

October 17, 2023

Andrew Fremier, Executive Director
Metropolitan Transportation Commission/Association of Bay Area Governments
375 Beale Street, Suite 800
San Francisco, CA 94105-9800
afremier@bayareametro.gov

RE: CARB Review of Metropolitan Transportation Commission/Association of Bay Area Governments Draft 2025 RTP/SCS Senate Bill 375 Greenhouse Gas Emissions Draft Technical Methodology

Dear Director Fremier:

California Air Resources Board (CARB) staff received the Metropolitan Transportation Commission/Association of Bay Area Governments (MTC/ABAG) draft 2025 RTP/SCS Senate Bill 375 (SB 375) greenhouse gas emissions technical methodology (draft TM) on June 26, 2023, pursuant to requirements under California Government Code §65080 (b) (2) (I) (i). CARB staff have reviewed the draft TM and identified several questions and concerns. A detailed discussion of these topics grouped by severity of concern, along with CARB's specific concerns and suggested remedies, are included in Attachment 1.

Please follow up with CARB staff on how MTC/ABAG will address these items prior to publicly releasing quantification of the sustainable communities strategy (SCS) to avoid circulating inaccurate estimates of greenhouse gas emissions. It is critical that CARB staff and MTC/ABAG staff reach agreement on MTC/ABAG's TM as soon as possible to avoid the risk of quantification issues arising during CARB's final SCS review. The information requested is ultimately needed for CARB to evaluate the final SCS. For CARB to accept or reject MTC/ABAG's final determination on whether the region achieves the greenhouse gas emission reduction target, CARB staff will have to be able to accurately evaluate the SCS actions planned for implementation and accept the greenhouse gas emission reductions being quantified. If CARB staff are unable to do so, CARB will not be able to accept MTC/ABAG's determination that its SCS would meet the greenhouse gas emission reduction target, which could lead to the need for SCS revisions and further board approvals, the requirement to develop an alternative planning strategy under California Government Code §65080 (b) (2) (H), and/or ineligibility for certain State transportation funds.

Please note that MTC/ABAG's 2035 greenhouse gas emission reduction target is 19%. We expect MTC/ABAG to reach this target. Although the current evaluation guidelines allow metropolitan planning organizations (MPO) to round up if necessary to reach their targets, CARB staff will be re-evaluating this policy in coming years as part of discussions with MPOs and the public. CARB staff advise all MPOs to create SCSs that achieve their stated target and not assume that rounding will be allowed in the future.

Director Fremier
October 17, 2023
Page 2

CARB staff are available to provide technical assistance and answer any questions that you may have about these comments or any other issues on which we can offer assistance in support of MTC/ABAG's 2025 SCS development process. If you have any questions, please contact me at carey.knecht@arb.ca.gov.

Sincerely,

/s/

Carey Knecht, Chief
Transportation Systems Planning Branch

Attachment

cc: (via email)

Yuqi Wang, Plan Bay Area 2050+ Deputy Project Manager
Metropolitan Transportation Commission/Association of Bay Area Governments
ywang@bayareametro.gov

Chirag Rabari, Plan Bay Area 2050+ Project Manager
Metropolitan Transportation Commission/Association of Bay Area Governments
crabari@bayareametro.gov

Dave Vautin, Assistant Director
Metropolitan Transportation Commission/Association of Bay Area Governments
dvautin@bayareametro.gov

Lisa Zorn, Assistant Director
Metropolitan Transportation Commission/Association of Bay Area Governments
lzorn@bayareametro.gov

Attachment 1 - Detailed List of CARB Questions, Concerns, Suggested Remedies, and Comments

