EVALUATION OF THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS' SB 375 2020 SUSTAINABLE COMMUNITIES STRATEGY

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CALIFORNIA
AIR RESOURCES BOARD

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Background

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) is intended to support the State's broader climate goals by encouraging integrated regional transportation and land use planning that reduces greenhouse gas (GHG) emissions from passenger vehicle use. California's metropolitan planning organizations (MPO) develop regional Sustainable Communities Strategies (SCS) – as part of their regional transportation plans (RTP) – which contain land use, housing, and transportation strategies that, when implemented, can meet the per capita passenger vehicle GHG emission reductions targets for 2020 and 2035 set by the California Air Resources Board (CARB or Board). Once an MPO adopts an SCS, SB 375 directs CARB to accept or reject an MPO's determination that its SCS, when implemented, would meet the targets.

On September 3, 2020, Southern California Association of Governments (SCAG)[1], which serves as the MPO for the Southern California region, adopted its 2020 Regional Transportation Plan/Sustainable Communities Strategy, also known as *Connect SoCal*.[2] SCAG provided for CARB staff's review, a complete submittal of the 2020 SCS and all necessary supporting information on October 9, 2020. SCAG's 2020 SCS estimates an 8 percent and a 19 percent decrease in GHG per capita emissions from light-duty passenger vehicles by 2020 and 2035, respectively, compared to 2005. The region's per capita GHG emissions reduction targets are 8 percent in 2020 and 19 percent in 2035, compared to 2005 levels, as adopted by the Board in 2018.[3] This report reflects CARBs evaluation of SCAG's 2020 SCS GHG quantification.

[1] Southern California Association of Governments is the largest MPO in California, covering six counties and 191 cities in the Southern California region. The SCAG region includes 48 percent of California's population with about 19.1 million people.
[2] Southern California Association of Governments. 2020 Regional Transportation Plan/Sustainable Communities Strategy.
[3] CARB. Board Resolution 18-12 (March 22, 2018).

CARB's Evaluation

After CARB set the first SB 375 GHG emission reduction targets in 2010, CARB staff developed the first guidelines[4] on how SCSs would be evaluated for the purposes of CARB's determination in 2011. These 2011 Evaluation Guidelines focused on the technical aspects of regional travel demand modeling and analysis for how CARB would determine acceptance or rejection of an MPO's determination that it met its applicable GHG emission reduction targets. In 2018, when CARB updated the SB 375 GHG emission reduction targets, the Board directed CARB staff to place greater attention on the strategies, key actions, and investments committed by the MPOs rather than on modeling outputs. Pursuant to Board direction, CARB staff updated its 2011 Evaluation Guidelines in the document *Final Sustainable Communities Strategy Program and Evaluation Guidelines*[5] (2019 Evaluation Guidelines). Under CARB staff's 2019 Evaluation Guidelines, evaluation of SCS strategies, key supporting actions and investments serve as the basis for accepting or rejecting an MPO's SB 375 GHG determination.

CARB's evaluation of the SCS consists of two components - the determination and reporting components and is based on the general method described in CARB staff's 2019 Evaluation Guidelines. This report summarizes CARB staff's evaluation of SCAG's 2020 SCS.

The determination component covers the analyses conducted by CARB staff to determine whether the SCS would achieve the applicable GHG emission reduction targets when implemented. This component consists of a series of four policy analyses, which evaluate whether the strategies, key actions and investments from the SCS support its stated GHG emission reductions. These four analyses include Trend Analysis, Policy Analysis, Investment Analysis, and Plan Adjustment Analysis. CARB staff's evaluation relied on a review of SCAG's 2020 SCS, additional SCS submittal materials provided by SCAG further explaining its modeling inputs and assumptions, performance indicators trends, key actions, investments, current trends and plan adjustments, as well as on information gathered in follow up conversations with SCAG

[4] CARB. 2011 Methodology for CARB Staff Review of SCSs. (July 2011).
[5] CARB. Final Sustainable Communities Strategy Program and Evaluation Guidelines. (November 2019).

staff. For a summary of strategies and quantification methods evaluated as part of SCAG's 2020 SCS submittal see Appendix A.

With respect to the reporting component, the 2019 Evaluation Guidelines includes three elements: tracking implementation, incremental progress, and equity. Tracking implementation reporting captures progress the region has made toward its SCS implementation based on observed data and whether it is on track to meet the GHG reduction targets based on how well the observed data track with what the plan said would happen. Incremental progress reports on whether an MPO's SCS includes more or enhanced strategies compared to its prior SCS that are consistent with the information the MPO shared during the 2018 target-setting process. The equity section identifies the efforts the MPO has undertaken to meet federal and State requirements related to equity. These reporting components are included as Appendix C: MPO Reporting, and serves to identify the effectiveness of prior SCS implementation efforts and increase overall transparency of the SCS for the public and other stakeholders.

Trend Analysis

This section summarizes CARB's analysis of key plan performance indicators to determine if the data provided by SCAG support the 2020 SCS's stated GHG and vehicle miles traveled (VMT) reductions. As part of the 2019 Evaluation Guidelines, CARB staff requested data on the following eight performance indicators: 1) household vehicle ownership, 2) mode share, 3) average travel time by mode, 4) daily transit ridership, 5) average trip length by mode, 6) seat utilization, 7) VMT per capita, and 8) GHG per capita. These indicators represent how a region can show changes to its per capita VMT over time through policies and investments undertaken and reflected in its SCS.

SCAG provided data associated with these metrics from the output of its travel demand model, SCAG Activity-Based Travel Demand Model (ABM). Staff analyzed how these metrics change over time (i.e., 2016 to 2035)[6] to determine whether these eight SCS performance indicators are trending in a direction that supports the stated GHG/VMT

[6] The trend analysis is intended to analyze trends for the target year compared to 2005. However, SCAG did not provide 2005 data for some performance indicators, including Average Trip Length by Mode, Daily Transit Ridership, and Average Travel Time by Mode due to a change in the modeling platform from a trip-based model to a new activity-based travel demand model. Therefore, CARB's trend analysis is based on 2016 and 2035 data.

reductions. Table 1 provides a summary of the trend analysis for SCAG's 2020 SCS. SCAG did not provide transit seat utilization data, so CARB staff could not review the trend for those data.

Table 1. Trend Analysis Results

Performance Indicator	Forecast Change* 2016** to 2035	Trend Analysis
Average Trip Length By Mode	SOV (-3.8%) HOV (-3.6%) Transit (+19.8%) Bike (+7.4%) Walk (+1.3%)	SCAG's 2020 SCS forecasts a decrease in the average single-occupancy vehicle (SOV) trip length from 12.1 miles/day in 2016, to 11.7 miles/day in 2035. Over the same time period, trip lengths for bike/walk increase from 1.7 to 1.8 and transit increases from 7.3 to 8.8 over the same period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that reducing SOV trip length reduces VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Average Travel Time By Mode	SOV (-10.7%) HOV (-6%) Transit (+16.3%)	SCAG's 2020 SCS forecasts a decrease in the average SOV travel time (20 minutes in 2016 to 17.9 minutes in 2035) and high-occupancy vehicle (HOV) travel time (13 minutes to 12.2 minutes); with increasing transit travel time (39.1 minutes to 45.4 minutes) over the same time period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that travel time and trip length change proportionally and are supportive of reducing VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Mode Share	SOV (-0.2%) Transit (+1.4%) Bike/Walk (+1.0%)	SCAG's 2020 SCS forecasts that mode share for SOV will slightly decrease from 36% in 2016 to 35.8% in 2035, while mode share for transit and walk/bike will increase from 3.2% to 4.7%, and 9.1% to 10.1%, respectively, over the same period. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that shifting away from driving alone to other modes such as transit, walk and bike reduces per capita VMT and GHG emissions. Please see Appendix B: Data Table for more details.

Performance Indicator	Forecast Change* 2016** to 2035	Trend Analysis
Daily Transit Ridership	+115.4%	SCAG's 2020 SCS forecasts daily transit ridership increases from 2,074,697 in 2016 to 4,469,294 in 2035. CARB staff finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that increasing transit ridership will reduce GHG emissions. However, CARB staff has concern about this trend when looked at in the context of the trend in transit travel time (which increase from 39.1 minutes to 45.4 minutes in 2035 as noted above) compared to driving alone (which decrease from 20 minutes to 17.9 minutes in 2035 as noted above). Transit travel time is more than two times longer than driving alone despite transit trip lengths being one-third the length of SOV trips. This is not consistent with the empirical literature that shows decreasing SOV travel times alongside increasing and longer transit travel times would increase transit ridership and reduce GHG emissions. Please see Appendix B: Data Table for more details.
Household Vehicle Ownership	-1.2%	SCAG's 2020 SCS forecasts a decrease in household vehicle ownership from 1.90 in 2016 and 1.88 in 2035. CARB staff finds the 2016 to 2035 trend directionally supportive of reducing GHG emissions and consistent with the relationship shown in the empirical literature that reducing vehicle ownership reduces GHG emissions. However, CARB staff has concern about this trend when looked at in the context of transit ridership per household (i.e., 0.34 in 2016 to 0.62 in 2035). The magnitude of increase in transit ridership forecasted may not be consistent with the modest reduction in vehicle ownership between 2016 and 2035, even though transit ridership increases over the same period. This is contrary to the empirical literature where a household that uses more transit tends to own fewer vehicles. These results are not consistent and may not support reducing GHG emissions. Please see Appendix B: Data Table for more details.

Performance Indicator	Forecast Change* 2016** to 2035	Trend Analysis
VMT per Capita	-13.9%	SCAG's 2020 SCS forecasts VMT to decrease from 23.1 VMT/day in 2016 to 19.8 VMT/day in 2035. CARB staff finds this trend supportive and consistent with the relationship shown in the empirical literature that reducing VMT per capita will reduce GHG emissions. Please see Appendix B: Data Table for more details.
GHG per Capita Reduction Between 2005 and 2020	-8.3%	The GHG per capita reduction forecasted by SCAG meets the target established by CARB. Please see Appendix B: Data Table for more details.
GHG per Capita Reduction Between 2005 and 2035	- 19.1%	The GHG per capita reduction forecasted by SCAG meets the target established by CARB. Please see Appendix B: Data Table for more details.
Seat Utilization	SCAG did not provide data.	N/A

Notes:
* (-) decreasing, (+) increasing, (~) no change
** For its 2020 RTP/SCS, SCAG used a new activity-based travel demand model. The output from this modeling included the performance indicators used for the trend analysis. SCAG was not able to provide modeled output for 2005 for all metrics, but did provide output for calendar year 2016, the base year of the plan.
N/A means not available.

CARB staff finds that taken as a whole, the performance indicators used to conduct the Trend Analysis support the GHG reductions projected in SCAG's SCS.

Policy Analysis

The following section summarizes CARB staff's evaluation of whether or not SCAG's 2020 SCS contains key policy, investment, and other actions that support its identified strategies for meeting its GHG emission reduction targets using the general method described in CARB's 2019 Evaluation Guidelines. This analysis focuses on what policy commitments are contained in the SCS to support implementation and provides CARB with qualitative evidence on whether an MPO's claimed GHG reductions from its SCS strategies are likely, risky, or unlikely. CARB staff's analysis is organized across four

broad SCS strategy categories: (1) land use and housing, (2) transportation infrastructure and network, (3) local/regional pricing, and (4) electric vehicle and new mobility. Within each strategy category, CARB staff discusses: the applicable SCS strategies; the planned outcomes that the SCS assumes will occur in 2035 when strategies are fully implemented; and CARB staff's analysis of whether the SCS contains key policy and investment actions that will support implementation of the SCS strategies and planned outcomes.

CARB staff's analysis of key supporting actions looked at a number of policy factors that, when considered together, are expected to explain how the MPO region will achieve the development pattern, transportation network characteristics, and travel pattern assumed in its SCS by 2035. In general, across all strategy categories, CARB staff looked for:

- Whether the SCS provided policy actions that corresponded to each of its individual strategies.

- Whether the actions were clear with respect to scope, who will be involved, what will be done, and the anticipated implementation timeline.

- Whether the actions were measurable and included specific regional investment commitments in the RTP/SCS project list, policy and/or financial incentives; technical assistance; and if legislative or other entity action is needed, partnership activities to advance needed changes.

Information used for this effort was collected from SCAG's 2020 SCS and through additional supporting materials provided by SCAG in its submittal to CARB.

Land Use and Housing Strategy Commitments

SCAG's 2020 SCS includes four land use- and housing-related strategies, including infill development, increasing density near transit infrastructure, job/housing balance, and mixed land uses. Together, these land use and housing strategies support SCAG's goals of encouraging development of diverse land uses in areas that are supported by multiple transportation options and promoting conservation of natural and agricultural

lands and restoration of habitats. SCAG estimates these strategies, in aggregate, will contribute to 14.2 percent[7] of its total per capita GHG emissions reductions.

SCS Planned Outcomes

The SCS includes assumptions about the type and character of new land use and housing development that will take place in the region between 2016 and 2035. Specifically, the plan[8].

- Adds 1,158,000 new housing units and 1,177,000 new jobs.
- Increases the region's residential density by 20 percent.
- Includes 393,000 new single-family housing units (30 percent of the total new units) and 906,000 (70 percent) multi-family or attached housing.
- Forecasts 64 percent of households[9] and 74 percent of employment to occur in the regions priority growth areas.
- Increases growth within priority areas[10] (which include job centers, high-quality transit areas, and neighborhood mobility areas), avoids growth in absolute

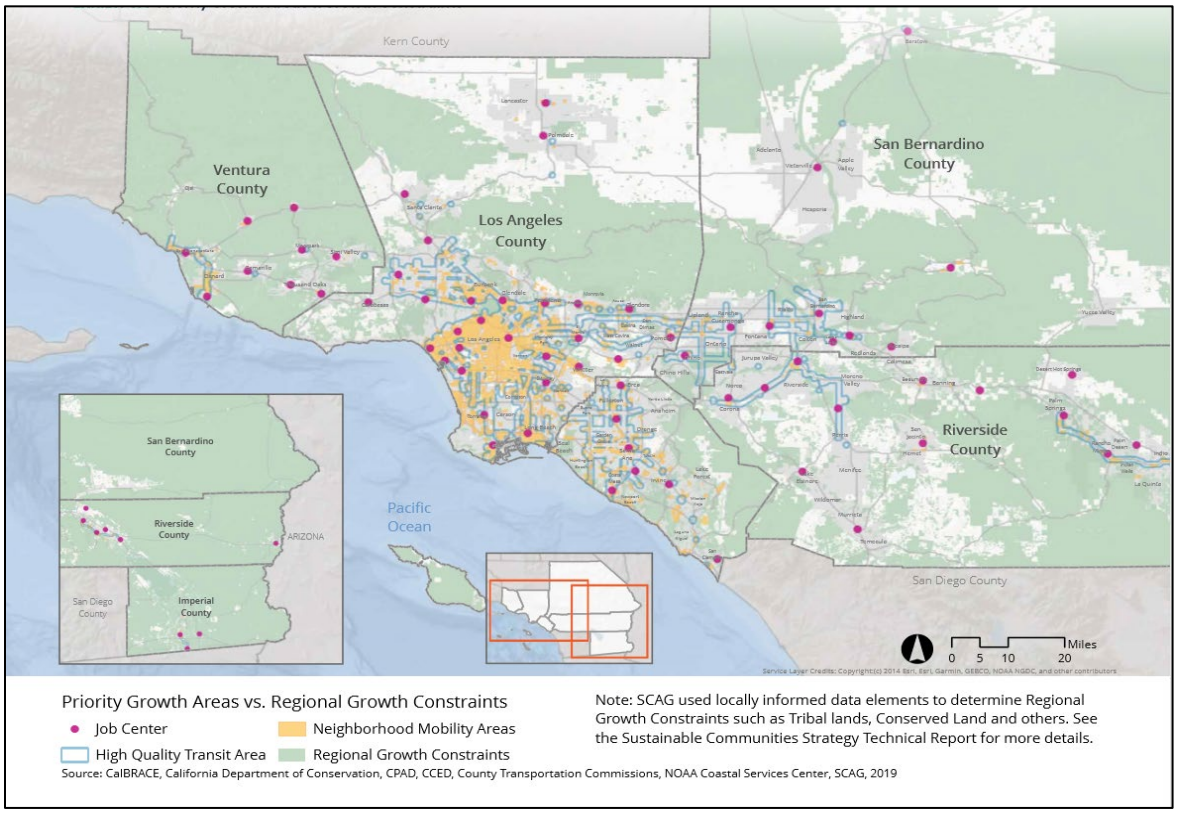
[7] SCAG estimates VMT changes from its land use and housing strategies, along with transportation network changes, and pricing strategies in aggregate using its activity-based travel demand model. SCAG uses these estimates to calculate the change in per capita GHG emissions. Therefore, the percent reduction reflected here represents SCAG's estimated reductions from implementing its land use and housing strategies, along with transportation network changes, and pricing strategies together. CARB is unable to isolate the emissions reductions associated with SCAG's land use and housing strategies only.
[8] This subsection includes information based on the data table and compares demographic and land use indicators from the 2016 base year to 2035.
[9] This bullet point refers to growth comparison tables provided by SCAG.
[10] Priority growth areas are designated areas prioritized for new development based on established criteria (e.g., infrastructure, location, market). These include transit priority areas, high-quality transit areas, livable corridors, neighborhood mobility areas, jobs centers, and spheres of influence.

constrained areas[11], and avoids growth in variable constraint areas[12], where possible[13]. See Figure 1 for locations of priority growth vs. regional growth constraints, or where development is assumed to occur and not occur in the region.

- Assumes 735,919 new housing units and 1,034,810 new jobs are located within a ½-mile of high-quality transit stations[14] (a 35 percent and 29 percent increase, respectively, compared to 2016 levels).

[11] Absolute constrained areas include tribal lands, military, open space, conserved lands, sea level rise areas, and farmlands in unincorporated areas. These areas were identified during the scenario development process to be used during the modeling process to redirect jurisdictional growth into other areas. These are intended to be regional guidelines and do not supersede existing regulations or protections, or local land use policy.
[12] Variable constrained areas included Wildland Urban Interface (WUI), grazing lands, farmlands in incorporated jurisdictions, 500-year flood plains, CalFire Very High Severity Fire Risk, and Natural Lands Conservation Areas. These areas were identified during the scenario development process to be used during the modeling process to redirect jurisdictional growth into other areas when feasible. These are intended to be regional guidelines and do not supersede existing regulations or protections or local land use policy.
[13] SCAG 2020 RTP/SCS, Sustainable Community Strategy Technical Report pages 18-19.
[14] This is an area within a ½-mile of a well-serviced transit stop or a transit corridor with 15-minute or less service frequency during peak commute hours.

Figure 1. Priority Growth Areas vs. Regional Growth



Source: SCAG, 2020 RTP/SCS

Supporting Actions

While MPOs create SCSs that forecast regional growth patterns, local government staff and elected officials have almost exclusive authority over land use decisions relevant to implementing the SCS. Achieving the plan outcomes discussed above will therefore require local government action. Local actions that do not align with regional goals, such as allowing leapfrog development in natural or agricultural areas, and failing to allow enough infill, especially affordable housing and growth in walkable or transit-oriented areas, stifles the Southern California region's ability to implement the plan.

CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed development pattern in the SCS. In particular, CARB staff considered whether the SCS identified region-specific funding or technical assistance programs that support developers and local governments in prioritizing growth in the SCS's preferred growth areas. In addition, CARB staff checked to see how the SCS's assumptions about future housing

unit development within the SCS's preferred growth areas compared against existing local plans, as alignment of regional and local plans is an important first step toward ensuring that future needs can be accommodated.

CARB staff found that the 2020 SCS land use and housing planned outcomes are supported by region-specific funding and planning program actions. In particular, the 2020 SCS carries over a number of positive, well-established programs and commitments to support implementation of the Southern California region's SCS land use and housing strategy. Notable examples include SCAG's technical assistance to help potential applicants compete for the Affordable Housing Sustainable Communities (AHSC) grant program[15], as well as other technical assistance through programs such as Tool Box Tuesdays, where SCAG staff provide a range of practical skills and knowledge for local planners, including training in the use of computer-based tools and education in practical approaches to timely planning issues[16]. Applicants within the SCAG region have received funding from the AHSC grant program to help with the construction of affordable housing. Between 2014 and 2018 there were 36 projects awarded within the SCAG region, totaling over $380 million in funding. These 36 projects will bring an additional 3,665 units of affordable housing in addition to improvements to the surrounding transit, bicycle, and pedestrian infrastructure. SCAG's member agencies will continue to compete for AHSC funding.

The 2020 SCS also identifies that SCAG will provide technical support to local jurisdictions for new pilot projects and will examine and evaluate the viability of tax increment financing tools for local sustainable infrastructure projects and local economies. SCAG has assumed $3 billion in financing[17] available from these value-capture strategies for infrastructure to support housing in transit areas, which is a new supporting action in the region.

To support its assumptions about absolute and constrained areas and other key provisions in the RTP/SCS, SCAG is also working on developing an Open Space and Natural Lands Mitigation Program[18] to continue to engage partners and stakeholders on potential approaches to prioritize open space resources in the SCAG region.

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[15] For more information about Affordable Housing and Sustainable Communities Program.
[16] For more information about Toolbox Tuesdays.
[17] SCAG 2020 RTP/SCS, Transportation Finance Technical Report, page 9.
[18] SCAG Final Overall Work Program Fiscal Year 2020-2021, page 77.

Additionally, SCAG will continue to provide resources to local jurisdictions in the SCAG region for implementing new CEQA transportation impact assessment regulations as mandated by Senate Bill 743[19]. For example, a cooperative effort with the City of Los Angeles focuses on the evaluation of opportunities for developing a regional VMT exchange or banking program as potential VMT mitigation options to benefit local agencies throughout the SCAG region.

Table 2 shows CARB staff's summary of SCAG's 2020 SCS land use and housing strategy commitments and associated supporting actions and investments.

[19] Senate Bill 743 (Steinberg, Chapter 386, Statutes of 2013).

Table 2. SCAG's 2020 SCS Land Use and Housing Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Infill Development	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to increase infill development in priority growth areas. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program[20] to accelerate infill and development near transit. SCAG will also provide technical assistance to local governments, transit agencies and developers within the region to build housing capacity and to compete in the statewide Affordable Housing Sustainable Communities (AHSC) grant program.	Actions Identified[21]: Yes Funding in the RTP/SCS Project List[22]: N/A[23] SCAG Program Funding Available[24]: Yes, SCAG has identified resources to provide funding and technical assistance.

[20] SCAG's Sustainable Communities Program provides resources and direct technical assistance to jurisdictions to complete important local planning efforts and enable implementation of the RTP/SCS. The 2020-2021 Sustainable Communities Program will provide local jurisdictions with multiple opportunities to seek funding and resources to meet the needs of their communities, address recovery and resiliency strategies considering COVID-19, and support regional goals.
[21] Actions identified refers to if SCAG has identified how the SCS strategy will be implemented through actions.
[22] Funding in the RTP/SCS Project List refers to if there are projects and investments in the financially constrained project list that support the SCS strategy.
[23] N/A means not applicable.
[24] SCAG Program Funding Available refers to if SCAG has resources to support the SCS strategy.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Increasing Density Near Transit	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to increase density near transit. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program to accelerate infill and development near transit. SCAG will also provide technical assistance to local governments, transit agencies, and developers within the region to build housing capacity and to compete in the statewide AHSC grant program. SCAG also assumes $3 billion from the formation of Enhanced Infrastructure Financing Districts (EIFD) and the use of tax increment financing for transit-supportive, housing-related infrastructure. SCAG seeks to expand activities to support local agencies in establishing self-help tax-increment financing districts. SCAG also seeks to leverage resources to support local activities that stimulate development near transit and in priority growth areas.	Actions Identified: Yes Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes, SCAG has identified resources to provide funding and technical assistance, however, CARB staff is concerned about the certainty of funding from yet to be created EIFDs and the negative impacts of not obtaining needed funding to achieving reduction associated with the strategy.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Jobs/Housing Balance	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to create jobs/housing balance within the region in order to shorten vehicle trips. SCAG intends to continue to fund local planning efforts through the Sustainable Communities Program to accelerate the shortening of trips through land use strategies. SCAG will also provide technical assistance and host meetings and Toolbox Tuesdays to provide solutions to address jobs/housing imbalances. In order to address jobs/housing imbalances and reduce sprawl, SCAG is working to develop an Open Space and Natural Lands Mitigation Program to encourage conservation measures in the region.	Actions Identified: Yes. However, CARB staff is concerned that SCAG's analysis of growth constraints is not reflected or well-supported by SCAG and its member jurisdictions as it is not well-aligned with local land use policies. Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes, SCAG has identified resources and can provide technical assistance.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Mixed Land Uses	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy seeks to provide a mix of land uses in priority growth areas, where most daily needs can be met within a short distance of home. SCAG intends to continue to fund local planning efforts through its Sustainable Communities Program to accelerate the shortening of trips through land use strategies. SCAG will also provide technical assistance and host meetings and Toolbox Tuesdays to encourage a mix of diverse land uses. SCAG will provide technical and mitigation strategy development guidance to local jurisdictions in the region to facilitate implementation of the VMT-based California Environmental Quality Act (CEQA) transportation impact analysis provisions of SB 743 to help shorten vehicle trips.	Actions Identified: Yes Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research and technical assistance.

In addition to CARB staff's evaluation of strategies and supporting actions, CARB staff also looked for general alignment of regional and local planning assumptions around the location of future housing unit development. CARB staff found that the 2020 SCS forecasted housing units appeared to be generally aligned with General Plan buildout capacities for the region. However, CARB staff was unable to conclude that this was the case because SCAG only provided information on priority growth areas, not all 35 place types identified in the region or at the jurisdictional level. These priority growth areas overlap, so growth totals are unclear. (See "Recommendation" section in this report).

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the land use and housing strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. While there are local plans in place within the SCAG region that support the 2020 SCS housing growth scenario local plan alignment does not guarantee this housing will be built. As shown in CARB's *2018 Progress Report: California's Sustainable Communities and Climate Protection Act*,[25] prepared pursuant to SB 150 (Allen, Chapter 646, Statutes of 2017), local housing planning is mostly compliant with Regional Housing Needs Allocation (RHNA) law, but actual permits issued are lagging, especially for affordable housing. In the four largest regions, according to local jurisdiction reports that were submitted to the California Department of Housing and Development (HCD), most regions are ahead of schedule in issuing permits for housing for the wealthiest "above-moderate-income" households but are falling short in housing that is affordable for households in the three lower-income categories: moderate-income, low-income, and very low-income.

SCAG's process for developing the 2020 SCS includes actions to help address observed shortfalls, however CARB staff finds that these actions rely on funding that has yet to be secured and local measures that have yet to be developed such as EIFDs and growth constraints that limit development in natural and working lands. While some cities, such as Placentia[26] have implemented EIFDs to support streetscape, sewer and water infrastructure improvements and to reduce the cost of housing construction in transit-oriented locations, there is some risk to this action, as EIFDs require local approval and participation in creating these districts in order to generate revenue. The Open Space

[25] CARB, 2018 Progress Report: California's Sustainable Communities and Climate Protection Act. (November 2018).
[26] SCAG, 2020 RTP/SCS, Chapter 3: A Path to Greater Access, Mobility & Sustainability, page 11.

and Natural Lands Mitigation Program, also appears to be in its initial stages and will require local buy-in to implement measures identified in this program. While these actions and assumptions align with addressing the challenges the region faces with getting development in the right places, implementing the actions will require a series of local actions that today have no definite commitments or guarantees. Therefore, CARB staff has concerns as to whether the SCS will achieve its planned outcomes based on the land use and housing strategy commitments identified.

Transportation Infrastructure and Network Strategy Commitments

SCAG has included nine transportation strategies in the 2020 SCS. These strategies seek to complement its land use and housing strategies and focus on increasing non-SOV mode share and reducing driving. The strategies include transportation demand management (TDM), new transit capital projects, improved bike infrastructure, average vehicle ridership (AVR) for job centers, parking deregulation in transit priority areas, co-working, improved pedestrian infrastructure, safe routes to school, and multimodal dedicated lanes. These transportation strategies support SCAG's goals of improving mobility, accessibility, reliability, and travel safety and increasing personal travel and choices within the transportation system. Altogether, SCAG estimates these strategies will contribute to approximately 16.1 percent[27] of its total per capita GHG emission reductions.

SCS Planned Outcomes

These strategies translate into assumptions about changes to the transportation infrastructure and network that will serve the region between 2016 and 2035[28]. Specifically, the plan:

- Increases the region's total transit operational miles by 24 percent compared to 2016.

- More than doubles bike and pedestrian lanes miles compared to 2016.

[27] Transportation strategies are aggregated with other on-model strategies. Only a portion of the reduction would come from transportation strategies.
[28] This subsection includes information based on the data table and compares transportation indicators from the 2016 base year to 2035. It also includes information from Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.

- Increases Freeway/General Purpose lanes (4 percent), Freeway Toll lanes (231 percent), Arterial/Expressways (6 percent), Collector Lanes (5 percent), and decreases Freeway HOV lanes (20 percent) compared to 2016.

- Increases vehicle occupancy[29] to 1.5 at 21 strategically identified jobs centers through additional TDM measures starting in 2035, mainly in Los Angeles and Orange Counties as shown in Table 3.

- Reduces parking for 76,190 multifamily residential households in Transit Priority Areas[30] throughout the region.

- Assumes 40 regional co-working centers[31] will be created and located in strategically identified areas starting in 2025 as shown in Table 4.

- Adds multimodal dedicated lanes starting in 2025 consistent with the Transit Enhanced Network in the City of Los Angeles *Mobility Plan 2035* as shown in Figure 2 .

[29] The average vehicle ridership strategy aims to increase occupancy. Average vehicle ridership is a measure used by South Coast AQMD that is generally calculated as the total trips to a location such as a worksite, divided by the total vehicles arriving at that location.
[30] Transit priority areas are areas within ½-mile of a major transit stop that is existing or planned.
[31] Co-working is an arrangement in which workers of different companies share an office space, allowing cost savings and convenience through the use of common infrastructure, such as equipment, utilities, and custodial services, and in some cases refreshments and parcel acceptance services. Co-working spaces may charge membership dues. An example is WeWork, which has co-working centers in the SCAG region.

Table 3. Assumed Average Vehicle Ridership Job Center Locations in SCAG

Anaheim-Fullerton	Loma Linda	Santa Ana
Culver City	Long Beach	Santa Monica
Downtown Los Angeles	Marina del Rey	Sherman Oaks
Glendale-Burbank	Newport-Mesa	Thousand Oaks-Newbury
Hollywood	North Hollywood	Torrance-Carson
Irvine-Spectrum	Pasadena	San Fernando Valley
LAX	SNA-Irvine	West Los Angeles

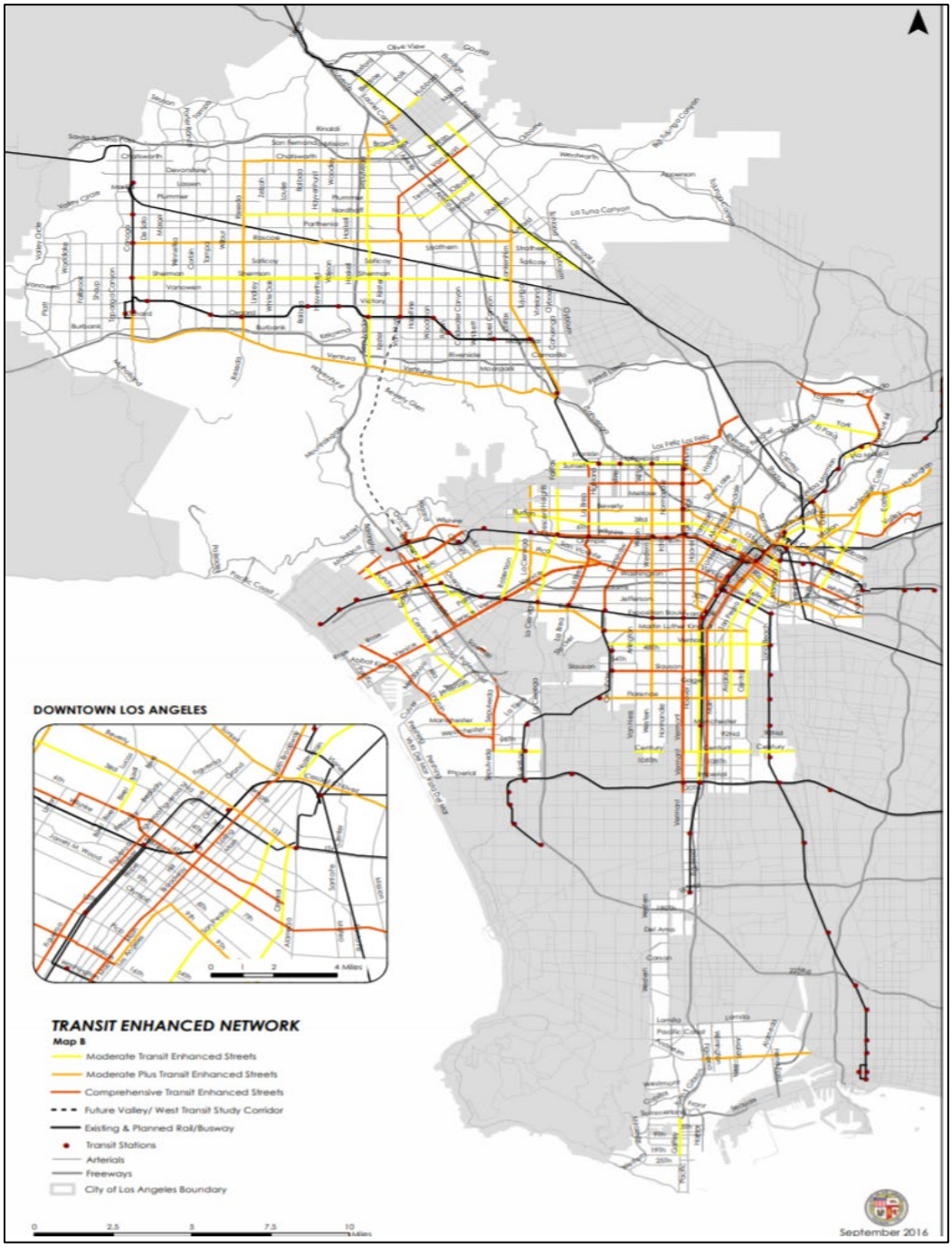
Source: SCAG Submittal to CARB

Table 4. Assumed Key Co-Working Job Center Locations in SCAG

Palmdale	Downtown Riverside	El Monte	Calabasas
Santa Clarita	San Clemente	West Los Angeles	Desert Hot Springs
Lancaster	Chino	Pasadena	Corona
Victorville	Moreno Valley	Pomona	North Hollywood
Lake Elsinore	Downtown Los Angeles	Downey	Newport-Mesa
Anaheim-Fullerton	Long Beach	Slymar	Ventura
Temecula-Murietta	ONT-Rancho Cucamonga	San Bernardino	Glendora
Torrance-Carson	Sherman Oaks	San Pedro	Arcadia
Glendale-Burbank	LAX	Industry-Rowland Heights	Irvine-Spectrum
Fontana	Moorpark	Commerce-Montebello	San Fernando Valley

Source: SCAG Technical Methodology

Figure 2. Enhanced Transit Network in the City of Los Angeles



Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the development of the transportation network in the SCS. CARB staff looked for alignment against the project list adopted with the 2020 SCS, as well as other supporting documents[32] to see whether the actions are planned and funded within the 2035 target timeframe. CARB staff also considered whether SCAG identified other region-specific funding or technical assistance programs to support implementation of its transportation strategies. In addition, CARB staff evaluated the extent to which the projects included in the SCS complement its land use and housing strategies, with a particular focus on capacity-increasing projects that induce travel and therefore increase VMT/GHG emissions.

CARB staff found that the 2020 SCS transportation strategies are supported by region-specific funding and planning program actions, as well as through direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS includes a number of positive project commitments that align with the Southern California region's SCS land use strategy and help advance GHG emission reductions. As part of the project list adopted with SCAG's 2020 SCS, CARB staff found multi-modal projects that are intended to improve transit, bike and walk options in the region by the 2035 target year. Examples include:

- Extension of Section 1 ($2.9 billion) and Section 2 ($2.5 billion) of the Metro Purple Line Westside Subway from Wilshire/La Cienega to Century City and Section 3 to Westwood ($3.9 billion).

- Extension of Phase 2 of the Metro Gold line from its terminus at Atlantic Station in East Los Angeles to Eastern Los Angeles County ($44 million).

- Pedestrian and streetscape enhancements along Market Street from the Los Angeles River to Cherry Avenue in Long Beach, including Class II/IV bike lanes, bulb outs, wayfinding signage, crosswalk and transit stop enhancements,

[32] Other documents include SCAG's Overall Work Program Fiscal 2020-2021, the SCS Strategies Table 2, and other materials submitted by SCAG.

construction of at least four curb ramps, pedestrian lighting, traffic signal installation/upgrades, flashing beacons, landscaping, and street trees ($4.6 million).

- Community linkages to the Hawthorne/Lennox Green Line station in Los Angeles County. The project includes pedestrian and bicycle facility improvements, wayfinding, and landscaping on the major corridors around the station ($3 million).

- A Safe Routes to School Program in the City of Lake Elsinore, in Riverside County, including community pedestrian/bike safety training, walkability workshops, on campus safety campaigns and increased targeted enforcement, and walk/bike to school days. This program would incorporate SCAG's Go Human Campaign[33] ($625,000).

- Transportation Demand Management in Riverside County, including rideshare programs, incentives, vanpool programs (e.g. vanpool lease, asset management, consultants), program outreach, etc. ($16 million).

