

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

SACOG 2025 MTP/SCS SB 375 GHG Emissions  
June 2023 Draft Final Technical Methodology

## **Topics of significant concern**

### **1. Travel modeling and data**

#### **1.1. Exogenous variables**

SACOG's draft final technical methodology (TM or technical methodology) lists 6 exogenous variables in Table 4 that SACOG plans to use for the incremental progress analysis and describes how the assumptions used for those exogenous variables for the 2025 SCS will be converted from values in the 2020 SCS. However, the TM provides a description of the process only and does not provide the specific values (e.g., cents per mile for the auto operating cost) that CARB staff need to evaluate the reasonableness of the assumptions.

In addition, the list of variables in Table 4 consists of auto operating cost, vehicle fleet efficiency, household income, the travel demand model version, telework, and inter-regional travel, which is not a comprehensive list of exogenous variables. 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 TM to include the values and details 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. 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 SACOG's final GHG emission reduction determination.**

### **1.1.1. Auto operating cost assumptions and values**

The TM proposes a method for calculating auto operating cost (AOC), which attempts to account for the differences in effects of changes in fuel costs versus in vehicle efficiency. CARB staff have reviewed the proposed method and believe it to be consistent with 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. However, the TM did not include or indicate the specific revised formula, nor did it provide the AOC values that will be used in the 2025 SCS.

**Suggested Remedy:** Please revise the TM to include the revised AOC formula and the AOC values that will be used 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, CARB staff recommend adding an AOC calculation spreadsheet to the updated TM or final plan documentation for full transparency and clarity.

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### **1.2. Interregional travel assumptions and validating data sources**

SACOG’s TM discusses the addition of gateways and major roadways in the current model. However, CARB staff could not find what methods and data sources would be used to estimate and validate the volumes in the TM, or in the current travel demand model documentation, and were unable to assess the potential effect to GHG emissions calculations. CARB staff recommend that SACOG consult with Caltrans to obtain interregional trip estimates utilizing the California Statewide Travel Demand Model.

**Suggested Remedy:** Please revise the TM to clarify how SACOG intends to quantify the effects of interregional travel and validate results with supporting data 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.

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

### **1.3. Induced travel demand calculations and assumptions**

The TM provides reasons for not pursuing iterative land use modeling to incorporate induced travel, opting instead for applying elasticities from the academic literature.<sup>1</sup> The TM states that in light of updated research and guidance on the subject, SACOG is developing a new approach to fully capture induced travel.<sup>2</sup> However, no detail is provided on how SACOG will approach the forecast of vehicle miles traveled (VMT) and GHG emissions that account for the effects of induced travel from new roadway capacity expansion projects. SACOG’s approach in the 2020 MTP/SCS was not accurate enough to quantify the induced travel impacts since it did not explicitly account for the induced travel VMT and GHG emissions. SACOG needs to use an alternative approach, such as the NCST calculator or a hybrid approach.

**Suggested Remedy:** Please revise the TM to document the steps to quantify induced VMT, 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. CARB can provide technical assistance with the induced travel analysis and encourages SACOG to work with CARB staff when estimating the VMT impacts of the 2025 SCS and roadway expansion projects.

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 SACOG’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 SACOG’s final GHG emission reduction determination.**

### **1.4. 2023 travel model documentation and sensitivity analyses**

The TM refers to SACSIM travel model documentation (<https://www.sacog.org/travel-model-documentation>) that is for SACSIM19, not SACSIM23 (as of September 13, 2023). CARB staff want to review the SACSIM23 documentation and will be looking for evidence that the concerns we expressed in the 2020 SCS evaluation have been addressed in some way. In particular, CARB staff will assess changes such as the “work at home” sub-model, transportation network company (TNC) mode

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<sup>1</sup> SACOG Technical Methodology Pages 9-10.

<sup>2</sup> SACOG Technical Methodology Pages 21-22.

incorporation into the choice model, as well as sensitivity (elasticities) to regional accessibility, mix of use, and residential density compared to the existing literature.

CARB staff typically recommend sensitivity analyses for all new on-model strategies and key socioeconomic factors if the model has significantly changed. While the TM notes that the structure of the model is largely the same as the prior SCS with notable anticipated updates and lists the strategies to be quantified on-model, SACOG will need to more specifically define the strategies to be quantified on-model (e.g., the broadly worded “telecommute trends and programs”) so that CARB staff can provide a final reply on whether additional sensitivity analyses are needed.

**Suggested remedy:** Please provide the SACSIM23 documentation as well as the sensitivity analyses test report to CARB staff for our verification, highlighting how this upgrade resolved CARB’s concerns with the previous model, prior to the draft 2025 MTP/SCS public release. CARB staff are not currently able to evaluate and/or accept the methodology as outlined in the TM without this information. CARB staff will look to follow up with SACOG on what, if any, additional sensitivity analysis will be needed as part of the draft 2025 MTP/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 SACOG’s final GHG emission reduction determination.**

#### **1.4.1. Estimating impacts of telework**

In the TM, SACOG states it will capture the impacts of telework with its travel model. CARB staff will need to see additional documentation, including assumptions, research, model sensitivity tests, and/or any other information that supports relevant assumptions. 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.<sup>3</sup> As such, CARB staff request more information about how the rebound effect is accounted for in SACOG’s travel demand model.