MTC/ABAG 2025 RTP/SCS SB 375 GHG Emissions
June 2023 Draft Technical Methodology

Topics of significant concern

1. Travel modeling and data

1.1. Exogenous variables

MTC/ABAG's draft technical methodology (TM) lists over 40 exogenous variables that MTC/ABAG may use to shape the performance of anticipated, quantified outcomes for the 2025 SCS. MTC/ABAG indicates an intent to utilize some variables from the prior 2021 SCS, making targeted updates to "relevant assumptions based on a set of criteria" and "deriving certain exogenous variables" in coordination with other Metropolitan Planning Organizations (MPOs). The draft TM does not identify which assumptions for exogenous variables would be revised or detail what changes would be considered between the 2021 and 2025 SCSs. Consistent with CARB's 2019 SCS Program and Evaluation Guidelines ("SCS evaluation guidelines") beginning on page 7 of the appendices, MPOs need to commit to assumptions to the extent known and available. These are important for the travel model results and will be used as part of the incremental progress reporting component of the SCS evaluation process.

Suggested Remedy: Please revise the draft TM to include the values and details for CARB staff review prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information. CARB can provide technical assistance with identifying relevant variables and data sources, developing reasonable values with documentation that supports changes in the variable(s) over time, and verifying outputs. As part of the SCS submittal process, CARB staff may request additional information to conduct and support the final SCS evaluation.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG's final GHG emission reduction determination.

1.1.1. Auto operating cost assumptions and values

The draft TM does not provide the method for calculating auto operating costs (AOC) or values that will be used for the 2025 RTP/SCS. CARB staff recommend that recent discussions between CARB and MPO staff on how to update the calculation method to reflect the latest information on fleet mix and fuel efficiency, including CARB's Advanced

Clean Cars (ACC) II regulation, as well as a 1 percent rebound effect, which corresponds to a VMT elasticity of 0.01 for fuel efficiency, be reflected.

Suggested Remedy: Please revise the draft TM to include the AOC values that will be used, including data sources and calculation steps, prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information. Additionally, CARB staff recommend adding an AOC calculation spreadsheet to the final TM or final plan documentation for full transparency and clarity.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

1.1.2. Estimating impacts of telework and carshare

In the 2021 SCS evaluation, CARB recommended modeling improvements to better estimate the effects of telework and improving local data used to estimate benefits for carshare programs as SCS strategies. CARB’s recommendations are intended to ensure the methodologies more accurately represent emission reductions from expanding transportation demand management initiatives (e.g., carshare and transportation alternatives for specific populations) and further help to avoid related issues, such as underestimating or overestimating emissions impacts from telework under the region’s TDM ordinance and addressing whether telework has a long-term impact on housing, job locations, and travel behavior changes.

Additionally, CARB staff continue to monitor ongoing research on the effects of telework. Some research has begun to raise questions, as it highlights the potential for VMT to increase and offset the reductions even with continued telework, due to other trips made by work-from-home workers.¹ As such, CARB staff request more information about how the rebound effect is accounted for in MTC/ABAG’s travel demand model.

The draft TM mentions that MTC/ABAG intends on updating exogenous variables and adjusting certain but unidentified factors. MTC/ABAG should specify what factors it plans to adjust and provide documentation based on local data to support its assumptions.

Suggested Remedy: Please revise the draft TM to identify what values are proposed to be updated and adjusted, the data sources, assumptions, variables, and other relevant factors considered for CARB staff to review prior to the draft 2025 RTP/SCS public release. Please include documentation verifying that the rebound effect is accounted for. CARB staff are not

¹ See for example: Obeid, Hassan and Anderson, Michael L. and Bouzaghrane, Mohamed Amine and Walker, Joan L., Does Telecommuting Reduce Trip-Making? Evidence From a U.S. Panel During the COVID-19 Impact and Recovery Periods. Available at SSRN: <https://ssrn.com/abstract=4213516> or <http://dx.doi.org/10.2139/ssrn.4213516>

currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

1.2. Interregional travel assumptions and validating data sources

MTC/ABAG proposes to quantify the effects of interregional travel based on annual average daily traffic volumes at highway gates and the High-Speed Rail ridership. However, documentation is still needed to understand the assumptions and validation of the gateway locations. CARB staff recommend that MTC/ABAG consult with Caltrans to obtain interregional trip estimates utilizing the California Statewide Travel Demand Model.