Table 5 shows CARB staff's summary of SCAG's 2020 SCS transportation strategy commitments and associated supporting actions and investments.

[33] Go Human is a community outreach and advertising campaign with the goals of reducing traffic collisions in Southern California and encouraging people to walk and bike more through education, advocacy, information sharing and events that help residents reenvision their neighborhoods.

Table 5. SCAG's 2020 SCS Transportation Infrastructure and Network Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Transportation Demand Management (TDM)	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy aims to encourage ridesharing, telecommuting, park-and-ride programs, walking, biking, and alternative work schedules. SCAG has planned expenditure of $7.3 billion in the project list for TDM strategies to incentivize drivers to reduce driving and encourage other modes. SCAG had developed a TDM Strategic Plan[34], which identifies new strategies and promote TDM across the region. SCAG will pursue implementation of these strategies in coordination with regional and local partners.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to TDM, about 56 percent or $4.1 billion is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments puts the strategy at risk of not being implemented.

[34] SCAG's Transportation Demand Management (TDM) Strategic Plan provides an objective-driven, performance-based planning framework for identifying TDM strategies and programs that increase the efficiency of the transportation system through alternative modes of travel.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Transportation Demand Management (TDM)	(Continued) Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	In addition, Los Angeles Metro will continue with implementation of AB 2548[35], which authorizes Metro to adopt for Los Angeles County a commute benefit ordinance that requires covered employers to offer all covered employees a pretax option program with transit passes or vanpool charges. The ordinance is projected to start in January 2021.	SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research and technical assistance.

[35] Assembly Bill 2548 (Friedman, Chapter 173, Statutes of 2018).

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
New Transit Capital Projects	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy includes investments in transit to encourage mode shift. SCAG has planned expenditure of about $321 billion (capital, operations and maintenance) in the project list for transit projects including extensions of Metro Gold and Purple lines, new buses, new stops, and other transit improvements. SCAG will continue to support transit primarily through the Regional Transit Technical Advisory Committee. Activities include monitoring and implementing Federal Transit Administration rule-making; assessing causes of transit ridership decline in the region; participating in regional, state, and federal transit studies and forums; researching pilot programs to incorporate new technology and mobility innovations into the delivery of transit services; and monitoring and reporting on regional transit system performance.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to transit, about 51 percent of transit funding, or $163.5 billion, is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments does not support the target. SCAG Program Funding Available: Yes SCAG has existing resources to provide funding, research and technical assistance.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Improved Bike Infrastructure	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy includes investments in bike infrastructure to encourage mode shift. SCAG has planned expenditure of $17.7 billion in the project list for capital active transportation including Class I, Class II, Class III, and Class IV bike facilities, bike signage, bicycle parking, and other improvements. SCAG will host workshops and web-based planning tools for local governments to encourage active transportation use. SCAG also provides support and guidance to local agencies in the delivery of projects as part of the California Active Transportation Program. SCAG will also continue to manage the Regional Active Transportation Program, including providing technical assistance to project sponsors, managing planning and program grants, tracking project delivery, and preparing program amendments, as necessary. SCAG will provide leadership and input at the state and regional level to ensure California's Active Transportation Program future funding cycles align with regional planning goals.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to active transportation, about 54 percent of the active transportation funding or $9.5 billion is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments does not support the target.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Improved Bike Infrastructure	(Continued) Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	Through continued collaboration with the California Transportation Commission, Caltrans and the Southern California regional transportation planning agencies, SCAG will also work to improve the application and allocation procedures for funding. Additionally, SCAG's Go Human campaign and planning resources, like the Regional High Injury Network[36] encourage safety and biking and walking in the region.	SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research, outreach, and technical assistance.

[36] Regional High Injury Network identifies stretches of roadways where the highest concentrations of collisions occur on the transportation network, including bicycle and pedestrian injuries and fatalities. This tool can help target resources where they are needed most.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Average Vehicle Ridership for Job Centers	-0.64%	This strategy assumes increases in average vehicle ridership at 21 strategically identified jobs centers through additional TDM measures, which would increases vehicle occupancy to 1.5 starting in 2035, mainly in Los Angeles and Orange Counties. SCAG has planned expenditure of $7.3 billion in the project list for TDM strategies to incentivize drivers to reduce driving and encourage other modes. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. Implementation of this strategy is supported by recommendations in SCAG's TDM Strategic Plan, including the development of regional TDM performance metrics and data collection/reporting standards, and support for the development of Transportation Management Agencies/Organizations (TMAs/TMOs), which offer alternatives to driving alone and encourage TDM strategy implementation.	Actions Identified: Somewhat While SCAG has identified actions, it is unclear how the 21 jobs centers and the private sector employers within them will participate at the assumed levels and how this strategy is different from, and beyond, SCAG's TDM strategy. Funding in the RTP/SCS Project List: Yes

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Average Vehicle Ridership for Job Centers	(Continued) -0.64%	Performance monitoring and reporting with respect to TDM implementation and outcomes is an ongoing challenge. The TDM Strategic Plan recommends action steps for improving performance measurement in the SCAG region, including the development of a regional clearinghouse for TDM data and the development of formalized metrics and regional data standards, such as those set in Rule 2202[37]. TDM programs and incentives would vary by location reflecting the local context and be driven in part by private sector involvement and provision of direct incentives through the TMA/TMO. Identification of context-sensitive TDM strategies would be facilitated through regional training and planning support that could be provided by SCAG in coordination with local jurisdictions, and through partnerships with non-profit and private sector organizations. The development of TMAs/TMOs may also facilitate implementation tracking through improved monitoring and reporting.	SCAG Program Funding Available: Somewhat. SCAG did not identify a specific amount of funding available from the pricing strategies, but SCAG has existing resources to provide funding, research and technical assistance. However, funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.

[37] South Coast AQMD requires compliance with Rule 2202, which is designed to reduce mobile source emissions from employee commutes through a menu of emission reduction strategies, such as TDM.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Parking Deregulation in Transit Priority Areas	-0.43%	This strategy supports local jurisdictions eliminating parking minimums in Transit Priority Areas between 2025 through 2045. SCAG assumes that with this strategy 39% households (76,190 multi-family residential households) will have zero vehicles in 2035 and will be zero-VMT households. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG has stated that support will occur through grant programs to local jurisdictions that allow for the development and adoption of parking deregulation strategies/ordinances that are informed by community feedback. Through SCAG's grant programs in the past, innovative parking strategies along these lines have been formulated and evaluated by the City of Long Beach and the City of Los Angeles. The City of Santa Monica has adopted parking deregulation policies in 2017 with the adoption of its Downtown Community Plan.	Actions Identified: Yes. While SCAG has identified actions, CARB staff is concerned that the assumption of zero-vehicle households are zero-VMT households is not supported by empirical data. Furthermore, communities may not implement this strategy since they might receive pushback over loss of parking. Funding in the RTP/SCS Project List: N/A

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Parking Deregulation in Transit Priority Areas	(Continued) -0.43%	(Continued)	SCAG Program Funding Available: Somewhat. SCAG did not identify a specific amount of funding available from the pricing strategies, but SCAG has provided funding in the past for supportive research and technical assistance. However, future funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Co-Working	-0.14%	This strategy assumes 40 regional co-working centers will be created and located in strategically identified areas starting in 2025. SCAG assumes that existing long-range commuters (i.e., longer than 100 miles) who do not participate in an existing telecommute program, will have an opportunity to co-work for two days a week. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG intends to sponsor 40 co-working centers across the region. In collaboration with local partners and private-sector co-working space providers, this would involve promoting the establishment of co-working sites in these key areas.	Actions Identified: Yes. While SCAG has identified actions, CARB staff is concerned that SCAG did not include an existing participation rate based on local data Furthermore, communities may not implement this strategy at the assumed locations or at the assumed level. Funding in the RTP/SCS Project List: N/A

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Co-Working	(Continued) -0.14%	In addition to technical support for city-led proposals and efforts to identify opportunities for establishing sites in the 40 locations, SCAG will provide financial incentives to known co-working site providers, in addition to connectivity improvements such as 5G and additional co-working services/amenities in public spaces such as libraries, which can also function as co-working sites. The new program would be modeled off SCAG's existing Future Communities Pilot Program, which also combines multiple funding sources and evaluates city-led proposals based on potential VMT savings. Implementation would be coupled with monitoring to track the extent of trip substitution arising from the use of co-working centers.	SCAG Program Funding Available: Somewhat. SCAG did not identify specific amount of funding available from the pricing strategies, but SCAG is developing a new program to support this strategy. However, future funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Improve Pedestrian Infrastructure	-0.10%	This strategy supports the installation of pedestrian facilities to support safe conditions for walking. SCAG has planned expenditure of $17.7 billion in the project list for capital active transportation projects, a portion of which includes pedestrian infrastructure such as sidewalks, bulb-outs[38], ADA ramps[39], etc. SCAG will hold workshops and web-based planning tools for local governments to encourage active transportation use. SCAG also provides support and guidance to local agencies in the delivery of projects as part of the California Active Transportation Program. SCAG will also continue to manage the Regional Active Transportation Program, including providing technical assistance to project sponsors, managing planning and program grants, tracking project delivery, and preparing program amendments, as necessary. SCAG will provide leadership and input at the state and regional level to ensure future California's Active Transportation Program funding cycles align with regional planning goals.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes. While SCAG has dedicated funding to active transportation, about 54 percent of active transportation funding or $9.5 billion is planned for expenditure after the 2035 target year. CARB staff is concerned that back loading these investments does not support the target.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Improve Pedestrian Infrastructure	(Continued) -0.10%	Through continued collaboration with the California Transportation Commission, Caltrans and the Southern California regional transportation planning agencies, SCAG will also work to improve the application and allocation procedures. Additionally, SCAG's Go Human campaign and planning resources, like the Regional High Injury Network, encourage safety and walking and biking in the region.	SCAG Program Funding Available: Yes. SCAG has existing resources to provide funding, research, outreach, and technical assistance.

[38] Bulb-outs also known as curb-extensions are traffic-calming measures that widen the sidewalk for a short distance typically at intersections or mid-block. These reduce pedestrian crossing distances and improve visibility.
[39] ADA ramps are curb ramps that meet the American with Disability Act requirements.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Safe Routes to School	-0.20%	The Safe Routes to School (SRTS) strategy is an approach to reduce the number of single-occupant vehicle trips to schools and to shorten school commute trips. The SRTS strategy includes a combination of both infrastructure investments, as well as programs that encourage kids to bike and walk to school instead of being driven. SCAG has planned expenditure of $193 billion in the project list for infrastructure to schools and community education and safety training programs. SCAG funds and manages the Go Human advertising campaigns to encourage the public to walk and bicycle more and the demonstration of new infrastructure to get communities excited about changing their streets. Through continuing Office of Traffic Safety (OTS) grant funding, SCAG will direct investments that will include state and federal grants for SRTS plans and programs at the local level. SCAG recently completed a call for applications for community-based mini-grants, and has confirmed funding to conduct another program during the next cycle. Additional OTS funding will be committed to other locally based programs that further implementation of SRTS strategies at the local level.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes. SCAG has established programs and funding. CARB encourages SCAG to more closely track the development of SRTS plans and programs and how these result in mode shift.

SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Multimodal Dedicated Lanes	-0.40%	This strategy involves the conversion of auto traffic lanes to dedicated lanes for transit. SCAG assumes these lanes will be in place based on the Enhanced Transit Network in the City of Los Angeles Mobility Plan 2035, which is an element of Los Angeles' General Plan. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. The City of Los Angeles has made commitments to improve transit corridor performance in February 2020 through the Mayor's Executive Directive 25, which calls for a network of bus infrastructure improvements and priority infrastructure, including bus-only lanes. Additionally the City of Los Angeles continues to support LA Metro with NextGen implementation.	Actions Identified: Yes Funding in the RTP/SCS Project List: No SCAG Program Funding Available: Somewhat. While the City of Los Angeles has taken important steps to support implementation of this strategy, these dedicated lanes are conceptual and have not gone through public and environmental review or the design and engineering process and are not currently in the project list.

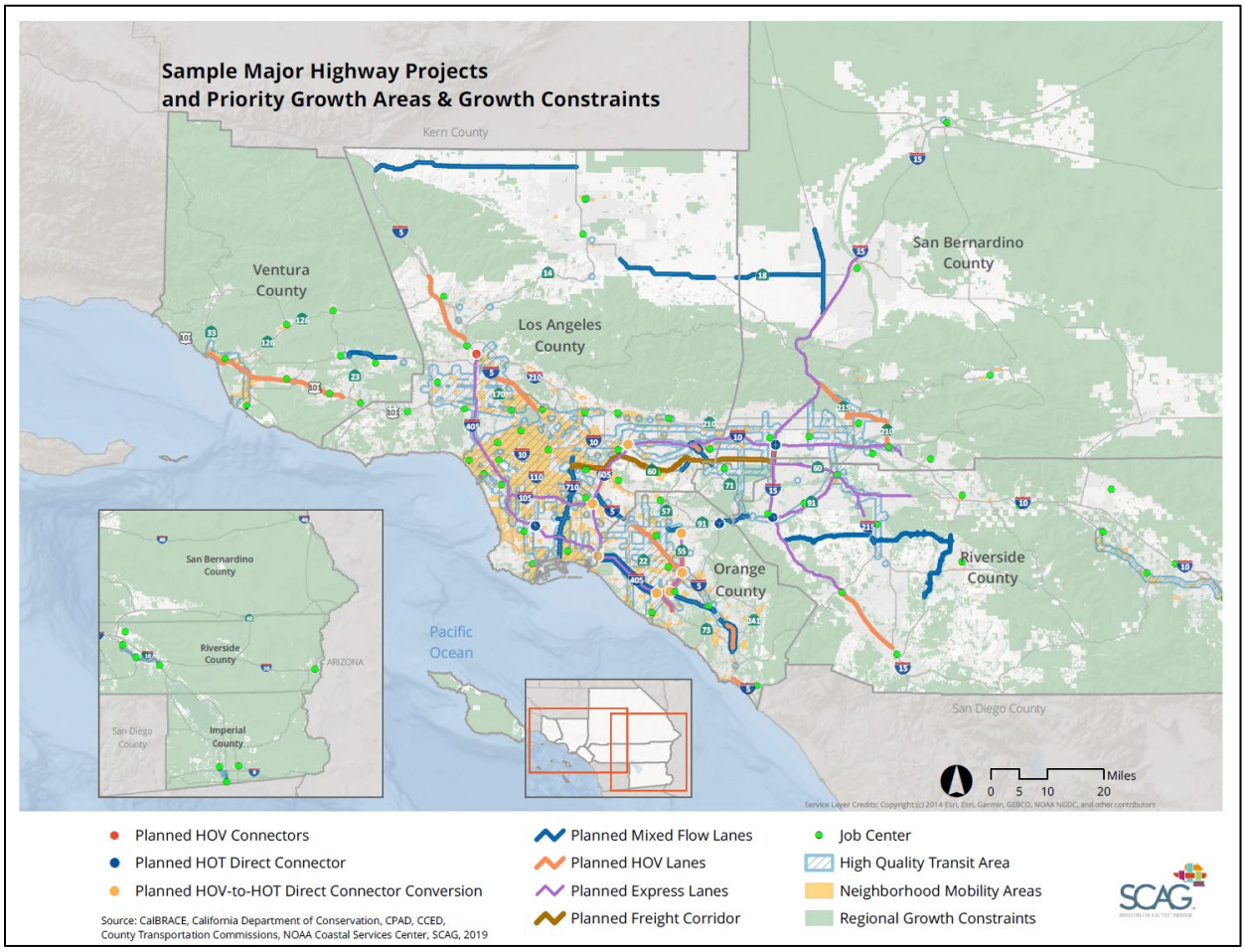
SCAG's SCS Strategies	Estimated GHG Emission Reductions in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Multimodal Dedicated Lanes	(Continued) -0.40%	NextGen is LA Metro's plan to redesign its bus network to better meet the needs of current and future riders. The LA Metro Board in January 2020 approved $1 billion in transit-supportive capital infrastructure to improve speed and reliability, including dedicated bus lanes. City of Los Angeles and LA Metro staff have formed a Bus Speed Engineering Working Group to identify a priority list of bus-supportive infrastructure projects. As a result, bus lanes on 5th and 6th Streets in Downtown Los Angeles are currently under development with anticipated implementation by the end of calendar year 2020.	While local funding may be available, other funding sources have not yet been secured. CARB staff is concerned that funding will come from pricing strategies, which is extremely uncertain. because of the need for legislative changes and local buy-in. CARB staff advises SCAG to only include these projects when they have gone through the appropriate review process, have secured funding to be included in the RTP project list, and can be reflected in the travel demand model.

In addition to CARB staff's evaluation of the strategies and supporting actions, CARB staff evaluated the extent to which capacity-increasing projects that induce travel and therefore increase VMT/GHG emissions were present. CARB staff found that the 2020 SCS includes hundreds of millions of dollars in funding for roadway capacity expansion projects that are counter to region's adopted SCS land use and housing strategy. These include local roadway capacity projects and new mixed-flow lanes on highway segments in San Bernardino County, in the Lancaster/Palmdale area near the Los Angeles/Kern County line, and in Riverside County.

Figure 3. shows a sample of major highway projects[40] in the region overlaid on SCAG's priority and constraint areas. This figure was prepared by SCAG at CARB's request and combines information across different figures shown in the 2020 SCS and shows that there are major highway projects planned to occur where growth is not envisioned in the plan. Capacity expansion projects, especially those that are counter to the long-term vision for accommodating new growth, increase VMT and work against achieving the State's climate and air quality goals.[41]

[40] A sample means some of the major highway projects listed in the 2020 RTP/SCS project list. SCAG selected and depicted these sample projects in the 2020 RTP/SCS.
[41] CARB. Highway Capacity and Induced Travel Brief. (September 2014).

Figure 3. Sample of Major Highway Projects Overlaid on Priority Growth Areas and Growth Constraints in SCAG



Source: SCAG

As part of its SCS submittal, SCAG conducted an analysis of the anticipated long-term effects on VMT due to the roadway capacity expansion projects within the SCS by applying off-model adjustments using the Induced Travel Calculator developed by UC Davis.[42] This analysis included interstate freeways, other freeways, expressways and arterial roads, but excluded toll roads/lanes. Based on this analysis, SCAG estimated

[42] UC Davis, Induced Travel Calculator. (September 2019).

that altogether these types of roadway projects would increase the region's GHG emissions by 0.56 percent in 2035, or about 2.96 million VMT per day.[43] SCAG included these forecasted VMT increases as part of its overall 2020 SCS emissions estimate and determined that it will still be able to meet its SB 375 GHG reduction target, when implemented. CARB staff reviewed SCAG's approach to capturing the short-and long-term VMT/GHG impacts of its 2020 SCS roadway capacity expansion projects and found them to be reasonable in the context of aggregate impacts on SCS performance. However, for the next SCS, SCAG should evaluate and discuss the VMT impacts of individual capacity projects in comparison with the aggregate analysis used for the SCS. Results of this effort could be used to further refine how SCAG assesses the VMT impacts of capacity projects on its SCS. Future regional target setting for 2035 should consider whether a more aggressive target is appropriate if the 19 percent target is achievable even with such massive increases in VMT over that period.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the transportation strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. SCAG's SCS backloads billions of dollars in funding for transit and active transportation projects to the 2031 to 2035 and 2036 to 2045 timeframes (see discussion in "Investment Analysis" section of this report). CARB staff is especially concerned with the region's ability to fund and deliver the transit and active transportation projects that are needed to support the 2020 SCS planned outcomes. Support for transit and active transportation projects is important given the fact that the region wants to overcome recent declines in transit ridership and increase transit ridership in the region by 24 percent and double bike and pedestrian lane miles compared to its 2016 level. Delays or removals of transit and active transportation projects will prevent SCAG from meeting its regional targets.

