as is, without weighting. Table 4 shows an unweighted ranking with evaluation of how the different VMT Mitigation strategies perform on the different criteria under the "Unweighted Score" column. Mitigation actions were scored "high," "medium," or "low," depending on their alignment with the stated criteria, based on the team's best understanding of how a mitigation action would be implemented and how well-aligned that approach would be with each evaluation criterion. "High" corresponds to three points, "medium" to two points, and "low" to one point. The points are then summed for each action, across all draft evaluation criteria. This "unweighted" scoring approach results in each mitigation action being assigned a total point value based on the degree to which it meets the draft evaluation criteria.

Alternatively, weighting could be applied. One way to do that would be to use the stakeholder input described in Section 3. The stakeholder input can be used to develop a potential relative weighting of the different evaluation criteria. The strategies with more votes as "Important" or "Very Important" were weighted higher than those with less votes. The weighting was derived by assigning a 1.0 value to the strategy with the least number of "Important" or "Very Important" votes (Direct Incorporation) and then multiplying the number of votes a strategy received divided by the number of votes for Direct Incorporation (11). Thus, the strategies with more votes would have a higher multiplier. As discussed above, stakeholders prioritized operational strategies over capital projects, and thus one could consider deleting the criterion "Prioritization of Capital Projects" altogether. Table 4 shows application of weighting using stakeholder votes and deletion of the criterion for "Prioritization of Capital Projects" under the "Weighted Score" column.

If one compares the unweighted and weighted scores in Table 4, the relative ranking is actually quite similar. The three highest unweighted strategies are:

- Increase Transit Service Frequency
- Extend Transit Network Coverage or Hours
- Implement Commute Trip Reduction Program (Voluntary)
  (TDM programs that are workplace-based in partnership with municipalities/TMOs/employers)

The three highest weighted strategies are the same as the three highest unweighted strategies. The highest ranked strategies remained highly ranked and the lower ranked strategies remained lower ranked. There were some differences in the rankings with the influence of weighting, but the maximum shift in ranking between unweighted and weighted was only 4 ranks up or down with many changes of 2 or less ranks. The strategies that changed their ranking the most when moving from unweighted to weighted are these:

- Metro Joint Development - High density, affordable housing on Metro owned parcels Extend Transit Network Coverage or Hours: Moved from unweighted rank of 6 to weighted rank of 10.
- Community Based Travel Program (TDM programs that are residence/neighborhood based in partnership with municipalities/TMOs/developers): Moved from unweighted rank of 10 to weighted rank of 7.
- Provide Bus Rapid Transit: Moved from unweighted rank of 10 to weighted rank of 13.
- Expand Metro Micro: Moved from unweighted rank of 13 to weighted rank of 10.

If one wanted to see a greater influence of the stakeholder votes, a more aggressive approach would need to be applied to the weighting. Stakeholder weighting is only one example of potential weighting schemes that could be applied to the evaluation criteria. Weighting is challenging without subjectivity. Stakeholders are also expressing their subjective view. If weighting is used, it is recommended that both the unweighted and weighted results be presented for consideration in developing the recommended VMT Mitigation Program. Alternatively, no weighting need be applied, and project teams can evaluate their mitigation priorities project-by-project (in the event of a VMT Exchange as the selected program framework). If a VMT Bank were to be selected, the Bank Administrator would likely need some approach to prioritizing which mitigation actions are funded first; rather than weighting/prioritization, a “readiness” approach could be used to assess mitigation action readiness at the point that sufficient funds are collected through the Bank.