**Suggested remedy:** Please provide the SACSIM23 and sub-model documentation as well as the sensitivity analyses test report to CARB staff for our analysis prior to the draft 2025 MTP/SCS public release. Please include documentation verifying that the

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<sup>3</sup> 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>

rebound effect is accounted for. 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 SCAG’s final GHG emission reduction determination.**

#### **1.4.2. Estimating impacts of transportation network companies**

In the TM, SACOG states it will capture the impacts of TNCs with its travel model. However, documentation is still needed to understand what the assumptions are and how they are supported by data. The TM needs to document data sources used for calibrating and validating the sub-model. Further, it needs to document any assumptions made, the model's sensitivity to these activities, and the impact on GHG emission reduction.

**Suggested Remedy:** Please revise the TM to provide the assumptions used in the model for TNCs and any supporting documentation 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, consistent with CARB’s [2019 SCS Program and Evaluation Guidelines](#) (SCS evaluation guidelines) SACOG will need to provide a sensitivity analysis of the model for these variables to CARB as part of the draft 2025 MTP/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 SACOG’s final GHG emission reduction determination.**

#### **1.5. EMFAC adjustment factor for on-model strategies**

The TM provides that SACOG will use EMFAC 2011, 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 TM to clarify that SACOG will apply an EMFAC adjustment factor to its SCS GHG calculations and share revisions with CARB staff for our verification. Please use a value of 3.7 percent for 2035, as applied in the 2020 SCS, in accordance with CARB’s SCS evaluation guidelines. 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 SACOG’s final GHG emission reduction determination.**

## **2. Calculations and emissions factors for off-model strategies**

SACOG’s technical methodology (TM) refers to the calculation methodologies for various strategies that were used in previous SCSs and notes that SCS4 off-model adjustments “are expected to be very similar to those calculated for SCS3.” CARB staff will not be able to verify whether SACOG’s 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

In accordance with CARB’s SCS evaluation guidelines, SACOG 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 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 prior to the draft 2025 MTP/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.

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### **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 MTP/SCS to evaluate whether the strategies, key actions, investments from the MTP/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 reductions from MTP/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 MTP/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 model documentation for SACSIM23, prior to the draft 2025 MTP/SCS public release and share revisions with CARB staff for our verification. 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 SACOG’s final GHG emission reduction determination.**

### **3.1. Regional express lane pricing strategy**

The TM identifies regional express lane pricing as an SCS strategy that SACOG anticipates quantifying on model and conducting specific sensitivity tests for. The TM notes that SACOG is collaborating with Caltrans, SCAG, and SANDAG to develop a research framework for piloting the effects of integrating mobility payment systems with demand management approaches. This framework is essential, but there is no detailed information about it or the implementation steps and timeline, so it is not clear what progress has been made or what would be implemented by when. Beyond this, no additional implementation actions were noted that could bring about the pricing strategy. This framework alone is not enough to consider this a strategy for GHG emissions reduction by 2035.

In the 2020 SCS evaluation, CARB staff expressed concern about the ability to implement this strategy by 2035 because it requires buy-in from local jurisdictions, stakeholders, and the public. The 2020 SCS evaluation also noted that CARB expects SACOG to identify further progress on the implementation of pricing strategies in its next SCS in order to continue receiving credit for the full GHG emission reductions estimated in the 2020 SCS.

**Suggested Remedy:** Please revise the TM to include more information on the research framework 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 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, the draft 2025 MTP/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 SACOG’s final GHG emission reduction determination.**

### **3.2. Mileage-based user fee strategy**

The 2020 SACOG MTP/SCS included PayGo, a mileage-based user fee as a GHG reduction strategy as well as a replacement for gas tax revenue. The current TM does not include a mileage-based user fee as a GHG reduction strategy and does not explain whether this strategy has been abandoned and, if so, how this will impact future funding of the transportation system. As mentioned in CARB’s evaluation of SACOG’s 2020 MTP/SCS, “CARB staff remain concerned that if the SCS pricing strategies are delayed or not implemented, the transit and active transportation projects tied to the 2031-2035 time period will not be delivered in time.”

**Suggested Remedy:** Please revise the TM to explain this strategy’s absence, including whether it is being removed, adjusted outside the SCS timeframe, or other, and why.

If in fact SACOG plans to incorporate this strategy then please revise the draft TM to include information that demonstrates progress being made on this strategy from the 2020 MTP/SCS. Specifically, CARB staff need to understand any recent investments, significant actions, or data, beyond planning studies, that help to implement or advance this strategy.