CARB staff is also concerned that SCAG's 2020 SCS is estimated to only just achieve the GHG emission reduction targets, while many of the strategies identified have a high risk of not being implemented. The inclusion of roadway capacity-increasing projects that increase VMT and GHGs could further jeopardize the region's target attainment. SCAG will need to be vigilant about monitoring implementation and deployment levels of

[43] Through induced travel, or increases in travel due to changes in residence and workplace locations, whereas changes in the number of trips and trip distances (destination changes); shifts in travel modes, the time-of-day travel occurs, and routes are all captured as part of SCAG's ABM.

strategies, including how projects are prioritized, through 2035 to ensure planned reductions and SB 375 goals are achieved.

Local and Regional Pricing Strategy Commitments

SCAG has included four pricing strategies in the 2020 SCS. These strategies include congestion pricing, job center parking, mileage-based user fees/TNC user fees, and express lanes pricing. These strategies seek to put a price on driving in the region in the following ways:

- Charging a fee to operate vehicles in designated areas, roads, or highway corridors.
- Charging a fee to park in job centers.
- Charging a fee based on auto ownership and mileage driven on the region's road network.
- Charging TNC users a fee based on mileage of their TNC trip.
- Charging a fee based on use of express toll lanes.

These strategies are projected to decrease driving and congestion, increase transit, walking, and biking, and improve the road/highway condition. These strategies also generate revenue through fees for the transportation system, including other transportation and new mobility strategies in the SCS. SCAG estimates these strategies will contribute to approximately 14.2 percent[44] of its total per capita GHG emission reductions.

[44] Pricing strategies are aggregated with other on-model strategies. Only a portion of the reduction would come from pricing strategies.

SCS Planned Outcomes

These strategies translate into assumptions about changes to the cost of transportation options, specifically, the cost to drivers for use of the roadway network in the region between 2016 and 2035[45]. Specifically, the plan assumes:

- Starting in 2021, decreased congestion and increased transit, walking, and biking through a region-wide TNC user fee of 5 cents per mile. This is part of the mileage-based user fee.

- Starting in 2024, decreased congestion and roadway travel with dynamic express lanes that charge rate of $0 to $2.65 dollars per mile for passenger vehicles utilizing express lanes. An increase in the number of express toll lanes from 414 lane miles today to 1,370 lane miles by 2035, a 231 percent increase. The planned express lanes throughout the region are shown in Figure 4 and would operate in Los Angeles, Orange, Riverside, and San Bernardino counties starting in 2024.

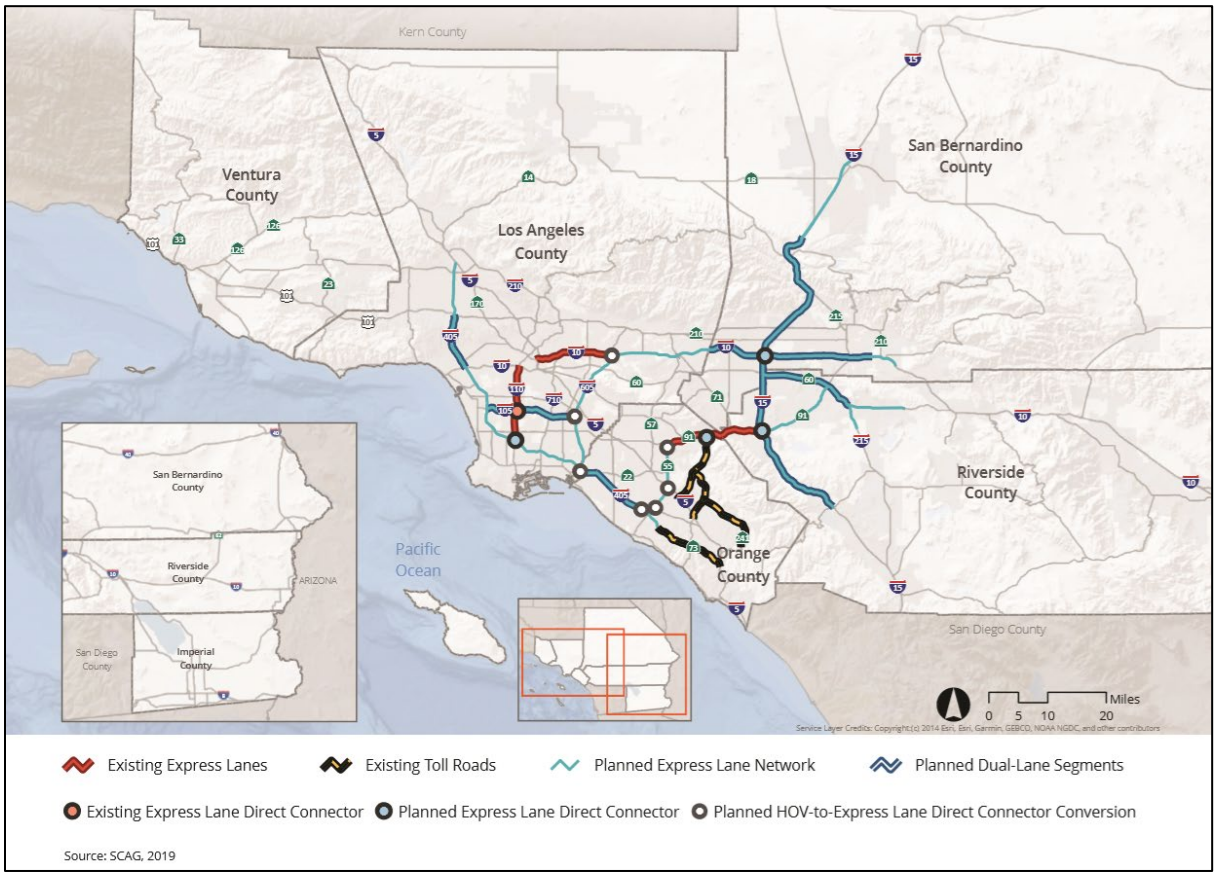
- Starting, in 2030, decreased congestion and increased transit, walking, and biking through a congestion pricing fee of $4 dollars[46] per entry in parts of Los Angeles County between Downtown Los Angeles and West Los Angeles starting as shown in Figure 5.

  Starting in 2025, decreased driving and increased transit, walking and biking by increasing parking pricing by 50 percent in 16 strategic job centers as shown in Table 6.

[45] This subsection includes information based on the data table and compares transportation indicators from the 2016 base year to 2035. Fee information and timeframe assumptions were taken from the data table and the 2020 RTP/SCS Chapter 4: Paying Our Way Forward and the Transportation Finance Technical Report.
[46] This bullet relies of data from SCAG's Model Sensitivity Test report, page 21.

- Starting in 2030, decreased overall roadway travel demand and increased transit, walking, and biking, with a new region-wide per-mile fee for drivers of 1.5 cents per mile[47].

Figure 4. Planned Regional Express Lane Network in SCAG



Source: SCAG, 2020 RTP/SCS

[47] The mileage-based user fee consists of three components, which are reflected in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions): $0.025 per mile is to replace gas taxes from 2030 (and therefore not included as an SCS strategy); $0.015 per mile as regional VMT fee from 2030; and $0.05 per mile as TNC user fee. In the activity-based modeling 1% (i.e., $0.005) of TNC user fee is applied to all VMT in the region in order to capture the proportional TNC population.

Table 6. Assumed Strategic Job Center Parking Pricing Locations

Downtown Los Angeles	Irvine-Spectrum	Loma Linda	North Hollywood
West Los Angeles	Anaheim-Fullerton	San Fernando Valley	Newport-Mesa
Pasadena	Long Beach	Torrance-Carson	Thousand Oaks-Newbury
SNA-Irvine	Glendale-Burbank	LAX	Sherman Oaks

Source: SCAG Submittal to CARB

Figure 5. Congestion Pricing Boundaries (Go Zone)

Source: SCAG, Mobility GO Zone & Pricing Feasibility Study

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed local and regional pricing strategies in the SCS. In particular, CARB staff looked for alignment against the project list adopted with the 2020 SCS to see whether the actions are planned and funded within the target timeframe. CARB staff also considered whether SCAG identified other region-specific funding or programs to support implementation of its pricing strategies. In addition, CARB staff looked for whether and how SCAG considered equity, which is a key implementation concern for pricing strategies.

CARB staff found that the 2020 SCS local and regional pricing assumptions are supported by some region-specific funding and planning program actions, as well as through some direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS project list includes some express lane corridor projects for funding by 2035 that SCAG assumed when quantifying the SCS's GHG benefits in 2035. The SCS also identifies some initial supporting actions to further support its pricing strategies. One action is to work with Caltrans and other local partners to identify options for governance and administration of revenues from facility-based pricing. Another action is to work with regional partners to develop pilot programs and pursue funding for piloting roadway pricing mechanisms, such as facility-based pricing (e.g., congestion pricing) and mileage-based fees, in partnership with the State, federal, and local agencies, and private sector organizations. SCAG also recently applied, in partnership with SACOG and SANDAG, for a Caltrans planning grant to design a pricing pilot.

Table 7 shows CARB staff's summary of SCAG's 2020 SCS local and regional pricing strategy commitments and associated supporting action and investments.

Table 7. SCAG's 2020 SCS Local and Regional Pricing Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Congestion Pricing	Strategy contributes an unknown amount to the total -14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy assumes a local road charge program of $4 dollar entry fee starting in 2030 in parts of Los Angeles County between Downtown Los Angeles and West Los Angeles. SCAG assumes $77.8 billion will be generated from this program. In 2019, SCAG prepared a Mobility Go Zone and Pricing Feasibility Study[48] to understand how cordon congestion pricing could be structured. SCAG continues to collaborate with local jurisdictions and LA Metro, community-based organizations (CBOs), business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. SCAG applied as an applicant for a Caltrans Sustainable Transportation Planning grant with SACOG and SANDAG to pilot roadway pricing mechanisms, however this bid was not successful.	Actions Identified: Yes. SCAG has made some initial steps to plan and analyze congestion pricing. However, CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires state enabling legislation and local support. Funding in the RTP/SCS Project List: No

[48] For more information about Mobility Go Zone and Pricing Feasibility Study.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Congestion Pricing	(Continued) - Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	(Continued)	SCAG Program Funding Available: Somewhat. SCAG can provide funding, research and technical assistance, however, CARB is concerned that if this strategy is not implemented, SCAG's funding gap may not be filled and the implementation of other RTP/SCS strategies may be at risk. Additionally, more work needs to be done around program development and implementation, specifically around fee collection, revenue allocation, and equity considerations.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Job Center Parking	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy assumes a 50 percent increase in parking pricing in 16 regional jobs centers. SCAG assumes $77.8 billion will be generated from the local road charge program, a portion of which will come from the job center parking pricing. SCAG assumes increases in parking costs starting in 2025. SCAG will work with local jurisdictions in evaluating opportunities to implement parking pricing strategies for their job centers, and it has already initiated a data collection effort to better understand parking costs and utilization rates	Actions Identified: Yes. CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires local and private support and buy-in from stakeholders and the public regarding parking pricing, which makes it unclear whether implementation would reach assumed levels. Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Somewhat. SCAG has funded and completed some research and coordination with local jurisdictions, but it is unclear how much of these efforts have resulted in changes to parking pricing.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Mileage-Based User Fee/TNC User Fee	Strategy contributes an unknown amount to the total - 14.2% reduction from all on model strategies. Specific proportion not provided.	This strategy assumes fees on driving and includes a mileage based-user fee and a TNC user fee region-wide. For funding purposes, SCAG assumed a 4 cent mileage-based use fee, which includes a 2.5 cents per mile will be in place to replace the gas tax and a 1.5 cent fee per mile starting in 2030. The mileage base user fee is projected to generate $42.7 billion. SCAG also assumes a TNC user fee at about 5 cents per mile starting in 2021. SCAG assumes this program would generate $4.7 billion. SCAG, in collaboration with stakeholders, will pursue actions related to demonstrations and eventual full deployment of a mileage-based user fee system through research and evaluation of implementation cost and administrative methods for fee collection and revenue allocation. SCAG will work to engage communities to better understand equity concerns and explore opportunities for appropriate mitigations including exemptions and credits, as applicable. SCAG is an active member of the Mileage-Based User Fee Alliance (MBUFA).	Actions Identified: Yes. CARB staff is concerned that this program will not be implemented within the identified timeframe because this strategy requires congressional and state enabling legislation and local action. Funding in the RTP/SCS Project List: N/A SCAG Program Funding Available: Somewhat. SCAG has funded and completed research and has coordinated with stakeholders. CARB staff is concerned that if this strategy is not implemented, SCAG's funding gap may not be filled and the implementation of other RTP/SCS strategies may be at risk.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Mileage-Based User Fee/TNC User Fee	(Continued) Strategy contributes an unknown amount to the total - 14.2% reduction from all on model strategies. Specific proportion not provided.	As a member of MBUFA, SCAG has participated in and hosted meetings and shared findings from research studies. SCAG completed a legislatively-mandated live pilot demonstration in 2017 and has continued to support and coordinate with Caltrans on other efforts to explore the feasibility of road charges through a pay-at-the-pump demonstration program. LA Metro is also currently exploring a TNC fee.	Additionally, more work needs to be done around program development and implementation, specifically around fee collection, and revenue allocation, and equity considerations.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Express Lane Pricing	Strategy contributes an unknown amount to the total - 14.2% reduction from all on-model strategies. Specific proportion not provided.	This strategy includes investment in express lanes where drivers pay a toll to drive in these lanes. SCAG has planned expenditure of $13.4 billion to high-occupancy vehicles/express lanes in the project list. SCAG assumes express lanes will generate $32.7 billion in revenue. The project list builds on the implementation of the I-10 and I-110 Express Lanes in Los Angeles County and the recent extension of the SR-91 Express Lanes between Orange and Riverside counties. Implementation efforts underway include planned express lanes on I-105 in Los Angeles County, I-15 in Riverside County, I-15 and I-10 in San Bernardino County, and I-405 in Orange County and Los Angeles County. SCAG anticipates continued work with the region's county transportation commissions and Caltrans to further the regional express lane network with an update of SCAG's Regional Concept of Operations (ConOps). SCAG is currently in the process of reconvening its Regional Express Lanes Working Group to oversee updates to the Regional ConOps.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes, SCAG can provide funding, research and technical assistance.

In addition to its evaluation of the strategies and supporting actions, CARB staff's also looked for whether and how SCAG considered equity when developing its pricing strategies. CARB staff found that SCAG continues to collaborate with local jurisdictions and LA Metro, CBOs, business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. This included hosting a series of listening sessions to understand the concerns of environmental justice communities and to inform recommendations for an equity-focused outreach strategy.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the local pricing strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. CARB staff acknowledges the significant leadership and partnership work needed to realize the 2020 SCS pricing strategies. CARB staff are concerned that the strategy deployment assumptions for these strategies rely on programs and partnerships outside of SCAG's control, including local jurisdictions and private companies that do not have existing authority, ordinances, or programs in place to impose fees and parking pricing. Supporting actions that more squarely address these implementation steps need to be identified and implemented to achieve the emission reductions assumed in the 2020 SCS. SCAG will need to demonstrate further progress to implement these strategies by its next plan cycle for SCAG to continue receiving the full amount of GHG emission reductions assumed.

Electric Vehicle and New Mobility Strategy Commitments

SCAG has included five strategies related to electric vehicles (EV) and new mobility services, which include EV charging infrastructure, EV incentive programs, transit/TNC partnerships, bike share and micromobility, and car share. These strategies seek to accelerate the penetration of EVs in the region by providing infrastructure and incentives to help drivers switch to using EVs, supporting first-last mile partnerships to transit, and supporting shared fleets. The strategies are intended to support SCAG's goal of leveraging new transportation technologies and data-driven solutions to result in more efficient travel. These strategies will result in a total of 2.5 percent reduction in per capita GHG emissions.

SCS Planned Outcomes

These strategies translate into assumptions about the availability of EV-supportive infrastructure and incentives, transit/TNC partnerships, and new mobility fleets that will serve the region between 2016 and 2035[49]. Specifically, the plan assumes:

- 58,423 new EV charging connectors between 2020 to 2035 for a total of 68,571 region-wide to support electric vehicles in SCAG.
- Funding for subsidies and rebates for 100,000 purchases of new EVs between 2030 to 2035.
- Deployment of a transit/TNC partnership program around all Los Angeles Metro Rail and Bus Rapid Transit (BRT) stations in Los Angeles County between 2030 to 2035.
- Deployment of 167,176 bikes and scooters around all Transit Priority Areas and transit stations between 2020 to 2035.
- 150,000 residents participate in car share programs throughout all Neighborhood Mobility Areas[50] in 2035.

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed availability of EV-supportive infrastructure, EVs, and other new mobility services in the SCS. CARB staff looked for alignment against the project list adopted with the 2020 SCS to see whether the actions are planned and funded within the target timeframe. CARB staff also considered whether SCAG identified other

[49] This subsection includes information-based assumptions from SCAG's Technical Methodology, Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.
[50] Neighborhood Mobility Areas are areas with a high number of intersections, low observed travel speed, high mix of uses and high accessibility to "everyday" destinations. These are areas where complete streets and sustainability policies support and encourage replacing or reducing automobile use with other modes.

region-specific funding or technical assistance programs to support implementation of its EV and new mobility strategies.

CARB staff found that SCAG'S 2020 SCS EV and new mobility strategy assumptions are supported by some region-specific funding and planning program actions, as well as through some direct investments in the project list adopted with the 2020 SCS. In particular, the 2020 SCS project list includes EV infrastructure installation projects that are expected to be completed by 2035. In addition, SCAG's 2020 SCS carries over actions and programs from the 2016 SCS in support of EV charging, infrastructure and innovative education programs to support its new mobility strategies. These include the SCAG Electric Vehicle Program[51] and Department of Energy-designated Clean Cities Coalition[52] to accelerate the deployment of EV charging infrastructure. SCAG has and will continue to host events and create programming to help inform stakeholders in the region about new mobility.

Table 8 shows CARB staff's summary of SCAG's 2020 SCS EV and new mobility strategy commitments and associated supporting actions and investments.