Suggested Remedy: Please revise the draft TM to clarify how MTC/ABAG intends to quantify the effects of interregional travel and validate results with supporting data. Please provide this information to CARB staff prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

1.3. Induced travel demand calculations and assumptions

The draft TM states that MTC/ABAG will approach the forecast and accounting of VMT and GHG emissions of induced travel from new roadway capacity expansion projects using the same approach that was used in its 2021 SCS but does not document the approach. In the 2021 SCS, MTC/ABAG used an integrated land use and travel demand modeling approach to assess the long-term effect of induced travel. The draft TM goes on to say that MTC/ABAG will continue to improve its analysis of long-run induced travel but does not detail how.

Suggested Remedy: Please revise the TM to document what steps will be used to account for induced travel, how the approach will be validated, and how the induced VMT will be factored into the ultimate GHG quantification prior to the draft 2025 MTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

Additionally, as part of the draft 2025 MTP/SCS, please provide a comprehensive mapping and tabulated list of all projects that will add lane miles by functional classification with the number of lanes added, specifying lane types such as general purpose, HOV, HOT/Express,

tolled, and auxiliary lanes. This information will be needed for CARB to evaluate MTC/ABAG’s final GHG emission reduction determination.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

1.4. Travel modeling sensitivity analyses

The draft TM notes that MTC/ABAG will continue working with CARB staff to identify needed travel modeling sensitivity analyses. CARB staff typically recommend sensitivity analyses for all new on-model strategies and key socioeconomic factors if the model has significantly changed. While CARB staff determined that the structure of the model is largely the same as the prior SCS with notable anticipated updates to inputs (e.g., auto operating costs, discussed above), MTC/ABAG will need to clarify the strategies to be quantified on-model so that CARB staff can provide a final reply on whether additional sensitivity analyses are needed.

Suggested Remedy: Please revise the draft TM to identify potential strategies for quantification toward the SB 375 target and whether they will be quantified on-model (also see "Item 3.1. Identifying strategies") for CARB staff to review prior to the draft 2025 RTP/SCS public release. CARB staff will follow up with MTC/ABAG on what, if any, sensitivity analysis will be needed as part of the draft 2025 RTP/SCS plan documentation.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

1.5. EMFAC adjustment factor for on-model strategies

The draft TM provides that MTC/ABAG will use EMFAC 2014, the same model version used in the 2021 SCS, to process travel model outputs into GHG emissions but does not identify whether and what adjustment factor value would be applied.

Suggested Remedy: Please revise the draft TM to clarify that MTC/ABAG will apply an EMFAC adjustment factor to its SCS GHG calculations. Please use a value of 0.3 percent reduction for 2035 as applied in the 2017 SCS, in accordance with the SCS evaluation guidelines.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

2. Calculations and emissions factors for off-model strategies

MTC/ABAG’s TM mentions continued efforts to revise or update the quantification methods and documentation that support off-model strategies in response to CARB’s feedback over

several planning cycles. While the quantification methods themselves continue to be updated or refined, CARB will not be able to verify whether the resulting VMT and GHG estimates are reasonable until assumptions in the formulas are available for review. CARB will review the draft and final 2025 SCS to examine the assumptions and justifications that help explain why data and variables that support forecasted GHG emission reductions are reasonable. CARB staff may use a variety of methods to validate the appropriateness of data sources and the reasonableness of the assumptions, including an evaluation of whether:

- Data sources are appropriate for SB 375 purposes and reasonably updated.
- Assumptions are supported by the plan’s actions, policies, and/or funding commitments.
- Assumptions and variables are consistent with other relevant data sources.