5. Next Steps

In order to finalize the evaluation and ranking of the VMT Mitigation Strategies (if they are in fact to be ranked), Metro needs to provide direction on the following elements:

- Mitigation Strategies – Should any additional mitigation strategies be included in the evaluation or separated out as unique line items, such as those suggested by stakeholders?
- Eligibility Criteria – Are there any changes in the eligibility criteria and should the evaluation continue to be pass/fail?
- Evaluation Criteria – Are there any changes in the evaluation criteria? Should one or more of the Stakeholder recommended criteria be added? Should the stakeholder input result in removal of the “Prioritization of Capital Projects” criterion?
- Evaluation Rating - Are there any recommended changes in the scoring of the criteria?
- Weighting – Should the evaluation criteria be weighted? If so, should the voting of the stakeholders be used as the basis of weighting? Are there alternative weighting schemes that should be explored?

- Elaboration of Mitigation Strategies – Which Metro departments are ready to implement unfunded projects if funding were to become available? What are the units of implementation that would be most suited for this program, and what would comprise the "minimum viable product" for implementation that would meet evaluation criteria more directly? For example, could transit signal priority (TSP) improvements be implemented quicker and at a lower cost than full BRT lanes and confirm VMT reduction benefits?

With direction resolved on the above, the consultant team will develop a Final set of Evaluation Criteria and Evaluation of the VMT mitigation strategies, to be included in the development of the VMT Mitigation Program in Task 8.

Table 4: Eligibility and Evaluation Criteria for the VMT Mitigation Program and Draft Evaluation