[51] For more information about Electric Vehicle Program.
[52] For more information about Clean Cities Coalition.

Table 8. SCAG's 2020 SCS EV and New Mobility Strategy Commitments and Supporting Actions

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Electric Vehicle Charging Infrastructure	-1.16%	This strategy supports increasing the number of EV charging stations to encourage adoption of EVs. SCAG assumes 58,423 new charging connectors will be implemented between 2020 to 2035 for a total of 68,571 region-wide to EVs. SCAG assumes that 100% of EVs in the region will have access to a charger and drive 13 electric miles a day. The project list includes $300 million for a Regional PEV Charger Program to provide charging infrastructure. In addition, SCAG has allocated $584,803 for its EV Readiness Program, which includes $400,000 to conduct an Electric Vehicle Charging Station Study. SCAG is working with local jurisdictions to accelerate the deployment of EV charging infrastructure through its Electric Vehicle Program[53] and the Department of Energy-designated Clean Cities Coalition. SCAG will continue to host	Actions Identified: Yes. however, CARB staff found SCAG's assumptions that 100% of the EVs in the region will have access to a charger and will drive 13 miles on electricity a day to be aggressive. SCAG provided limited EV infrastructure location information and travel behavior data in the SCS, and CARB staff could not verify these assumptions. CARB staff recommends that SCAG collect local EV usage data and provide necessary policy commitments to support these assumptions, or refine the existing assumption to be more conservative.

[53] The EV Readiness Program seeks to prepare the Southern California region for EVs through plans, tools, and technical assistance.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Electric Vehicle Charging Infrastructure	(Continued) -1.16%	events and create programming to help inform stakeholders in the region about zero-emission vehicles and their supporting infrastructure. SCAG previously conducted a survey of all jurisdictions in the region to assess compliance with AB 1236[54], a bill that requires jurisdictions to streamline permitting for public charging stations. SCAG also created a Plug-In Electric Vehicle online mapping tool to help support charging siting decisions. SCAG plans to continue updating the tool. SCAG is currently funding a project that would create an electric vehicle charging station site suitability analysis for the region and create tailored plans and outreach to help 18 large and small jurisdictions in the region prepare for more charging. The results from the site suitability analysis are intended to be hosted on the Plug-In Electric Vehicle online mapping tool so they will be accessible to the public. The project is anticipated to start in Fall 2020.	Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Yes. SCAG has allocated funding for its EV Readiness Program and Electric Vehicle Charging Station Study. SCAG also continues to invest in local EV charging tools to support siting decisions.

[54] Assembly Bill 1236 (Chiu, Chapter 598, Statutes of 2015).

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Electric Vehicle Incentives	-0.60%	This strategy seeks to facilitate the purchase of EVs by offering purchase incentives. SCAG assumes 100,000 new EV purchases between 2030 to 2035 from this strategy region-wide. SCAG assumes that 100% of the new EVs purchased will be used everyday when calculating the eVMT reduction, whereas the travel survey indicates that only 65% of vehicles are used per day in the SCAG region. The project lists allocates $2 billion for a PEV Rebate Program. In addition, SCAG has allocated $584,803 for its EV Readiness Program, which seeks to increase rapid deployment of electric vehicles in the region. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG has stated that this strategy is not yet fully developed. SCAG stated that they will work with local partners to identify revenue streams to provide local EV purchase incentives. SCAG is currently in the initial scoping stages to identify appropriate public and private partners as well as to initiate a needs assessment and opportunities analysis.	Actions Identified: Yes Funding in the RTP/SCS Project List: Yes SCAG Program Funding Available: Somewhat CARB is concerned that funding from pricing strategies is extremely uncertain and SCAG's assumptions may overestimate the GHG reductions from this strategy since it assumes 100% of EVs will be used on a daily basis, which is not supported by the data. This assumption may overestimate the eVMT and GHG reductions. CARB recommends SCAG collect and utilize local data on EV uptake and usage to inform its assumptions. Furthermore, SCAG should provide details around regional incentive programs, including who implements the programs, the rebate amounts, and who can receive these rebates/incentives.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Electric Vehicle Incentives	(Continued) -0.60%	(Continued)	This is especially important when CARB staff evaluate the plan to ensure that the SCS strategy is surplus to State actions and incentives.
Transit/TNC Partnership Program	-0.04%	This strategy would subsidize transportation network company (TNC) rides as a first last mile strategy within a 2-mile radius around all Metro rail stations in Los Angeles County. The project list identifies funding for a TNC partnership with Lyft for $1.75 million for a first/last mile program for select transit stations with a 2019 completion year. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will continue to analyze the costs and benefits of subsidized pooled TNC trips within targeted areas. SCAG will address barriers to safe and efficient pick-up and drop-off strategies through its curbside management studies. If warranted, SCAG will develop funding for full program implementation as part of the next Connect SoCal cycle. SCAG participated with SANDAG, MTC, and the County of San Francisco on a statewide TNC data collection effort funded by a Caltrans grant.	Actions Identified: Yes Funding in the RTP/SCS Project List: No The only Transit/ TNC partnership project on the project list appears to have already been completed. SCAG Program Funding Available: Somewhat CARB is concerned that funding from pricing strategies is extremely uncertain because of the need for legislative changes and local buy-in.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Transit/TNC Partnership Program	(Continued) -0.04%	Data collected through this project will enable MPOs and planning agencies to effectively model travel behavior and explore policies to guide these emerging modes.	While there are currently some first-last mile partnerships programs at specific transit stations in the region, such as Blue LA[55], which CARB is a partner on, there is no such program with TNCs that covers all the LA Metro Stations. SCAG needs to develop more specific actions around partnership activities and explain how these are distinct from efforts supported by CARB funding.

[55] Blue LA is an electric vehicle car-share program that provides vehicles at some transit stations and other locations in Los Angeles.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
Bike Share & Micromobility	-0.30%	This strategy supports docked and dock-less bike sharing and e-scooters for short trips and first-last mile connections. SCAG assumes deployment of 167,176 bikes and scooters around all Transit Priority Areas and transit stations between 2020 to 2035. The project list allocates $9.86 million to bike share, including education and program implementation, providing bicycles, and bike share stations/kiosks. Furthermore, $153 million is identified in the project list for complete streets, new mobility, and curbspace management initiatives. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will promote research and analysis of best practices and proposed policies that address barriers to safe deployment of shared micromobility in the target areas. SCAG will leverage increased active transportation infrastructure such as protected bike lines to facilitate greater usage of micromobility. SCAG has completed a study of docked publicly run bike share systems, and will continue to analyze deployment of dockless shared bikes, e-bikes, and e-scooters.	Actions Identified: Yes. However, several communities within the SCAG region prohibit bike share and micromobility options within their jurisdictions. CARB staff recommend that SCAG develop a program or provide incentives to local jurisdictions and bike share and micromobility companies to encourage deployment around transit priority areas. Funding in the RTP/SCS Project List: Yes, however CARB recommends that SCAG clearly state if funding is going to bike share and micromobility projects, instead of using the broader term of new mobility as this could encompass other transportation options not related to this strategy.

SCAG's SCS Strategies	Estimated GHG Emissions Reduction in 2035	SCS Supporting Actions and Investments	CARB Staff's Analysis
(Continued) Bike Share & Micromobility	(Continued) -0.30%	(Continued)	SCAG Program Funding Available: Somewhat. SCAG has previously funded research, but has stated that the strategy will predominately be funded with pricing strategy revenues, as well as relies on private companies for deployment, which are both extremely uncertain.
Car Share	-0.44	This strategy supports car share, which allows for short-term rental of a vehicle. SCAG assumes 150,000 residents will participate in the car share programs throughout Neighborhood Mobility Areas by 2035. SCAG has stated this strategy will predominately be funded through new sources of funds from mileage-based user fees and local pricing strategies. SCAG will research and share best practices as part of its shared mobility policy development to support the program.	Actions Identified: Yes Funding in the RTP/SCS Project List: No SCAG Program Funding Available: Somewhat. SCAG will fund research, but has stated that the strategy will predominately be funded with pricing strategy revenues, as well as rely on private company deployment, which are both extremely uncertain.

While CARB staff's analysis supports a conclusion that SCAG's 2020 SCS would meet the target, when implemented, CARB staff has significant concerns that SCAG will not be able to implement the EV and new mobility strategies in the 2020 SCS to achieve its GHG reduction and planned outcome benefits. CARB staff found that the supporting actions for these strategies primarily rely on revenues from the mileage-based user fee and local pricing strategies to support the implementation of these new mobility strategies, as stated in the "Local and Regional Pricing Strategy Commitments" section above. CARB considers this risky because if these pricing strategies are not implemented then revenue will not be available to support these new mobility strategies.

Further, CARB staff found that the deployment assumptions within the 2020 SCS rely on programs and partnerships outside of SCAG's control, including reliance on new mobility providers, local jurisdictions, and private companies that often have no established programs in place. In addition, SCAG itself has stated that additional research, funding, or program development may be necessary for implementation of the EV incentives and transit/TNC partnerships strategies. This is concerning given the dynamic nature of these new mobility strategies and the degree to which these strategies are forecast to contribute to target achievement. SCAG will need to be vigilant about implementing these strategies though 2035 and making adjustments as necessary to ensure planned reductions and SB 375 goals are achieved.

Looking across all four policy analysis categories, CARB staff's analysis found that SCAG's 2020 SCS includes evidence of policy commitments for its strategies, that when implemented would meet the target. However, areas of concern for CARB staff are that many strategies still require funding sources, legislative authority, and program development to be implemented.

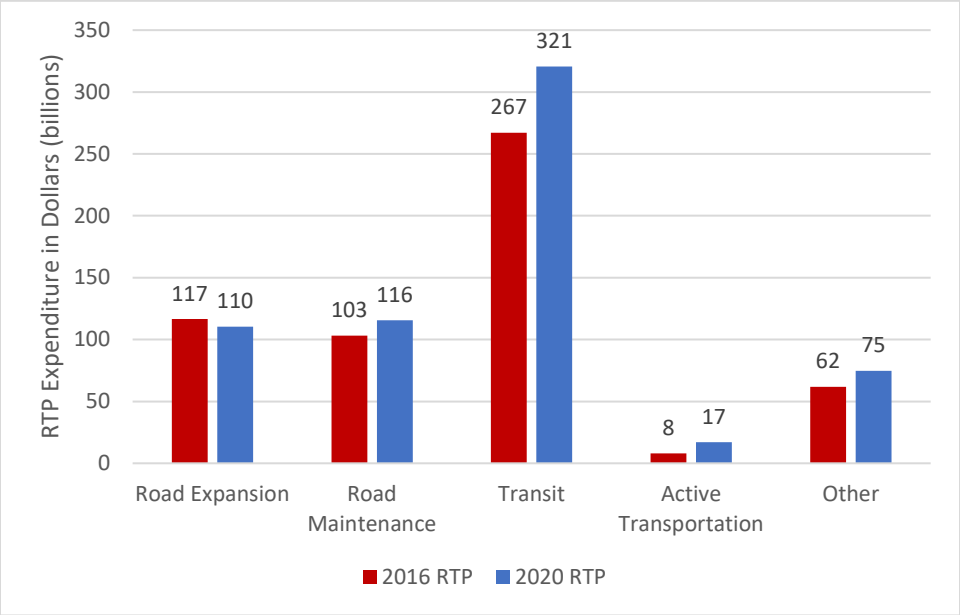
Investment Analysis

CARB staff evaluated whether the 2020 investments support the expected GHG emission reductions, by looking for evidence within the project list adopted with the 2020 SCS for commitments to funding SCS-consistent projects by 2035. CARB staff also qualitatively assessed the risk of delay to delivering projects that advance SCS goals based on assumed available funding sources.

Based on CARB staff's review of SCAG's project list, CARB staff found that the 2020 SCS included a number of projects in the project list for funding that would advance implementation of the SCS, as discussed in the "Policy Analysis" section of this report. For example, SCAG is increasing funding for transit and active transportation modes.

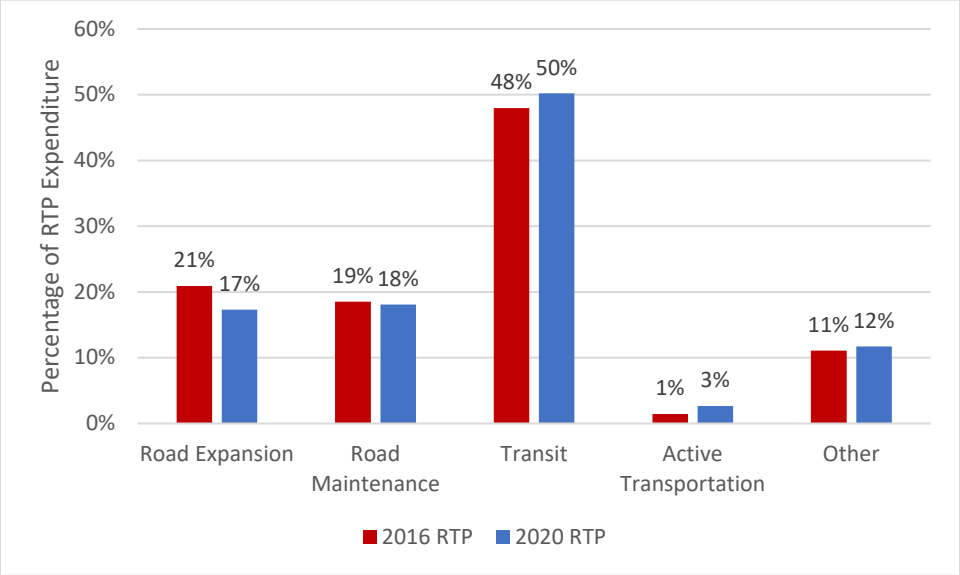
A comparison between the 2016 and 2020 SCS investments by mode are shown in Figure 6 and Figure 7. Total spending increased by nearly 13 percent, to approximately $639 billion compared to approximately $556 billion in the 2016 SCS. Of the total budget, approximately 35 percent is dedicated to road expansion, operations, and maintenance, 50 percent is for capital, operations and maintenance for transit, 3 percent is dedicated to active transportation, and the remaining 12 percent is for debt service obligations, transportation system management, other investments such as incentives, EV chargers, etc. Approximately 13 percent ($316 billion) is dedicated to operations and maintenance, which increased from $275.5 billion in the 2016 SCS. The budget for transit (capital projects and operation and maintenance) has increased 17 percent to $320.6 billion from $267.1 billion between the 2020 and 2016 SCSs respectively. Lastly, the bicycle and pedestrian improvements budgets increased 54 percent to $17.7 billion dollars from $8.1 billion in the last SCS.

Figure 6. Investment by Mode in SCAG's 2020 SCS Compared to the 2016 SCS (Total Dollars)



Source: SCAG 2016 RTP/SCS and 2020 RTP/SCS Expenditures Table 8

Figure 7. Investments by Mode in SCAG's 2020 SCS Compared to the 2016 SCS (Percent of Total Investment)



Source: SCAG 2016 RTP/SCS and 2020 RTP/SCS Expenditures Table 8

The increase in planned expenditure for transit, bike and pedestrian improvements is aligned with SCAG's assumptions around increased non-SOV mode share, increased transit ridership, and forecasted declines in VMT and GHG emissions. However, CARB staff is concerned with the risk of delivering SCS-supportive projects on the project list by 2035. As shown in Table 9, more than half of the plan's investments for transit/passenger rail and active transportation projects (which make up a portion of the "Other" expenditure category) are back loaded to after the SCS target year of 2035 (i.e., post 2035). Planned expenditures for transit/passenger rail and active transportation projects prior to 2035 (i.e., 2031-2035) are not necessarily associated with any firm funding sources, as they are anticipated to rely in part on revenue from the pricing strategies.

Table 9. SCAG SCS Investment Breakdown by Expenditure Category and Fiscal Year[56,57]

Expenditure Category	FY 2021-2025 (B$)	FY 2021-2025 (%)	FY 2026-2030 (B$)	FY 2026-2030 (%)	FY 2031-2035 (B$)	FY 2031-2035 (%)	FY 2036-2045 (B$)	FY 2036-2045 (%)	Total (B$)
Local Highway	$11.9	17%	$11.8	17%	$13.3	20%	$31.2	46%	$68.2
State Highway	$12.1	13%	$15.1	16%	$17.3	19%	$47.3	52%	$91.8
Transit/Passenger Rail	$38.0	12%	$48.0	15%	$71.1	22%	$163.5	51%	$320.6
Other	$15.3	10%	$21.3	13%	$31.6	20%	$90.1	57%	$158.3

Source: SCAG

The 2020 SCS does include new revenue assumptions from its new roadway user fee strategies. Of the new revenue assumed[58], $42.7 billion from 2030 to 2045 is from the mileage-based user fee strategy, which includes a TNC user fee that would separately generate $4.7 billion in revenue from 2021to 2045. The congestion pricing strategy would generate $77.8 billion from 2030 to 2045. Investment of these funds is not yet programmed toward specific projects, but SCAG anticipates these to support some of the SCS transportation and new mobility strategies[59]. While commitment of these

[56] Notes: $ amounts in billions. Local highway includes: arterials, and regionally significant local streets and roads Operation and Maintenance (O&M). State highways includes: High Occupancy Vehicle/Express Lanes, Mixed-Flow and Interchange Improvements, and State Highways (O&M), Transit/Passenger Rail includes: Transit, Passenger Rail, Transit (O&M), and Passenger Rail (O&M). Other includes: Goods Movement, TSM, Active Transportation, TDM, Other (Capital), and Debt Service.

[57] For financial analysis purposes, SCAG does not include pre-2020 projects, recognizing that the projects are complete. However, the Financially Constrained Project List, includes some pre-2020 projects, simply reflecting the programming of these projects in the current FTIP. These projects have already been obligated. Nevertheless, sponsoring agencies often keep the projects programmed during final contract close out.

[58] This section refers to investment information provided in SCAG's 2020 RTP/SCS Transportation Finance Technical Report.

[59] SCAG, Off-Model Trip and Emissions Data documentation.

potential funds toward SCS-supportive projects is helpful, CARB staff remains concerned that if the SCS pricing strategies are delayed or not implemented, transit and active transportation projects envisioned to be constructed between 2031 and 2035 will not be delivered on time or at all.

In addition, SCAG includes revenue assumptions around the Cap-and-Trade Program auction proceeds. Specifically, SCAG assumes the region will get $2.2 billion from Cap-and-Trade proceeds[60]. This forecast is based on current funding levels reported by the State Controller for the Low Carbon Transit Operations Program and award lists as reported by Caltrans. Given the uncertainty about future allowance prices, SCAG assumes annual growth to be flat and ends after 2030. CARB staff is concerned with these assumptions, as these dollars would be applied to support SCS implementation but are also not firm funding amounts, as program dollars are competitive and total amounts available vary by time period. SCS project funding could be further impacted based on changes to available transportation revenues due to the COVID-19 pandemic.