Further, the draft TM notes that EMFAC 2014 will be used for emissions factors in all off-model strategies. In accordance with CARB’s SCS evaluation guidelines, MTC/ABAG must use the latest EMFAC model with updated emissions factors to estimate GHG emission reductions from off-model strategies. This applies to all off-model strategies, even if they were previously quantified with an older version of EMFAC. Using the latest EMFAC model improves emissions estimation accuracy by reflecting the latest vehicle fleet mix in the region.

Suggested Remedy: Please revise the draft TM to identify data sources, assumptions, variables, and other relevant factors that are being considered for revision or update, describe what will be changing, and provide justification for CARB staff review prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. Please also show the complete off-model quantification steps that include the GHG quantification step and use EMFAC2021 emission factors when calculating GHG emission reductions from all off-model strategies in the 2025 SCS. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

3. 2025 SCS strategies for per capita GHG emission reduction credit

Per the SCS evaluation guidelines, CARB staff will conduct a series of policy analyses of the final RTP/SCS to evaluate whether the strategies, key actions, investments from the RTP/SCS, and the implementation progress support the stated GHG emission reductions to determine whether the SCS would achieve the applicable GHG emission reduction targets. However, the precursor to these analyses is a separate evaluation and acceptance of the technical methodology and quantification that underpin the SCS’s GHG emission reductions. The SCS evaluation guidelines appendices provide guidance to MPOs on technical issues, quantification methods, model sensitivity tests, and data needs for the technical methodology and SCS.

Appendix E of the SCS evaluation guidelines offers detailed information on calculating the benefits of RTP/SCS strategies not captured in the travel demand model. Per the appendix, MPOs need to provide a description of the off-model strategy and how it would reduce GHG emissions, the existing level of this strategy, trip and emissions data needed to quantify GHG emission reductions, the quantification steps and assumptions, and how the MPO plans to track whether the strategy is working. This level of detail is necessary for CARB staff to verify that the associated GHG emission reduction benefits will occur in the appropriate timeframe and are truly additional to GHG emission reductions already quantified through the MPO’s travel demand modeling and surplus to existing state programs. Please see Appendix E of the SCS evaluation guidelines, pages 45-51, for more details on the information CARB staff need to assess off-model strategies.

In addition, for both on- and off-model components, the SCS evaluation guidelines outline how CARB staff will review whether a region is falling behind on implementation and, if so, what measures are being taken to correct course, such as a change to the RTP/SCS strategy and/or the addition of measures to accelerate implementation. Appendix B of the 2022 Progress Report on California’s Sustainable Communities and Climate Protection Act illustrates that the region is falling behind the progress previously identified as needed on a number of key trends, such as daily transit ridership, total new housing units and total new multifamily housing units.

These points of information are fundamental for CARB to review before an MPO quantifies GHG emission reductions. Per the SCS evaluation guidelines, MPOs need to include specific quantification approaches for each of the potential SCS strategies.

Suggested Remedy: Please revise the TM to include quantification details for potential GHG emissions reduction strategies, including any additional travel model sensitivity documentation, prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff. In any areas where the region is falling behind on implementation, please describe how the region is making the necessary adjustments in policy commitments and investments in the RTP/SCS to meet the target. For each strategy quantification method anticipated to be revised from usage in a previous SCS, please describe what will change and provide justification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

3.1. Identifying potential strategies for quantification

The draft TM indicates MTC/ABAG intends to prepare a focused update to the 2021 SCS and states that the 2021 SCS included 35 strategies and that MTC/ABAG would make “targeted refinements to select strategies” in some instances and “update other strategy

quantification approaches” during the SCS update process. The draft TM does not indicate what refinements or updates would be made to existing strategy-specific methodologies or whether there are any potential new strategies being considered for quantification in the 2025 SCS. Per the SCS evaluation guidelines, MPOs need to include specific quantification approaches for each of the potential SCS strategies.