If included, the TM needs to clearly distinguish between a revenue-neutral road pricing strategy and any regional pricing strategy and demonstrate how mileage-based user fees would result in GHG emission reductions. Please work with CARB staff on correcting this before the draft 2025 MTP/SCS is released for public review. 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 MTP/SCS needs to provide all data and assumptions, and actionable next steps, milestones, and a timeline that show what is planned to be implemented by 2035. Because transportation project funding may rely on revenues from pricing, the draft plan needs to also 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 SCAG’s final GHG emission reduction determination.**

### **3.3. Electric vehicle strategies**

The TM mentions that SACOG’s 2025 SCS will include off-model calculations for the strategy of locally initiated programs for EV infrastructure and to promote EV market penetration. Table 2 in the TM, MTP/SCS Strategy Quantification Approaches, lists only additional infrastructure for EV charging, while the off-model strategy section also mentions programs to accelerate and increase EV market penetration. SACOG did not provide the calculation method for these strategies in the TM but states that calculations will be done in largely the same manners as the previous SCS.

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 installation of workplace chargers to charge PHEVs’ battery for the return commute, and (b) providing incentives for new ZEV purchases to close the cost differential with conventional vehicles. Please fully reflect the policy, technological, and ZEV market changes that have occurred since the prior SCSs were adopted. For example, with the quantification methodologies, please account for the ZEV regulation requirement of increasing sales up to 100% in 2035;<sup>4</sup> other incentive credits including the Federal Inflation Reduction Act (IRA) tax incentives for ZEV up to \$7,500;<sup>5</sup> and market observations, including CARB technology assessments in ACCII showing Battery Electric Vehicle (BEV) cost declines (staff ISOR Appendix G)<sup>6</sup> and cost parity for some vehicle types beginning in 2031.

**Suggested Remedy:** Please revise the 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

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<sup>4</sup> For more information, see <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars-i>

<sup>5</sup> For more information, see <https://www.irs.gov/credits-deductions/credits-for-new-clean-vehicles-purchased-in-2023-or-after>

<sup>6</sup> For more information, see <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/accii/appg.pdf>

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 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.

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### **Topics of potential concern (need further clarifications)**

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

The 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 TM to demonstrate how any strategy that relies on pricing revenues will be implemented by 2035. The 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 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 MTP/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 SACOG’s GHG emissions reduction determination.

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## **5. Meeting the 2020 target**

SACOG’s TM mentions that it will use EMFAC2011 for calculations of 2020 target compliance, but no further information was provided to indicate how SACOG 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. Please identify observed data sources (e.g., performance measurement system or locally collected data) SACOG will use to demonstrate whether the region continues to meet its 2020 target.

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## **6. Growth geography and timing**

One of SACOG’s VMT and GHG-reducing strategies is targeted infill and densification in transit priority areas. CARB staff expressed concern with the plan’s ambitious assumptions associated with the strategy and recommended in the 2020 SCS evaluation that SACOG seek to accelerate infill to further SCS implementation and goals. As noted above, the 2022 Progress Report found that new housing units and new multifamily units were falling behind the progress needed.

SACOG’s response in the TM acknowledges the difficulty of doing this with the tools at the MPO’s disposal. The TM does not provide further details describing whether changes are to be made to the land use and housing forecast assumptions and or the strength of the strategies/policies/programs that would support maintaining a similar level of VMT/GHG emission reduction and credit for the strategy in the 2025 SCS.

**Comment:** When the draft 2025 MTP/SCS is released for public review, please include supporting information that describes what, if any, adjustments were made to the total numbers and time phasing of population, employment, and housing assumed by local jurisdictions compared to the 2020 SCS, along with the rationale.

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.

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## **7. Estimating impacts of autonomous vehicles**

In the TM, SACOG states it is not planning to incorporate the impact of autonomous vehicles (AV) into its modeling due to a lack of data. 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 SACOG region during the 2025 MTP/SCS planning period and that

they will have transformative effects on transportation.<sup>7</sup> 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 MTP/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 SACOG’s final GHG emission reduction determination.**

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

#### **8. RAISE grant and furthering equity and inclusion**

CARB supports SACOG’s efforts to update the SCS in ways that help further equity and inclusion in regional planning. SACOG’s efforts to implement its federal Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant to establish a model for equity-centered, community co-created infrastructure project development to reinvent how regional transportation projects are prioritized for state and federal investment. Please share updates with CARB staff on how SACOG intends to incorporate the feedback and/or outcomes of this work in the development of strategies in the 2025 SCS.

#### **9. Project selection and evaluation process**

SACOG undertook the Project Evaluation Process (PEP) to update its transportation project assessment methodology. This process sought metrics to show connections of projects to SACOG policies such as reducing socioeconomic disparities, increasing access to economic opportunity, improving goods movement, reducing VMT, reducing bottleneck congestion, and reducing injuries and fatalities. CARB staff request that SACOG staff share information on the application of the results of the PEP to project selection and plan implementation as part of the documentation submitted with the final SCS submittal.

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<sup>7</sup> For thinking from the State on adopting and adapting to AVs, see *Driving the Future: Autonomous Vehicles Strategic Framework - Vision and Guiding Principles*, at [https://calsta.ca.gov/-/media/calsta-media/documents/final\\_avsf\\_visionguidingprinciples-a11y.pdf](https://calsta.ca.gov/-/media/calsta-media/documents/final_avsf_visionguidingprinciples-a11y.pdf)