On the whole, CARB staff finds that the 2020 RTP/SCS project investments support the implementation of the 2020 SCS strategies and achievement of the SCS's estimated GHG reduction benefits. However, CARB staff have identified considerable risk to delivery of SCS-supportive projects on the project list by 2035, as they are not associated with any firm funding, particularly due to reliance on pricing strategies.

Plan Adjustment Analysis

The Plan Adjustment Analysis evaluates whether and what measures are being taken, as necessary, to correct course to meet an MPO's target if the region is falling behind on implementation of its SCS strategies. CARB staff reviewed how the implementation of SCAG's SCS performed to date using observed land use and transportation system data[61]. CARB staff found that SCAG is not on track to achieve its previous 2016 SCS planned outcomes for 2020 and 2035. Observed land use and travel data for the region shows declines in transit ridership and significant unrealized new development within infill areas in the region, which are inconsistent with the trends and values assumed in the 2016 SCS to meet the region's GHG reduction targets.

[60] SCAG, 2020 RTP/SCS Transportation Finance Technical Report.
[61] See "Tracking Implementation" section of Appendix C: MPO Reporting.

Given this finding, CARB staff looked for evidence that SCAG's 2020 SCS considered these challenges and either changed its SCS strategies, or put additional measures in place to accelerate implementation of its SCS strategies in order to stay on track to meet its GHG reduction target[62].

CARB staff's review of the 2020 SCS found that SCAG builds upon and expands land use and transportation strategies established over several planning cycles. SCAG also included several new strategies in the plan such as the transit/TNC partnership program, co-working, average vehicle ridership at job centers, parking deregulation in transit priority areas, new transit capital projects, TNC user fees, and congestion pricing. These new strategies are intended to help SCAG close the gap in order to meet its GHG reduction goals[63].

While preparing the 2020 SCS, SCAG reassessed strategies and benefits claimed in the last plan. SCAG removed the off-model strategy Neighborhood Electric Vehicles that was included in the 2016 RTP/SCS due to low market penetration and lack of implementation and incentives at the regional level[64]. SCAG also no longer anticipates GHG reduction from general TNC activity in the region based on new information about TNC trips[65], which suggested TNCs may not necessarily reduce VMT. SCAG only assumes reductions associated with TNCs through user fees and transit/TNC partnerships. The sections below describe other adjustments SCAG made to its assumptions, models, and strategies.

Key Assumption Changes

SCAG adjusted its 2035 baseline due to changes in e-commerce[66] and telemedicine[67], which reflects fewer light-duty vehicle trips. Under e-commerce, car trips may be replaced with heavy vehicle trips, while telemedicine is forecasted to replace certain types of medical trips. SCAG claims a combined 0.35 percent reduction of GHG

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[62] See "Incremental Progress" section of Appendix C: MPO Reporting for SCAG's assessment of how changes to its SCS strategies between the 2016 SCS and 2020 SCS contributed to achievement of its 2035 target.
[63] SCAG, 2020 RTP/SCS, Chapter 0 Making Connections, page 4.
[64] Technical Methodology to Estimate Greenhouse Gas Emissions for Connect SoCal (2020-2045 Regional Transportation Plan/Sustainable Communities Strategy)
Southern California Association of Governments
[65] SCAG SCS Submittal Overview document.
[66] E-commerce refers to the buying and selling of goods or services using the internet.
[67] Telemedicine refers to the use of telecommunication technology for the use of virtual doctor's visits.

emissions from these activities by 2035. This is comparable to the region-wide bike share and micromobility strategy, which is envisioned to achieve a 0.30 percent reduction of GHG emissions. These baseline adjustments result in GHG emission reductions from non-SCS strategies.

Model Changes

SCAG developed and maintained a traditional four-step travel demand forecasting model for its first-and second-round RTP/SCSs. Due to the limitations in the model sensitivity to policies, SCAG introduced its newly developed ABM for the 2020 RTP/SCS. This enhanced SCAG's travel demand model sensitivities to land use and transportation policies, including newly introduced transportation services such as bus rapid transit and high-speed rail. The ABM was calibrated and validated to 2016 travel conditions using multiple data sources including traffic counts from Highway Performance Monitoring System (HPMS) and speed data from the Performance Measurement System (PeMS). The modeled results are consistent with those data sources and concluded by the model peer-review committee to meet current state of practice comparing to peer MPOs[68].

CARB staff observed the following policy changes and adjustments between SCAG's 2020 SCS and 2016 SCS.

Land Use and Development

- To overcome previous challenges, address community feedback, and accelerate its efforts to meet its target, SCAG has expanded its priority growth areas and added new constrained areas, to help catalyze infill development.

- SCAG included a new policy to support the creation of EIFDs to pave the way for economic development and reduce the cost of housing construction in transit-oriented locations.

Transportation

SCAG introduced five new transportation strategies compared to the 2016 SCS, which include job center parking, co-working, average vehicle ridership for job centers,

[68] SCAG, 2016 Regional Travel Demand Model and Model Validation. April 2020.

multimodal dedicated lanes, and parking deregulation in transit priority areas. SCAG also updated its assumptions for transportation strategies from the 2016 SCS as follows:

- Adjusted its transit assumptions between the 2016 SCS and the 2020 SCS for the 2035 target year. Total transit operational miles assumptions increased from 715,412 to 765,171 (7 percent) in 2035.

- Increased active transportation, bike and pedestrian lane mile assumptions for the 2035 target year from 11,500 to 18,150 (58 percent increase) between the 2016 SCS and 2020 SCS.

Roadway Pricing

- SCAG introduced two new pricing assumptions compared to the 2016 SCS, which include congestion pricing and the TNC user fees that are intended to both help address long-term transportation funding sustainability concerns, while also helping to support achievement of VMT reduction. As part of this SCAG is working with Caltrans and other local partners to identify options for governance and administration of revenues from congestion-based pricing, in coordination with ongoing studies. SCAG also continues to collaborate with local jurisdictions and LA Metro, community-based organizations (CBOs), business, and other key stakeholders on potential congestion pricing pilot projects to address key implementation factors, including equity. SCAG also updated its assumptions around mileage-based user fees and express lanes, which were already part of the 2016 SCS. Specifically, in the 2016 SCS, the mileage user fee was assumed to be 2.8 cents per mile whereas in the 2020 SCS it assumed to be 2.0 cents per mile[69], which includes the new TNC user fee.

New Mobility Policies

SCAG has adopted three new strategies compared to the 2016 SCS, which include new EV incentives, bike share and micromobility, and transit/TNC partnerships. SCAG has also adopted new actions in support of incorporating these new mobility options into the region, including:

[69] The 2.0 cents per mile includes 1.5 cents per mile as a regional VMT fee and 0.5 cents per mile for a TNC user fee.

- Work with local partners to identify revenue streams to provide local EV purchase incentives.

- Promote research, and analysis of best practices and proposed policies that address barriers to safe deployment of shared micromobility in the target areas. SCAG will leverage increased active transportation infrastructure such as protected bike lines to facilitate more usage of micromobility. SCAG has completed a study of docked publicly run bike share systems, and will continue to analyze deployment of dockless shared bikes, e-bikes, and e-scooters.

- Continue to analyze the costs and benefits of subsidized, pooled TNC trips within targeted areas. SCAG will address barriers to safe and efficient pick up and drop off strategies through its curbside management studies. If warranted, SCAG will develop funding for a full program implementation as part of the next Connect SoCal cycle.

CARB staff finds that the 2020 SCS shows evidence of changes and adjustments made that are intended to help meet the region's more aggressive targets and are based on lessons learned from the previous SCS.

CARB's Determination

ACCEPT

(WITH SIGNIFICANT CONCERNS REGARDING IMPLEMENTATION)

Based on a review of all available evidence and in consideration of CARB's 2019 Evaluation Guidelines, CARB staff accepts SCAG's determination that its 2020 SCS would meet the target of a 19 percent reduction by 2035, compared to 2005 levels, when fully implemented.

CARB staff commends SCAG and its member jurisdictions for the innovative thinking and leadership shown in adopting new pathways for the region to address smart growth and increase mobility choices in its 2020 SCS. Furthermore, the region's addition of pricing mechanisms in the 2020 SCS, through express lanes, congestion pricing, and mileage-based/TNC user fees demonstrates leadership on strategies that can help provide mobility benefits to residents and achieve the region's GHG target. CARB staff's policy evaluation of the 2020 SCS concludes that the plan includes: sufficiently supportive indicator trends; near-term policy support actions; active transportation, transit, and other SCS-supportive project investments; and adjustments in response to observed implementation challenges that when fully implemented, will lead the Southern California region to achieve its 2035 GHG reduction target.

CARB staff, however, continues to have serious concerns with the 2020 SCS regarding SCAG's approach to its 2020 target determination and whether SCAG and its local members are putting in place the actions necessary to fully implement the region's SCS strategies by 2035. Specific to the 2020 target determination, SCAG made a determination as to whether its 2020 SCS meets the 8 percent GHG reduction target by 2020 compared with 2005 levels based on modeled 2020 forecast values, which it submitted to CARB as evidence for its determination. While SCAG appropriately provided a determination to CARB, its reliance on modeled evidence without consideration of observed data, as called for in CARB's SCS evaluation guidelines, was inappropriate. Statute requires MPOs to show how they will meet the CARB-set targets for years 2020 and 2035. The overarching intent of SB 375 was to enact the magnitude of change that would lead to actual GHG reductions from passenger vehicles and light trucks in line with the targets set by CARB. Failing to adequately evaluate and determine whether the strategies would meet the 2020 target could hinder this goal by allowing backsliding on GHG reductions achieved or back loading of strategies to meet the 2035 target, both of which threaten the ability of the region to meet the targets.

This would be counter to the intent of SB 375 and frustrate California's ability to meet its climate commitments, which depend on local land use and transportation actions to reduce transportation GHG emissions. For these reasons, SCAG and every MPO should submit a determination as to whether it will meet the 2020 target in every SCS. As with the 2035 target, for the 2020 target determination, SCAG would review the modeling data and identify measures and strategies utilized to meet the 2020 target. Consistent with the 2019 Evaluation Guidelines, SCAG would also compare available observed data with performance indicators in accordance with the Tracking Implementation reporting component to understand whether the region is moving in a direction consistent with the planned outcomes from the SCS to meet the 2020 target. If the region is not on track to meet the target, SCAG would then need to identify policy and investment interventions to get the region on track to meet the 2020 target and identify when the target would be met, consistent with the Plan Adjustment section of the 2019 Evaluation Guidelines.

While SCAG's plan forecasts bold changes to the region's infill, transit and roadway network management by 2035, the implementation actions identified present concerns about whether they can or will be implemented as described. Many of the SCAG's key actions rely on others to implement them and there are no existing commitments to do so. For example, the average vehicle ridership for job centers, parking deregulation in transit priority areas, co-working, and job center parking strategies require local or private support and buy-in to implement. Additionally, many of the funding sources identified to support the SCS strategies, key actions, and projects, rely on legislative authority for implementing its congestion pricing and mileage-based user fee strategies that may or may not be forthcoming. Furthermore, transit and active transportation projects that will support GHG emission reductions are back loaded to occur around or after 2035, suggesting they will not be implemented in time to meet the 2035 target.

To support successful implementation of the SCS and achievement of SB 375's goals, and to continue fully supporting the GHG benefits claimed in the 2020 SCS, SCAG and its local members will need to undertake additional actions to deliver and monitor its SCS strategies, as well as quickly adjust its strategies for any lost opportunities that need to be replaced or mitigated. To address these concerns, CARB staff has the following recommendations and requests SCAG set up regular monitoring of the implementation actions associated with its SCS strategies in consultation with CARB and other relevant agencies.

Recommendations

- Deprogram Capacity Expansion Projects and Prioritize Funding for Transportation Projects that Advance SCS Implementation and Goals

  SCAG should develop a more rigorous vetting process for the project list, including developing a project analysis tool for local agencies to use when submitting projects for consideration in the RTP project list. Specifically, the analysis tool should consider how the proposed transportation projects fit in with the SCS's identified priority growth areas and constrained areas, as well as SCS strategy deployment assumptions. Projects that are well-aligned with the SCS should be prioritized over projects that are not well-aligned, and SCAG should work with its members to deprogram capacity expansion projects, especially those that are counter to the region's adopted SCS land use and housing strategy, and will increase VMT.

  SCAG should prioritize projects that will support growth in the region's priority growth areas (which include job centers, high-quality transit areas, and neighborhood mobility areas) that foster lower VMT when seeking funding through the Solutions for Congested Corridors Program (SCCP) and Trade Corridor Enhancement Program (TCEP), under SB 1.

  To help maintain the years of regional collaboration that informed SCAG's SCS and both the region's and the State's ability to meet their respective climate and air quality targets, future local sales tax measures in the region should limit funding for roadway capacity expansion projects that are not well-aligned with the region's adopted SCS land use and housing strategy. Local sales tax measures comprise approximately 57 percent of the Southern California region's projected local funding. These measures list specific projects, locking them in for years or decades. Often, these measures do not fully fund their listed projects, and go on to capture a region's otherwise-flexible State and federal funds. Within the SCAG region, some of these measures have been supportive of SB 375 goals, while other projects have not. Prioritizing projects that decrease VMT is more important than ever to achieve the region's GHG reductions targets and SB 375's goals. Going forward, investments should focus on transit, active transportation, transportation electrification, and increasing mobility options that discourage solo driving and reduce VMT.

- Monitor Implementation of the Adopted SCS Strategies, Actions, and Transportation Project List

  SCAG continues to include carry-over strategies from its previous 2012 and 2016 SCSs, however, it is unclear how successful these strategies have been. SCAG should track and report on the implementation of all strategies, including off-model strategies, and provide data-supported metrics to better assess them. For example, SCAG mentioned to CARB staff that there are challenges around data collection around Safe Routes to School and that while many agencies currently operate Safe Routes to School programs, there is no centralized database for California or the SCAG region. CARB staff encourages SCAG to pursue a regional central database to track program development. Tracking of these strategies like this will help inform SCAG, its member agencies, and the public on what strategies are performing well, what strategies should be adjusted, or if strategies should be removed. This will also help inform what types of projects and investments the region should consider making in order to achieve the SB 375 GHG emission reduction targets.

  SCAG will need to be vigilant about monitoring the balance of transportation projects through 2035 to ensure planned reductions are achieved. Delays or removals of transit and active transportation projects will prevent SCAG from meeting its GHG emission reduction target. Amendments to the project list should be accompanied by recalculation and discussion of whether and how SCS target achievement is maintained.

- Accelerating Infill to Further SCS Implementation and Goals

  SCAG's SCS provides important growth assumptions regarding regional growth constraints to preserve natural and working lands, and limit development in potentially risky locations such as at the wildland urban interface. However, these growth constraints are not yet based on local zoning restrictions. Jurisdictions should align planning and local policies and actions that support development/redevelopment for growth with the goals of the SCS and RHNA. Examples include actions to update general and specific plans, zoning for higher density, conservation protections of natural and working lands, zoning for development away from high-risk locations such as those that are vulnerable to fire, flood, or sea level rise areas, and site inventory and feasibility studies for infill potential.

In the next SCS, SCAG's Open Space and Natural Lands Mitigation Program should be fully developed to support growth constraint assumptions in the model. Furthermore, SCAG should provide CARB staff with development by SCAG's place types, not just by priority growth areas, to allow better comparison of planned and projected development in the region.

- State and Regional Partnership on Pricing Pilot Options

  SCAG will need to engage in close collaboration with State partners at Caltrans and CalSTA, local partners, and private companies to ensure successful implementation of the pricing mechanisms identified in the 2020 SCS. Given that SCAG's pilot project grant application was not funded this round, SCAG needs to work with both Caltrans and CalSTA on identifying alternative joint actions for advancing pilot work in the next four years. Furthermore, SCAG needs to work with local jurisdictions across the region to rapidly implement TNC user fees in order to meet the assumed 2021 implementation timeframe. CARB expects SCAG to identify further progress on implementation of these strategies in its next SCS in order to continue receiving credit for the full GHG emission reductions assumed in this 2020 SCS.

- Improve GHG Benefit Estimates for 2020 SCS New Strategies

  SCAG should use assumptions supported by evidence through local data for all strategies. Strategy development should consider the existing level of participation and implementation status, and be tracked for future implementation. SCAG should be more specific in the next SCS about what its strategies are, how its strategies are distinct from one another, and how its policy commitments align with its quantification assumptions and plan outcomes. CARB staff expects SCAG to provide more details on how supporting actions are consistent with and reflected through strategy deployment assumptions in the next SCS to continue to fully support the GHG benefits claimed by SCAG. For more information, refer to the "Policy Analysis" section.

- Provide All Trend Analysis Metrics

  SCAG's SCS submittal lacks data on transit seat utilization as well as 2005 data on average vehicle trip length, daily transit ridership, and average travel time by mode, which are part of the eight trends that CARB staff analyzes as part of the trend analysis. This information is necessary to demonstrate the growth in public

transit ridership, mode shift and support transit, and active transportation strategies in the SCS. Providing more meaningful performance indicators like these may require SCAG to backcast the 2005 performance indicators and estimate the missing indicators using its new activity-based travel demand model. CARB requests that these metrics be included in SCAG's next SCS.

- Improve Modeling and Data

  SCAG's activity-based travel demand model (ABM) is relatively new and therefore requires continuous improvements as new data emerge. CARB staff recommends that SCAG improve the sensitivity of the model to household income and pricing strategies. In addition, SCAG should conduct the sensitivity analysis to modeled strategies such as work-from-home, cordon pricing, transportation demand management, and mileage-based user fee. Specifically, CARB staff recommends that the model incorporate TNCs and autonomous vehicles as part of the mode choice model of the ABM.

  In terms of off-model strategies, SCAG may have overestimated the GHG emission reduction benefits due to conflicting and inaccurate assumptions. For example, SCAG assumes that on average 65 percent of household vehicles are used in a typical day as part of travel demand modeling, however, when estimating benefits for electric vehicle (EV) incentives program, it assumes that 100 percent of the new EVs will be used for calculating the electric vehicle miles traveled (eVMT). Similarly, SCAG has also assumed zero-vehicle households will have zero-VMT for quantifying off-model strategies. These assumptions may have overestimated the benefits from some of the off-model strategies. CARB staff recommends that SCAG make its assumptions consistent across both modeling and off-model quantifications, and support them with local data. In addition, SCAG should provide the detailed VMT and GHG reductions for individual strategies and document its estimation process, assumptions, and current participation rate for each off-model strategy.

  In the current SCS, SCAG has incorporated two baseline adjustments (i.e., telemedicine and e-commerce) to demonstrate its achievement of the 2035 target. However, as indicated above, several key assumptions related to both baseline adjustments are not well-supported by local data. Therefore, CARB staff recommends that SCAG also collect local data prior to including any baseline GHG and VMT adjustments, such as through before and after travel surveys for things such as telemedicine and e-commerce or due to COVID-related impacts.

CARB staff will only consider baseline adjustments that are well-supported by local, regional, or state travel survey data.