Suggested Remedy: Please revise the draft TM to identify the potential strategies for quantification toward the SB 375 target for CARB staff review prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff. Please identify whether each strategy is new, not previously quantified, or will be revised and whether the strategy will be quantified on- or off-model. For each strategy quantification method anticipated to be revised, please describe what will change and provide justification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

3.2. Pricing strategies

The draft TM mentions pricing as the 2021 SCS strategy “T5-Implementing Per-Mile Tolling on Congested Freeways with Transit Alternatives” but does not provide enough information for CARB staff to determine whether other pricing strategies would be included in the 2025 SCS, if GHG emissions would be estimated on- or off-model, or the locations of where a pricing strategy would be implemented.

The draft TM notes that MTC/ABAG is collaborating with Caltrans and other stakeholders to identify goals and propose analyses with the aid of a freeway study, which MTC/ABAG intends as a first step towards exploring how pricing could change the region’s freeway network. Beyond this, no additional implementation actions were noted that could bring about pricing. CARB staff recognize the importance of a study, but a study without further details, such as a project list or implementation steps and timeline, is insufficient to be considered a strategy to reduce GHG emissions by 2035.

In the 2021 SCS evaluation, CARB staff expressed concern about the ability to implement this strategy by 2035 because of the state and local action required. The 2021 evaluation also noted that CARB expects MTC/ABAG to identify further progress on the implementation of pricing strategies in the next SCS to continue receiving credit for the full GHG emission reductions estimated in the 2021 SCS.

Suggested Remedy: Please revise the draft TM to include more information that identifies what pricing strategies MTC/ABAG intends to quantify and any additional information that demonstrates progress being made on this strategy. Specifically, CARB staff need to

understand any recent investments, significant actions, or data, beyond planning studies, that help to implement or advance this strategy. Please work with CARB staff on correcting this prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information. Additionally, the draft 2025 RTP/SCS plan needs to provide all data, assumptions, and clear, actionable next steps, milestones, and a timeline that shows what is planned to be implemented by 2035. If other SCS strategies rely on revenues from pricing, the draft plan needs to include information about what revenues are assumed by when.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

3.3. Electric vehicle strategies

The draft TM mentions that MTC/ABAG is exploring potential improvements to six off-model strategies, including two previous SCS strategies that promote the adoption of electric vehicles (EVs): Regional EV Chargers and a Vehicle Buyback and EV Incentive, and would like to discuss methods with CARB staff.

It is crucial for any EV strategy to appropriately identify GHG credits for ZEV provisions that are above and beyond State and federal regulations and incentives, to account for improved ZEV and PHEV technology and updated projections in ZEV incremental costs above conventional vehicles, and to avoid double-counting between credits provided for infrastructure and vehicle incentives. The SCS evaluation guidelines Appendix E section “Quantifying Greenhouse Gas Emission Reductions from Off-Model Strategies” provides two sample quantification methods for MPOs to estimate GHG emission reductions credit for (a) funding the installation of workplace chargers to charge plug-in hybrid electric vehicles (PHEVs) for the return commute and (b) providing incentives for new ZEV purchases to close the cost differential with conventional vehicles. The vehicle buyback and EV incentive strategy appears to generally be a new-ZEV incentive program, and it is essential that MTC/ABAG provides comprehensive information regarding the quantification methodology, underlying assumptions, and how they are justified by funding and data for CARB’s review before incorporating them into GHG reduction estimates shared publicly.

With the quantification methodologies, please fully reflect the policy, technological, and ZEV market changes that have occurred since the prior SCSs were adopted. For example, methodologies need to account for the ZEV regulation requirement of increasing sales up to 100 percent in 2035; other incentive credits including the Federal Inflation Reduction Act (IRA) tax incentives for ZEV up to \$7,500; and market observations, including CARB technology assessments in ACCII showing Battery Electric Vehicle (BEV) cost declines (staff ISOR Appendix G) and cost parity for some vehicle types beginning in 2031.