VMT Mitigation Strategy	Effective and Enforceable?	Evidentiary Basis	Metro Direct Enforceability	Expansion of Existing Programs	Cost Effectiveness	Scalability	Can be Incorporated into Project	Speed of Delivery Timeframe	Prioritization of Capital Projects	Benefits to EFCs/ Low-Income Populations	Benefits to Populations Affected by VMT/Pollution Burdens	Unweighted Score	Weighted Score	Unweighted Rank	Weighted Rank
Transit Service & Infrastructure Expansion															
Provide Bus Rapid Transit	High degree of confidence	T-28 CAPCOA 2021; Caltrans Playbook; Cal-B/C Sketch	Low. Requires partnership with local municipality.	High. BRT is an existing service pattern for Metro. Pipeline of future BRT corridors in planning.	Medium. Mixed VMT reduction effects depending on project details.	Medium. Capital-intensive, but increasing returns on expansion of high-quality transit service.	Medium. Could be deployed alongside Metro highway projects, as improvements to transit service on parallel corridors or as median/HOV/HOT bus lanes.	Low. Extensive outreach, planning, and design required. Partnership with multiple agencies required for ROW construction.	High. Bus Rapid Transit requires capital improvements.	Medium. Improved transit service has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved transit service has inherent benefits for transit-dependent populations and vulnerable roadway users in addition to any VMT reduction benefits. Benefits to communities affected by roadway pollution accrue in the vicinity of project.	**19**	**31**	**10**	**13**
			1	3	2	2	2	1	3	2	3				
Increase Transit Service Frequency	High degree of confidence	T-26 CAPCOA 2021; Caltrans Playbook; Cal-B/C Sketch	High. Metro is the local transit operator.	High. Metro is the local transit operator.	High. Increasing returns on expansion of high-quality transit service with no new capital investments.	High. Increasing returns on expansion of high-quality transit service.	Medium. Could be deployed alongside Metro highway projects, as improvements to transit service on parallel corridors.	High. Not capital-intensive. Operating equipment and labor required.	Low. Not a capital project.	Medium. Improved transit service has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved transit service has inherent benefits for transit-dependent populations and vulnerable roadway users in addition to any VMT reduction benefits. Benefits to communities affected by roadway pollution accrue in vicinity of project.	**23**	**43**	**1**	**1**
			3	3	3	3	2	3	1	2	3				
Extend Transit Network Coverage or Hours	High degree of confidence	T-25 CAPCOA 2021; Caltrans Playbook	High. Metro is the local transit operator.	High. Metro is the local transit operator.	Medium. Increasing returns on expansion of high-quality transit service but diminishing returns on expansion of transit network coverage beyond core region or expansion of hours beyond daytime hours.	Medium. Increasing returns on expansion of high-quality transit service but diminishing returns on expansion of transit network coverage beyond core region or expansion of hours beyond daytime hours.	Medium. Could be deployed alongside Metro highway projects, as improvements to transit service on parallel corridors.	High. Not capital-intensive. Operating equipment and labor required.	Low. Not a capital project.	High. Inherent equity benefits of improved transit coverage to EFC and low-income populations.	High. Improved transit service has inherent benefits for transit-dependent populations and vulnerable roadway users in addition to any VMT reduction benefits. Benefits to communities affected by roadway pollution accrue in vicinity of project.	**22**	**41**	**2**	**2**
			3	3	2	2	2	3	1	3	3				
Expand Metro Micro	High degree of confidence	T-25 CAPCOA 2021; Caltrans Playbook; MetroMicro Data	Medium. Curbspace management requires partnership with local municipality.	High. Metro Micro is an existing service by Metro.	Low. Low ridership and low farebox recovery ratio.	Medium. Not capital-intensive, but diminishing returns on effectiveness of geographic expansion of Metro Micro service.	Medium. Possible to deploy in communities impacted by Metro highway projects, provided there is existing transit service on parallel corridors or nearby, for which improved first/last-mile access would reduce VMT.	High. Not capital-intensive. Operating equipment and labor required.	Low. Not a capital project.	Medium. Improved first-mile/last-mile service has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	Medium. Improved first-mile/last-mile access has inherent benefits for transit-dependent populations and vulnerable roadway users in addition to any VMT reduction benefits. Benefits to populations affected by VMT and pollution burdens depend on project location.	**18**	**33**	**13**	**10**
			2	3	1	2	2	3	1	2	2				
Metrolink Service Expansion	High degree of confidence	T-25/T-26 CAPCOA 2021; Caltrans Playbook; Cal-B/C Sketch	Medium. Enforceable through close partnership. May require agreements with host private railroads.	High. Metrolink runs existing transit services with potential for expansion in frequency or coverage.	Medium. Increasing returns on expansion of high-quality transit service but diminishing returns on expansion of transit network coverage beyond core region or expansion of hours beyond daytime hours.	Medium. Increasing returns on expansion of high-quality transit service but diminishing returns on expansion of transit network coverage beyond core region or expansion of hours beyond daytime hours.	Medium. Could be deployed alongside Metro highway projects, as improvements to transit service on parallel corridors.	Medium. May be capital-intensive. May require agreements with host private railroads. Operating equipment and labor required.	Medium. May require some capital investments.	Medium. Improved transit service has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved transit service has inherent benefits for transit-dependent populations and vulnerable roadway users in addition to any VMT reduction benefits. Benefits to communities affected by roadway pollution accrue in the vicinity of project.	**20**	**35**	**6**	**6**
			2	3	2	2	2	2	2	2	3				
Fare Programs & TDM															
Implement Subsidized or Discounted Transit Program	High degree of confidence	T-9-A/B CAPCOA 2021; Caltrans Playbook	Medium. Metro is the local transit operator, but partnership may be required to deliver transit pass program to end users (e.g., a condition of development; partnership with school districts).	High. Metro is the local transit operator and Metro Employer Pass Program (E-Pass) and Metro Small Employer Pass Program (SEP) are existing programs by Metro; as well as UPass; GoPass; LIFE.	Medium. Mixed VMT reduction effects depending on project details and deployment levels.	High. Not capital intensive. Farebox recovery considerations for fare reduction.	Medium. Possible to deploy in communities impacted by Metro highway projects, provided there is existing transit service on parallel corridors or nearby, for which transit pass program deployment would reduce VMT.	Medium. Not capital-intensive, but partnership required to make transit program a condition of development beyond those on Metro property.	Low. Not a capital project.	High. Inherent equity benefits of fare discounts to EFC and low-income populations.	High. Inherent benefits of fare discounts to transit-dependent populations and vulnerable roadway users.	**21**	**39**	**4**	**4**
			2	3	2	3	2	2	1	3	3				