- Analyze Induced Travel Demand

  Induced travel is a phenomenon that is caused by roadway expansion that increases VMT when drivers reroute from congested roads to longer, uncongested roads, shift from alternative modes to driving, or make more frequent trips. Road expansion projects can also lead to long-term induced travel in the region. Long-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. Induced travel is important to analyze as it can affect VMT and GHG emissions. SCAG has included several road expansion projects in its 2020 SCS. Currently SCAG is using an elasticity-based approach to assess the long-term effect of induced travel. While this approach can estimate the magnitude of VMT change, it cannot identify the geographic areas of induced travel or synergistic effects of induced travel with other strategies, and thus may not be directly helpful to future planning and mitigation actions. CARB staff recommends that SCAG continue to explore methods that can analyze the long-term induced travel demands of road expansion more thoroughly in future SCSs, using an integrated land use and travel demand model that captures change in transportation investments or neighborhood changes (residential and employment locations). Further, this will improve the capability to analyze the impact of land use policies such as smart growth strategies, transit-oriented development, and bike/pedestrian-friendly developments on travel demand.

Appendix A: SCAG's 2020 SCS Strategy Table

This is a summary table based on SCAG's submittal that compares the key land use and transportation strategies between the 2016 and 2020 SCSs. This table also illustrates how GHG emissions were estimated for each strategy.

Category: 2020 SCS Strategy Name	New/Carryover Strategy from 2016 SCS	Analysis Type	Estimated GHG Emission Reduction in 2035
Land Use & Housing: Infill Development & Increased Density Near Transit Infrastructure and Shorter Trips Through Jobs/Housing Balance and Complete Communities *Transportation:* Transportation Demand Management, New Transit Capital Projects *Local & Regional Pricing*: Congestion Pricing, Mileage-Based User Fee/ TNC User Fee, Express Lane Pricing	Congestion Pricing (New) , Mileage-Based User Fee/ TNC User Fee (New) All Other Strategies (Carryover)	On-Model	-14.2%

Category: 2020 SCS Strategy Name	New/Carryover Strategy from 2016 SCS	Analysis Type	Estimated GHG Emission Reduction in 2035
Transportation: Average Vehicle Ridership for Job Centers	New	Off-Model	-0.64%
Transportation: Parking Deregulation in Transit Priority Areas	New	Off-Model	-0.43%
Transportation: Co-Working	New	Off-Model	-0.14%
Transportation: Improved Pedestrian Infrastructure	Carryover	Off-Model	-0.10%
Transportation: Safe Routes to School	Carryover	Off-Model	-0.20%
Transportation: Multimodal Dedicated Lanes	New	Off-Model	-0.40%
New Mobility: Electric Vehicle Charging Infrastructure	Carryover	Off-Model	-1.16%
New Mobility: Electric Vehicle Incentives	New	Off-Model	-0.60%

Category: 2020 SCS Strategy Name	New/Carryover Strategy from 2016 SCS	Analysis Type	Estimated GHG Emission Reduction in 2035
New Mobility: Transit/TNC Partnership Program	New	Off-Model	-0.04%
New Mobility: Bike Share & Micromobility	New	Off-Model	-0.30%
New Mobility: Car Share	Carryover	Off-Model	-0.44%
Telemedicine[70]	New	Baseline Adjustment*	-0.15%
On-line Shopping/E-Commerce[71]	New	Baseline Adjustment*	-0.20%
Total Reduction	**N/A**	**N/A**	**19%**

Notes:
N/A means not available.

[70] SCAG is claiming GHG reductions from Telemedicine, which is a baseline adjustment.
[71] SCAG is claiming GHG reductions from On-Line Shopping/ E-Commerce, which is a baseline adjustment.

Appendix B: Data Table

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Modeled Population	17,498,000	18,832,000	19,518,000	19,518,000	21,445,000	21,443,000	22,506,000	22,504,000	Travel Demand Model Input
Modeled Residents	17,161,000	18,512,000	19,194,000	19,194,000	21,115,000	21,109,000	22,172,000	22,164,000	Travel Demand Model Input
Vehicle Operating Costs (2011$/mile)	17.4500	16.7037	19.8945	19.8945	22.9429	24.4929	23.5147	25.0647	Travel Demand Model Input
Average Toll Price ($/mile)	N/A(e)	$0.540 to $6.440 fixed tolls; $0.240 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $2.651 per-mile tolls; $3.407 fixed cordon tolls	$0.540 to $12.112 fixed tolls; $0.000 to $0.384 per-mile tolls	$0.540 to $12.112 fixed tolls; $0.000 to $2.651 per-mile tolls; $3.407 fixed cordon tolls	Travel Demand Model Input
Average median Household Income ($/year) ($2011)	$52,712	$57,079	$57,963	$57,963	$57,650	$57,555	$56,609	$57,269	Travel Demand Model Input
Total Number of Households	5,650,000	6,012,000	6,334,000	6,333,000	7,174,000	7,170,000	7,639,000	7,633,000	Travel Demand Model Input
Total Number of Jobs	7,771,000	8,389,000	8,696,000	8,695,000	9,567,000	9,566,000	10,050,000	10,049,000	Travel Demand Model Input
Total Developed Acres	1,695,000	2,375,000	N/A	N/A	N/A	N/A	2,772,000	2,654,000	Travel Demand Model Input/ GIS

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Total Housing Units	5,650,000	6,531,000	6,892,000	6,894,000	7,828,000	7,830,000	8,346,000	8,346,000	Travel Demand Model Input
Total Single-Family Housing Units (du)	3,090,000	3,601,000	3,808,000	3,680,000	4,353,000	3,994,000	4,654,000	4,150,000	Travel Demand Model Input
Share of Single-Family Housing Units (%)	N/A	55.1%	55.3%	53.4%	55.6%	51.0%	55.8%	49.7%	Calculated (Total single-family units/ total housing units)
Total Multi-Family Housing Units (du)	2,560,000	2,930,000	3,084,000	3,214,000	3,475,000	3,836,000	3,692,000	4,197,000	Travel Demand Model Input
Share of Multi-Family Housing Units (%)	N/A	44.9%	44.7%	46.6%	44.4%	49.0%	44.2%	50.3%	Calculated: (Total multi-family units/ total housing units)
Total Housing Units Within ½-Mile of a High-Quality Transit Station	N/A	2,102,606	2,229,822	2,243,518	2,654,445	2,838,525	2,825,188	3,336,191	Travel Demand Model Input/GIS
Total Jobs Within ½-Mile of a High Quality Transit Station	N/A	3,556,044	3,698,996	3,727,315	4,159,169	4,590,854	4,330,974	5,247,264	Travel Demand Model Input
Freeway and General Purpose Lanes –Mixed Flow, auxiliary, etc., (lane miles)	10,795	11,148	11,194	11,194	11,319	11,558	11,336	11,676	Travel Demand Model Input
Freeway Toll Lanes (lanes miles)	N/A	414	493	493	754	1,370	754	1,464	Travel Demand Model Input

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Freeway HOV Lanes (lane miles)	N/A	936	933	933	966	749	966	866	Travel Demand Model Input
Arterial/Expressway (lane miles)	N/A	36,495	36,813	36,813	36,968	38,861	37,049	39,848	Travel Demand Model Input
Collector (lane miles)	N/A	22,464	22,495	22,501	22,565	23,598	22,569	24,060	Travel Demand Model Input
Average Transit Headway (minutes)	N/A	70.5	70.1	70.1	67.9	65.8	67.9	64.8	Travel Demand Model Input
Total Transit Revenue (Operation) miles	N/A	615,067	625,984	625,987	663,664	765,171	663,673	841,099	Travel Demand Model Input
Transit Total Daily Vehicles Service Hours	N/A	47,556	48,163	48,163	50,563	53,978	50,564	59,485	Travel Demand Model Input
Bike and Pedestrian Lane (Class I, II, & IV) miles	N/A	7,992	8,973	10,107	12,762	18,150	15,288	23,512	Travel Demand Model Input
Household Vehicle Ownership	1.97	1.90	1.93	1.91	1.91	1.88	1.91	1.86	Travel Demand Model Output
Drive Alone	11.4	12.1	11.9	11.9	11.5	11.7	11.3	11.5	Travel Demand Model Output
Shared Ride	N/A	7.6	7.4	7.4	7.4	7.3	7.3	7.2	Travel Demand Model Output
Public Transit	N/A	7.3	7.5	7.6	8.2	8.8	8.2	8.9	Travel Demand Model Output
Bike	N/A	1.7	1.7	1.7	1.8	1.8	1.8	1.9	Travel Demand Model Output
Walk	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.3	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Commute Trip	N/A	32.3	31.9	31.7	31.8	30.4	32.1	30.3	Travel Demand Model Output
Non-Commute Trip	N/A	13.3	13.1	13.1	13.2	13.2	13.4	13.3	Travel Demand Model Output
Drive Alone	19.3	20.0	19.6	19.5	19.1	17.9	19.1	17.1	Travel Demand Model Output
Shared Ride	N/A	13.0	12.8	12.7	12.8	12.2	13.0	12.2	Travel Demand Model Output
Public Transit	N/A	39.1	40.1	40.4	43.4	45.4	44.0	46.3	Travel Demand Model Output
Bike	N/A	8.5	8.6	8.7	8.9	9.1	9.1	9.4	Travel Demand Model Output
Walk	22.7	24.8	24.8	24.9	24.9	25.1	25.0	25.1	Travel Demand Model Output
Average Travel Time for Low-income Populations (minutes) (Household income <$28,000 in 2011$	N/A	16.8	16.6	16.6	16.9	17.2	17.1	17.5	Travel Demand Model Output
Drive Alone	46.5%	36.0%	36.8%	36.6%	36.8%	35.8%	37.0%	35.4%	Travel Demand Model Output
Shared Ride	41.9%	51.7%	50.9%	50.8%	50.2%	49.5%	50.1%	49.2%	Travel Demand Model Output
Public Transit	2.3%	3.2%	3.3%	3.4%	3.8%	4.7%	3.6%	4.8%	Travel Demand Model Output
Bike	0.9%	1.3%	1.3%	1.4%	1.5%	1.8%	1.6%	2.1%	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Walk	8.4%	7.8%	7.7%	7.9%	7.7%	8.3%	7.7%	8.6%	Travel Demand Model Output
Transit Ridership (Average daily boardings)	N/A	2,074,697	2,312,950	2,356,182	3,156,267	4,469,295	3,030,909	5,070,390	Travel Demand Model Output
Total VMT per weekday (all vehicle classes: LM + HDT+Others) (miles)	N/A	462,912,495	468,587,665	465,543,311	507,300,450	489,908,219	539,097,782	514,683,804	Travel Demand Model Output
Total SB375VMT per weekday for passenger vehicles (CARB vehicle classes LDA, LDT1, LDT2, and MDV) (miles) (a)	399,661,000	426,710,974	430,202,438	427,182,651	459,381,311	418,738,693	480,763,666	431,393,513	Travel Demand Model Output
Total LM VMT per weekday for passenger vehicles (ARB vehicle classes of LDA, LDT1, LDT2, MCY and MDV) (miles)	N/A	428,985,427	432,588,134	429,553,186	461,959,567	444,644,860	483,459,311	459,428,299	Travel Demand Model Output
Total II (Internal) LM VMT per weekday for passenger vehicles (miles)	365,374,000	394,027,371	394,684,677	391,639,899	414,401,050	399,312,344	426,791,054	406,309,573	Travel Demand Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Total IX/XI LM VMT per weekday for passenger vehicles (miles)	31,269,000	31,997,613	34,818,112	34,827,285	43,929,775	41,745,530	52,602,986	49,093,189	Travel Demand Model Output
Total XX LM VMT per weekday for passenger vehicles (miles)	3,018,000	2,960,442	3,085,345	3,086,002	3,628,742	3,586,986	4,065,271	4,025,537	Travel Demand Model Output
SB 375 VMT per capita (a),(b)	23.29	23.05	22.41	22.26	21.76	19.84	21.68	19.46	Calculated: Total SB375VMT / Modeled residents
Total CO2 emissions per weekday (all vehicle class: LM + HDT+Others, w/ all measures)) (tons/day)	N/A	235,512	217,290	216,180	175,955	170,792	189,230	181,569	EMFAC Model Output
Total SB375 CO2 emissions per weekday for passenger vehicles (CARB vehicle classes LDA, LDT1, LDT2, and MDV) (tons/day) (a)	204,040	205,049	205,567	204,251	219,862	198,099	231,494	204,416	EMFAC Model Output

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Total LM CO2 emissions per weekday for passenger vehicles (ARB vehicle classes LDA, LDT1, LDT2, MCY and MDV w/ all measures) (tons)	N/A	188,447	167,828	166,753	115,868	111,014	114,848	108,150	EMFAC Model Output
Total II (Internal) LM CO2 emissions per weekday for passenger vehicles w/ all measures (tons)	187,090	173,090	153,123	152,035	103,939	99,696	101,386	95,646	EMFAC Model Output
Total IX/XI trip LM CO2 emissions per weekday for passenger vehicles w/ all measures (tons)	16,010	14,056	13,508	13,520	11,018	10,423	12,496	11,557	EMFAC Model Output
Total XX trip LM CO2 emissions per weekday for passenger vehicles w/ all measures (tons)	1,550	1,300	1,197	1,198	910	896	966	948	EMFAC Model Output
SB 375 CO2 per capita (lbs./day) (a),(b)	23.7801	22.1532	21.4201	21.2833	20.8252	18.7694	20.8814	18.4454	Calculated: Total SB375 CO2 /Modeled residents * 2000 lbs./ton

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
EMFAC Adjustment Factor	N/A	N/A	2.21%	2.21%	1.95%	1.95%	N/A	N/A	CARB Methodology for Estimating CO2 Adjustment
Tele-Medicine and E-Commerce	N/A	N/A	N/A	N/A	N/A	-0.35%	N/A	-0.38%	MPO Estimated
Electric Vehicle Strategies (e.g. charging stations, incentive)	N/A	N/A	N/A	N/A	N/A	-1.76%	N/A	-1.87%	MPO Estimated
Emerging Technology (e.g. car share)	N/A	N/A	N/A	N/A	N/A	-0.78%	N/A	-0.77%	MPO Estimated
Job Center and Commute Strategies (e.g. co-working)	N/A	N/A	N/A	N/A	N/A	-1.21%	N/A	-1.12%	MPO Estimated
Alternative Mode Strategies (e.g. Safe Routes to School, dedicated Transit Lanes)	N/A	N/A	N/A	N/A	N/A	-0.70%	N/A	-0.74%	MPO Estimated
Induced Demand	N/A	N/A	N/A	N/A	N/A	0.56%	N/A	0.55%	N/A
Total RTP Expenditure ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roads & Highway Capacity Expansion ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roads & Highway Operations and Maintenance ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Modeling Parameters	2005 (c)	2016 Base Year (BY)	2020 Baseline (BL)	2020 Plan (PL)	2035 Baseline (BL)	2035 Plan (PL)	2045 Baseline (BL)	2045 Plan (PL)	Data Sources
Transit & Passenger Rail Capital Projects ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transit & Passenger Rail Operations and Maintenance ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Active Transportation Capital Projects ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other Capital Projects (including TSM, ITS, TDM, etc.) ($),	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Debt Service ($)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(a) SB375 VMT and CO2 excluded Motorcycle VMT, X-X VMT and Included Off-models (if applicable).

(b) ARB formula for SB 375 VMT per capita and CO2 per capita: (II + IX/XI passenger VMT) / population is inapplicable.

(c) 2005 is based on trip based travel demand model and definition of work trip and other parameters may be different from Activity based travel demand model.

(d) SCAG did not provide investment information in the data table provided to CARB. Instead, SCAG referred CARB to the 2020 RTP/SCS Transportation Finance Technical Report. The investment information in this evaluation reflects information found in that report.

(e) N/A means not available.

Appendix C: MPO Reporting Components

This section will focus on discussing the three reporting components of the 2019 Evaluation Guidelines: tracking implementation, incremental progress, and equity. The three reporting components are included to identify the effectiveness of prior SCS implementation and increase overall transparency of the SCS for the public and other stakeholders. These reporting components will demonstrate the efforts put forward by MPOs and the progress made towards meeting their SB 375 GHG targets.

Tracking Implementation

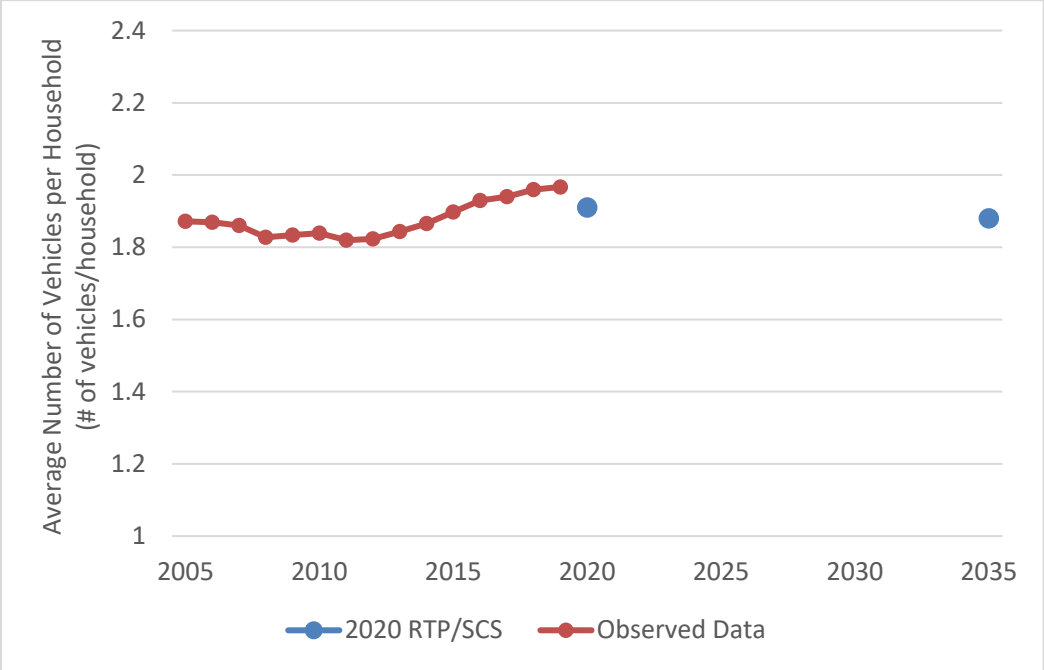
The purpose of this section is to report on the progress the SCAG region has made implementing its SCS. Specifically, staff compared observed data for transportation, housing, and land use performance metrics to plan performance to determine whether the region is on track to meet its targets. Performance metrics used in this analysis were chosen based on the availability of observed data and plan performance indicators provided by SCAG and represent a snapshot of where the region is currently. Metric trends that are not heading in the right direction relative to expected plan outcomes are areas that CARB staff look at in the Plan Adjustment analysis, to understand whether the current SCS modifies or adds strategies or actions to get the region on track with expected plan outcomes.