Suggested Remedy: Please revise the draft TM to reflect changes in ZEV regulations and the ZEV market as described above in the GHG emission quantification method for the ZEV incentive strategy. As such, among other factors, please consider the following in developing an off-model ZEV incentive strategy and quantification method:

- Existing or currently planned incentives such as the federal IRA tax incentives, California’s Clean Vehicle Rebate Project, and the California Clean Fuel Reward
- Number of ZEV and PHEV required under state and federal regulations, also considering that under ACCII, for model years 2026–2035, PHEVs can only account for 20 percent of a manufacturer’s ZEV requirement
- Cost differential between ZEV and non-ZEV and impending cost parity in 2031
- Emission factor from EMFAC2021
- PHEVs must have an all-electric range of at least 50 miles under real-world driving conditions

Please work with CARB staff on updating this prior to the draft 2025 RTP/SCS public release and share revisions with CARB staff for our verification. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

Topics of potential concern (need further clarifications)

4. On- and off-model strategies that assume revenues from pricing as the primary funding source

The draft TM does not specify whether other strategies (on- and off-model) rely on revenues from pricing as the primary funding source to implement the strategy. CARB staff have general concerns about relying on pricing revenues to implement strategies such as a lack of evidence of a pricing strategy being implemented early enough for the assumed revenues to become available and used to implement other strategies. CARB staff would also have concerns when there is no plan, agreement, or mechanism in place to ensure that revenues from pricing are dedicated to specific strategies. For these reasons, CARB staff are concerned that any strategies that rely primarily on pricing as the funding source will not be viable strategies for reducing GHG emissions by 2035.

Comment: Please revise the draft TM to demonstrate how any strategy that relies on pricing revenues will be implemented by 2035. The draft TM needs to be clear which on- and off-model strategies are relying on pricing as a primary funding source. Please include how much revenue is assumed by when and evidence that progress on the implementation timeline of each impacted strategy is on track. Please also include documentation that

demonstrates these funds will be available for these uses, what agencies are responsible, and how progress will be monitored. Without this, please modify the draft TM to show alternative revenue sources for implementation of the impacted strategies. Please work with CARB staff on correcting or clarifying these items before the draft 2025 RTP/SCS is released for public review. Without these corrections, it could result in CARB finding any strategy dependent on pricing revenues as unreasonable and unable to accept MTC/ABAG’s GHG emissions reduction determination.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

5. Meeting the 2020 target

The draft TM mentions a land use modeling “upgrade” to the baseline data for 2020 conditions compared to the prior SCS. No further information was provided to indicate how MTC/ABAG would demonstrate the region achieving the 2020 target.

Comment: For cycle 4 and subsequent SCSs, CARB staff do not expect MPOs to include a 2020 modeled analysis year. CARB staff recommend MPOs use observed data that track progress and demonstrate whether the region continues to meet the 2020 target. CARB staff recommend MPOs use observed data sources that track progress and demonstrate whether the region continues to meet the 2020 target. Please identify observed data sources (e.g., performance measurement system or locally collected data) MTC/ABAG will use to demonstrate whether the region continues to meet its 2020 target.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

6. Revising 2021 SCS growth geographies

MTC/ABAG noted areas of progress including continuing to implement VMT- and GHG-reduction by encouraging future population and economic growth within a set of identified “Growth Geographies.” As noted above, the 2022 Progress Report found that new housing units and new multifamily units were falling behind the progress needed. CARB understands that the Growth Geographies create the frameworks for implementing economic and housing strategies, and MTC/ABAG intends to make revisions, possibly changing definitions, and shift development assumptions in certain areas. The draft TM does not provide further details that describe the changes in land use categories, densities, and growth (populations, housing types, and number of jobs), identify percentages and

locations of where growth would shift, nor note how it would affect VMT/GHG emission reduction estimates for the 2025 RTP/SCS. CARB staff cannot determine whether shifts would result in percentages (e.g., 10 percent, 6 percent, or other levels) that are reasonable and whether changes in Growth Geographies likely lead to greater reductions or increases in VMT and GHG without additional details. The following information would help CARB staff understand the proposed changes

- Mapping of new and revised Growth Geographies;
- Listing, or other summary, of the population, employment, and housing types in Growth Geography areas previously assumed and now slated for revisions; and
- Rationale for choosing designated Growth Geography areas for revisions.