Table 4: Eligibility and Evaluation Criteria for the VMT Mitigation Program and Draft Evaluation

VMT Mitigation Strategy	Effective and Enforceable?	Evidentiary Basis	Metro Direct Enforceability	Expansion of Existing Programs	Cost Effectiveness	Scalability	Can be Incorporated into Project	Speed of Delivery Timeframe	Prioritization of Capital Projects	Benefits to EFCs/ Low-Income Populations	Benefits to Populations Affected by VMT/Pollution Burdens	Unweighted Score	Weighted Score	Unweighted Rank	Weighted Rank
Implement Commute Trip Reduction Program (Voluntary) (TDM programs that are workplace-based in partnership with municipalities/TMOs /employers)	High degree of confidence	T-5 CAPCOA 2021; Caltrans Playbook	Medium. Effectiveness would benefit from partnership with local municipalities/other entities.	High. Metro Employer Pass Program (E-Pass) and Metro Small Employer Pass Program (SEP) are existing programs by Metro; TDM programs (including Vanpool) are existing Metro offerings.	Medium. Mixed VMT reduction effects depending on project details and deployment levels.	High. Not capital-intensive. Strong economic incentives for employer participants.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	High. Not capital-intensive. Expansion of existing program.	Low. Not a capital project.	Medium. Offers economic benefits to transit-dependent commuter populations.	High. Inherent economic benefits to transit-dependent populations and vulnerable roadway users.	22	41	2	3
			2	3	2	3	3	3	1	2	3				
Community Based Travel Program (TDM programs that are residence/neighborhood based in partnership with municipalities/TMOs /developers)	High degree of confidence	T-23 CAPCOA 2021; Caltrans Playbook	Medium. Effectiveness would benefit from partnership with local municipalities/other entities.	Medium. Limited existing model for Metro partnering with residential communities. May involve expansion of TOC program along with additional marketing strategies.	Medium. May not offer economic incentive for VMT reduction. Requires investment of staff resources for outreach, planning, and monitoring. Effectiveness would vary by geography.	Medium. Not capital-intensive, but requires investment of staff resources for outreach, planning, and monitoring.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	Medium. Not capital-intensive, but partnership required for effective implementation, and staff time required for outreach, planning, and monitoring.	Low. Not a capital project.	Medium. Improved access has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved access has inherent benefits for transit-dependent populations and vulnerable roadway users. Effectiveness would vary by geography.	19	34	10	7
			2	2	2	2	3	2	1	2	3				
Implement Commute Trip Reduction Marketing (TDM marketing activities)	High degree of confidence	T-7 CAPCOA 2021; Caltrans Playbook	High. Metro is the local transit operator with existing marketing practices. Effectiveness would benefit from partnership with local municipalities/other entities.	High. Metro has existing marketing strategies for its E-Pass and SEP programs, as well as marketing for transit services.	Medium. May not offer economic incentive for VMT reduction. Requires investment of staff resources for outreach, planning, and monitoring. Effectiveness would vary by geography.	Medium. Not capital-intensive, but requires investment of staff resources for outreach, planning, and monitoring.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	High. Not capital-intensive.	Low. Not a capital project.	Low. Does not offer economic incentive for VMT reduction or improve regionwide access.	Low. Does not offer economic incentive for VMT reduction or improve regionwide access.	19	32	10	12
			3	3	2	2	3	3	1	1	1				
Active Transportation Strategies															
E-Bike Subsidies	Medium/high degree of confidence	Denver study	High, if Metro were to start a program for this purpose.	Low. Program does not yet exist.	Medium. Lower cost program, but likelier to target shorter trips.	High. Not capital intensive.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	High. Not capital intensive.	Low. Not a capital project.	Medium. Offers direct financial benefit, but not exclusively to EFCs.	High. Offers direct financial benefits for a low-cost travel mode.	21	39	4	5