Comment: When the draft 2025 RTP/SCS is released for public review, please include mapping, and provide supporting information that describes why changes were made to definitions, if any, the adjustments from the prior SCS, and the resulting shifts in the number of future populations, employment, and housing in Growth Geography areas and by local jurisdiction that enable a comparison between the 2021 SCS and 2025 SCS.

To maintain similar assumptions that have previously been credited, CARB staff will look for the MPO to document evidence that adequate progress is being made to help implement the strategy through things like:

- Specific investments by the MPO or other agencies in the region towards this strategy.
- Data on VMT reduction data or other measurable data that relates to the specific strategy. This data could be regional or through specific projects, programs, or pilots within the region.
- Specific actions or legislation that will enable or help advance the strategy within the region.
- Significant actions, beyond planning or studies, that implement or advance the strategy. This could include things such as built projects.

If there is inadequate measurable progress on implementation CARB staff will look for clear, actionable next steps and a timeline for implementation of actions that are commensurate to what is needed for the region to get back on track for implementing the strategy by 2035.

If CARB cannot evaluate and/or accept (1) the quantification of GHG emission reduction estimates and/or (2) that the region is on track to achieve the GHG emission reduction target with demonstrated progress on implementing the strategies, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

7. Estimating impacts of autonomous vehicles

In the 2021 SCS evaluation CARB recommended improvements to incorporate the impact of autonomous vehicles (AVs) on the performance of the regional transportation network,

travel demand, and vehicle-sharing systems. The draft TM notes that it would be premature to make changes to existing modeling practices without better understanding of the data. However, MTC/ABAG is considering these factors in the process of updating exogenous variables. Understanding the potential effects of AVs is a difficult problem, as is capturing the effects of new technologies on travel behavior in general. However, autonomous vehicles are currently operating in other locations in California, and it is reasonable to expect that they will become common in the MTC/ABAG region during the 2025 RTP/SCS planning period and that they will have transformative effects on transportation. Even if accuracy is low, regional transportation plans need to begin to anticipate the effects of AVs on the transportation system, VMT, and GHG emissions.

Comment: Please revise the TM to provide clarity on what assumptions are made about autonomous vehicles in the plan. Please provide any supporting data, evidence, or documentation for any assumptions made, and provide this information to CARB for our verification before the draft 2025 RTP/SCS public release.

If CARB cannot evaluate and/or accept the quantification of GHG emission reduction estimates, then CARB will not be able to accept MTC/ABAG’s final GHG emission reduction determination.

Topics of potential future concern (need further clarification in the future)

8. Improvements to induced travel demand analysis

In the 2021 SCS evaluation CARB recommended MTC/ABAG explore modeling processes that further improve the long-term induced travel demand analysis, such as sub-regional or project-level resolution of induced and reduced VMT due to individual expansion projects. The draft TM notes that this analysis work is both staff and compute time intensive. If too resource intensive for the 2025 SCS, please share updates with CARB staff on how MTC/ABAG intends to incorporate this feedback moving forward.

9. Ongoing transit and roadway pricing studies and planning efforts

CARB staff support MTC/ABAG’s efforts to update the SCS in ways that address the evolving regional issues of congestion, housing affordability, transit, and climate impacts. The near-term actions identified to reshape the region’s transit network and proposals to develop a portfolio of roadway pricing options (e.g., means-based cordon systems and new performance metrics on priced roadways) will likely play a significant role in achieving the expected per capita GHG emissions by 2035. Please share updates with CARB staff and how MTC/ABAG intends to incorporate the feedback and/or outcomes of the following programs in the development of strategies in the 2025 SCS:

- Transit 2050+ Planning Effort
- Transit Transformation Action Plan
- Next Generation Bay Area Freeway Study

- Megaregion Working Group
- Vital Signs Performance Data Platform