			3	1	2	3	3	3	1	2	3				
Implement Electric Bikeshare Program	High degree of confidence	T-22-B CAPCOA 2021; Caltrans Playbook; Cal-B/C Active Transportation; CARB	Medium. Curbspace management and siting requires partnership with local municipality, even for dockless bikeshare system.	High. Metro Bike Share is an existing service by Metro.	Low. Benefits mostly short-distance trips, thus low VMT impact. Effectiveness dependent on quality of regional bike network. Somewhat higher effectiveness than pedal bikeshare program.	Medium. May require some capital investments. Diminishing returns on effectiveness from geographic expansion.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	Medium. May require minor capital investments and partnership with local municipalities. Operating equipment required.	Medium. May require some capital investments.	Medium. Improved first-mile/last-mile access has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved first-mile/last-mile access has inherent benefits for transit-dependent populations and vulnerable roadway users. Effectiveness dependent on quality of regional bike network.	20	33	6	8
			2	3	1	2	3	2	2	2	3				
Implement Pedal (Non-Electric) Bikeshare Program	High degree of confidence	T-22-A CAPCOA 2021; Caltrans Playbook; Cal-B/C Active Transportation; CARB	Medium. Curbspace management and siting requires partnership with local municipality, even for dockless bikeshare system.	High. Metro Bike Share is an existing service by Metro.	Low. Benefits mostly short-distance trips, thus low VMT impact. Effectiveness dependent on quality of regional bike network.	Medium. May require some capital investments. Diminishing returns on effectiveness from geographic expansion.	High. Could be deployed in neighborhoods affected by impacts associated with Metro highway projects.	Medium. May require minor capital investments and partnership with local municipalities. Operating equipment required.	Medium. May require some capital investments.	Medium. Improved first-mile/last-mile access has inherent benefits for transit-dependent populations. Benefits to EFCs depend on project location.	High. Improved first-mile/last-mile access has inherent benefits for transit-dependent populations and vulnerable roadway users. Effectiveness dependent on quality of regional bike network.	20	33	6	8
			2	3	1	2	3	2	2	2	3				
Land Use Programs															
Metro Joint Development - High density, affordable housing on Metro owned parcels	High degree of confidence	T-4 CAPCOA 2021; Caltrans Playbook	High. Metro is the property owner.	High. Metro Joint Development is an existing program by Metro.	High. Substantial VMT reduction for project occupants. Revenues from long-term lease to developer and higher local transit ridership provide some ROI.	Low. Limited sites available for development and long procurement timelines.	Low. Difficult to program or to geographically site as part of Metro highway projects.	Low. Long procurement timeline for development.	High. Development is a capital investment.	High. Opportunities for creating affordable housing and for improving transit access to low-income tenants.	Medium. Improves future tenants' access to transit.	20	33	6	10
			3	3	3	1	1	1	3	3	2				
Roadway Network Projects															
South Bay Cities COG Local Travel Network Implementation	Medium degree of confidence (depends on implementation extent)	SBCCOG study	Low. Metro is not the implementing agency.	Medium. Elements are currently being piloted in El Segundo.	Low. Targets short-distance trips that can be converted to micromobility modes.	Medium. Scalable in SBCCOG only (could be scaled in other parts of the county if other COGs choose).	Medium. May be relevant for projects in SBCCOG subregion.	Medium. Some elements may be delivered faster than others.	High. Projects are capital investment.	Low. EFC presence in SBCCOG is low, compared to other parts of the county.	Low. CalEnviroScreen scores are relatively better in SBCCOG subregion compared to other parts of the county.	15	23	14	14
			1	2	1	2	2	2	3	1	1				
		Stakeholder Weighting	**1.09**	**1.55**	**2.45**	**2.18**	**1.00**	**2.55**	**0**	**2.27**	**2.36**				

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