Regional Average Household Vehicle Ownership

CARB staff analyzed the trend in household vehicle ownership for SCAG from 2005 to 2019. This indicator reports the average number of private vehicles owned by each household in SCAG (i.e. the total number of household vehicles divided by the number of households). Total county-level, privately-owned vehicle and household data for 2005 to 2016 were obtained from the American Community Survey (ACS) reports[72] and Department of Finance[73] respectively. Figure 8 shows historical SCAG average household vehicle ownership from 2005 to 2019 in comparison to SCAG's 2035 forecasted household vehicle ownership from its travel demand model (See Appendix B: Data Table). While average household vehicle ownership increased by 5.1 percent in SCAG from 2005 to 2019, there was a decline between 2005 and 2012, with a subsequent rebound. The 2035 forecasted SCS household vehicle ownership is 4 percent below the observed 2019 household vehicle ownership, and the trend in observed data is heading in the wrong direction relative to expected plan outcome for 2035.

[72] U.S. Census Bureau, American Community Survey, 2005 – 2019 ACS 1-year Estimates.
[73] Department of Finance, Demographics.

Figure 8. SCAG Region Average Household Vehicles



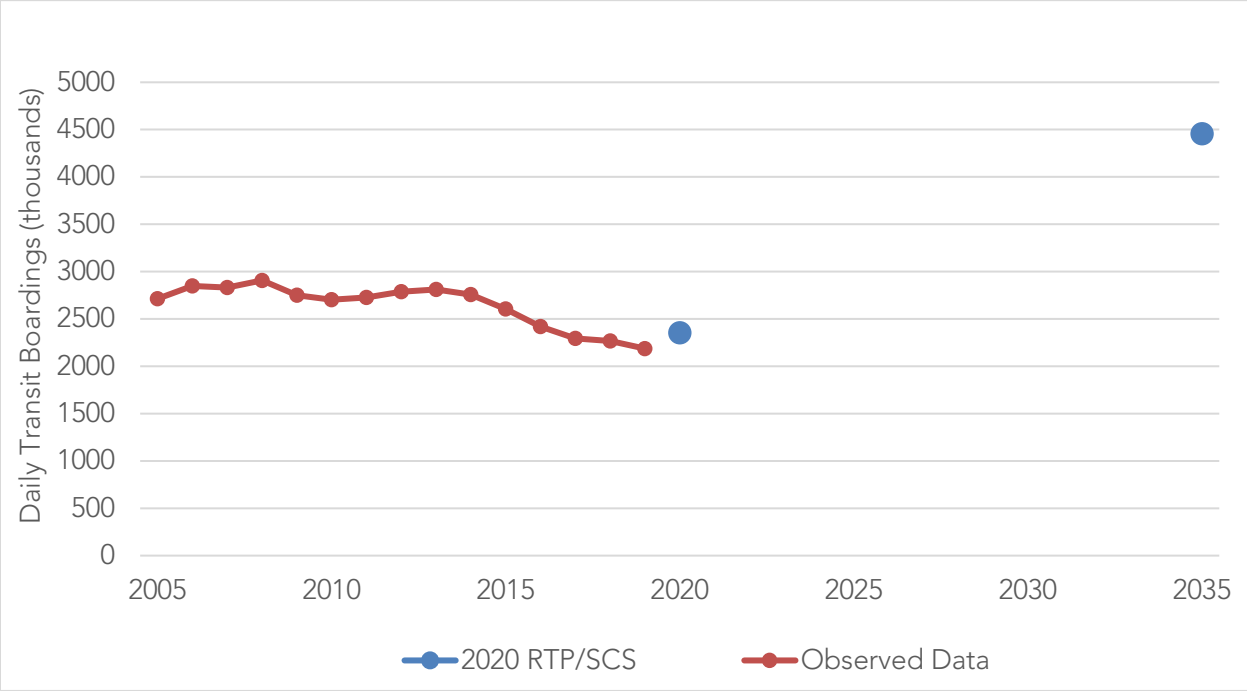
Annual Transit Ridership

CARB staff used the National Transit Database (NTD)[74] published monthly transit boarding numbers (unlinked trips) reported by local transit agencies to determine the historical monthly and annual boarding numbers in the SCAG region. This dataset cover 2005 to 2019.

Figure 9 shows observed annual transit ridership in SCAG in comparison to 2035 plan performance. The observed data are generally flat from 2005 to 2013 and then decrease through 2019, while SCAG's RTP/SCS forecasted transit ridership in 2035 is more than twice the observed 2019 value. The trend between 2013 and 2019 is heading in the wrong direction relative to the expected plan outcomes.

[74] National Transit Database, NTD data.

Figure 9. SCAG Region Annual Transit Ridership



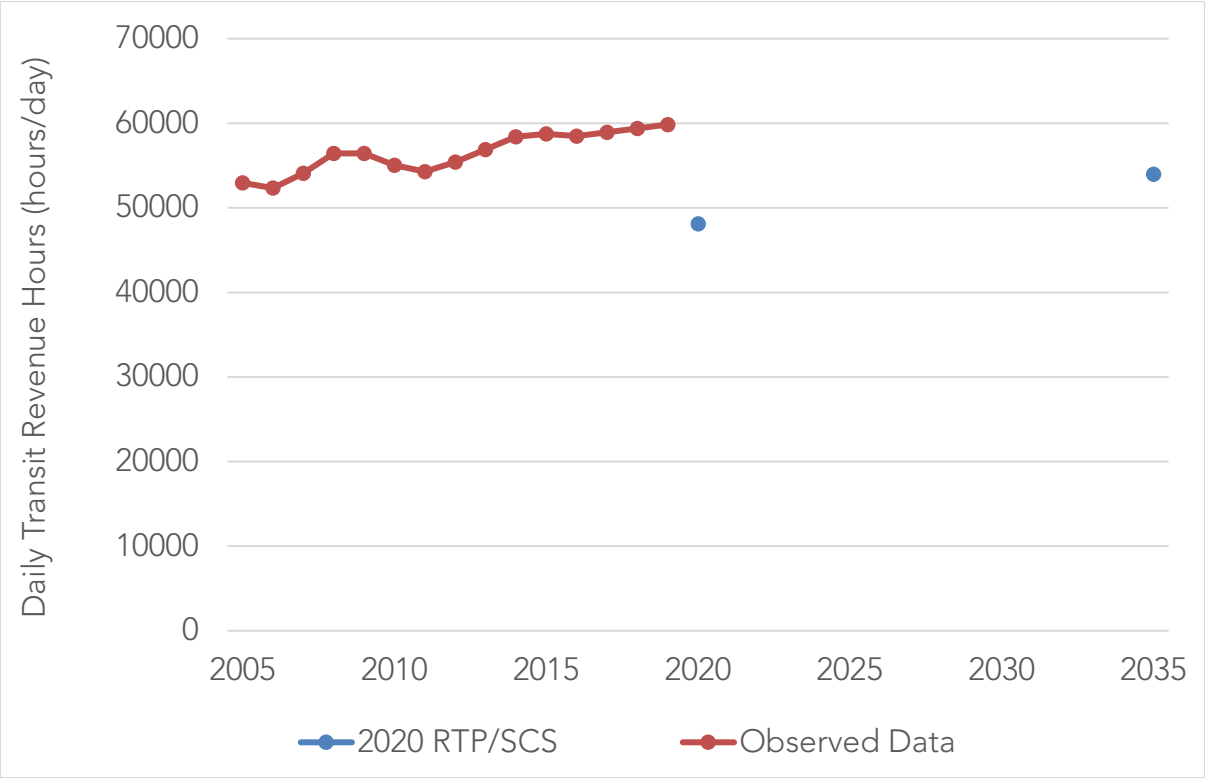
Daily Transit Service Hours

The National Transit Database (NTD) publishes monthly boarding numbers (unlinked trips) reported by local transit agencies. CARB staff calculated the monthly and annual revenue hours in SCAG region based on this NTD dataset from 2005 to 2019[75]. Total transit revenue hours in SCAG were then adjusted to daily transit revenue hours.

Observed NTD transit revenue hours increases from 2005 to 2019 as shown in Figure 10. However, SCAG's 2020 SCS forecasts transit revenue hours to be less than the observed data, since it only covers fixed-route transit services and it does not include demand response services. According to NTD, demand response service accounted for about 25 percent of the regional transit service hours in 2016.

[75] National Transit Database, NTD data.

Figure 10. SCAG Daily Transit Service Hours



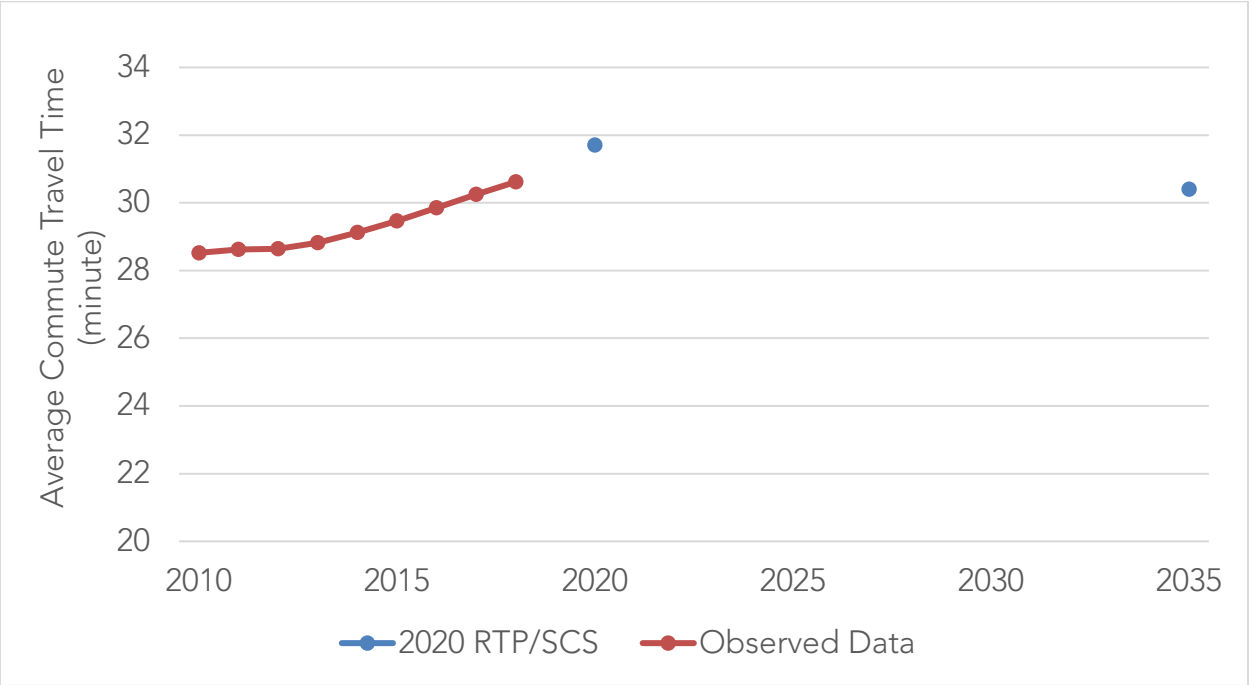
Commute Trip Travel Time

CARB staff analyzed commute trip travel times from 2010 to 2018 using data from the American Community Survey[76] data. A population-weighted approach was used to calculate total travel times by county and then aggregated to the SCAG region.

Figure 11 shows historical commute time in comparison to SCAG's 2020 RTP/SCS average commute time. SCAG's 2020 RTP/SCS forecasts a 1.3-minute reduction in commute time from 2020 to 2035, while the observed data increase from 2010 to 2018, away from the expected plan outcome for 2035.

[76] U.S. Census Bureau, American Community Survey.

Figure 11. SCAG Commute Time



New Homes Built by Type

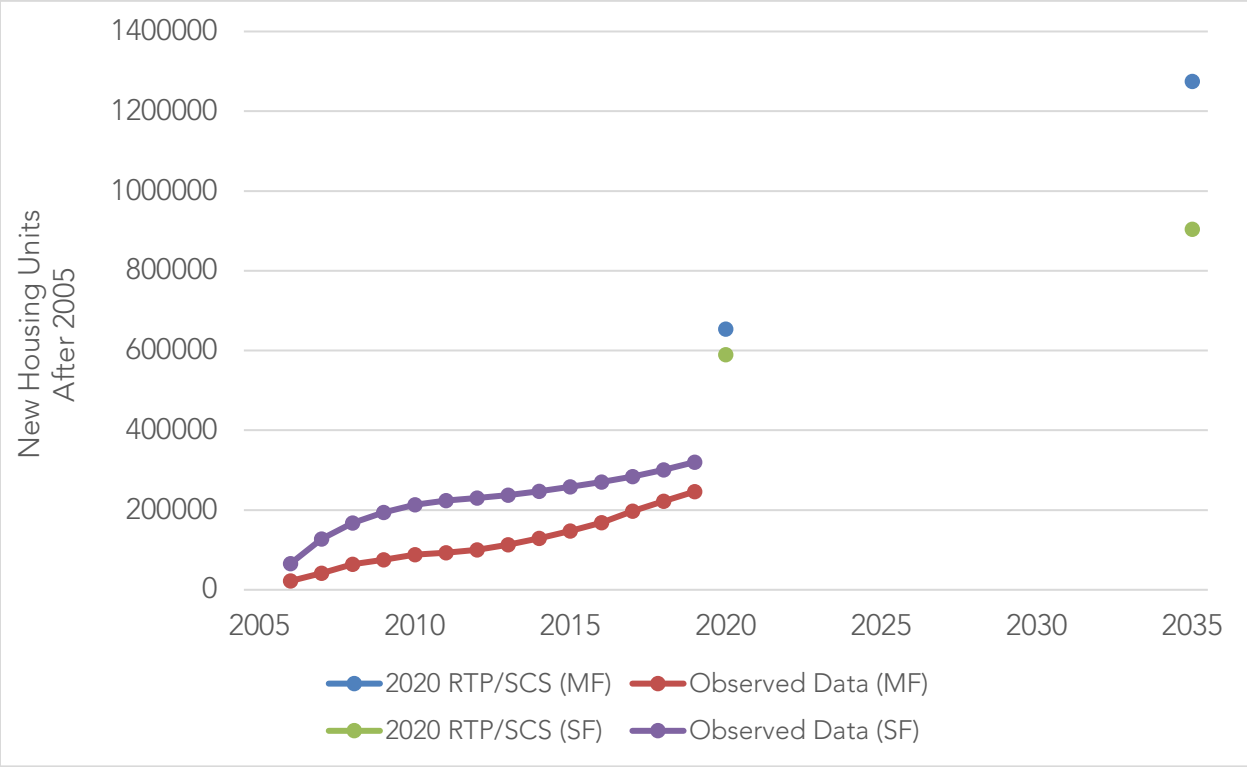
CARB staff analyzed the rate of new homes being built by type in the SCAG region from 2005 to 2019 using the California DOF datasets including E-5 (for years 2011 to 2019) and E-8 (for years 2005 to 2010)[77]:

Figure 12 shows the historical number of new single-family and multi-family housing units in the SCAG region. Since 2005, there have been 589,338 new single-family and 653,850 new multi-family housing units built in the region. During this period, single-family housing has represented a greater share of the new housing units built and that share has stayed relatively constant. In 2019, 320,147 new single-family housing units and 246,249 new multi-family housing units were built. The 2020 SCAG RTP/SCS forecasts 903,877 new single-family housing units and 1,275,295 multi-family housing

[77] California Department of Finance, rate of new homes being built by type.

units to be built in 2035, with multi-family housing units representing a much greater share of housing than single-family housing units. While the total number of observed housing units is increasing consistent with the plan, the share of single-family is heading in the wrong direction relative to the expected plan outcomes.

Figure 12 New Single- and Multi-Family Housing Units Built in the SCAG Region



In summary, CARB staff compared the observed data for regional average household vehicle ownership, annual transit ridership, daily transit service hours, commute trip travel time, and new homes built by type with the projected plan performance indicators provided by SCAG. Based on the analysis none of the observed data are heading in the right direction, toward the expected plan outcomes. Therefore, CARB staff concluded that SCAG is not on track to meet its GHG target.

Incremental Progress

CARB staff reviewed the incremental progress of SCAG's 2020 SCS compared to its 2016 SCS in place in October 2018, in accordance with Board direction and the 2019 Evaluation Guidelines.[78] As background, during the 2018 regional GHG target update process, some of the MPOs reported to CARB that, due to external factors, even greater effort would be required to achieve the same level of per capita GHG emission reduction reported in the current SCSs. According to the MPOs, simply staying on course to achieve the previously demonstrated regional SB 375 GHG emission reduction targets would be a stretch of current resources, let alone achieving the more aggressive targets adopted by the Board in 2018. At that time, SCAG determined that the 2016 SCS would achieve approximately 4 to 5 percent less reductions than when it was adopted in 2016 simply due to changes in exogenous assumptions (e.g. auto operating cost)[79]. In other words, if during the target setting process SCAG had updated its 2016 SCS with exogenous assumptions current at the time, it would only achieve 13 to 14 percent per capita GHG reduction in 2035, well below the plan performance (and target) of 18 percent. SCAG's data indicated that in order to meet the new target of 19 percent, it would need to include another 5 to 6 percent GHG reductions in new and/or enhanced SCS strategies (i.e. incremental progress) in its 2020 SCS.

To determine whether SCAG is achieving the level of incremental progress consistent with what it reported during the target setting process, CARB staff intended to rely on analysis provided by SCAG consistent with methods put forward in the updated SCS Program and Evaluation Guidelines. That methodology called for a comparison of the 2016 SCS to the 2020 SCS under varying assumptions, controlling for as many exogenous factors as possible. For a variety of reasons, SCAG staff were not able to provide CARB with the information and data to conduct the incremental progress analysis envisioned. SCAG developed the 2020 SCS using a brand new modeling platform[80], and this shift from a trip-based model to an activity-based model made it more difficult for them to conduct the analysis CARB requested. For this reason, CARB staff evaluated incremental progress for SCAG's 2020 SCS by comparing strategy

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[78] CARB. Board Resolution 18-12 (March 22, 2018).
[79] CARB. Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets: Appendix B. MPO Scenario and Data Submittals. (October 2017).
[80] SCAG, 2016 Regional Travel Demand Model and Model Validation. April 2020.

assumptions between the 2016 and 2020 SCSs. While this type of analysis does not allow CARB to determine whether the magnitude of incremental progress is consistent with what SCAG reported during the target setting process, it still provides insights into whether SCAG is including new and or enhanced strategies.

Table 10 below provides a list of strategies included in the 2016 and 2018 SCSs, and the assumptions for those strategies. There are a number of new or enhanced strategies around transportation, pricing, new mobility, and land use. For example, bus and rail service miles increased by 32 percent and 5 percent respectively between the 2016 and the 2020 SCSs, along with a slight decrease in freeway lane miles. SCAG also included new pricing strategies in its 2020 SCS that were not in the 2016 SCS, including cordon pricing and TNC fees. In addition, SCAG added a number of new off-model strategies, including parking deregulation in transit priority areas, co-working, multimodal dedicated lanes, bike share/micromobility, transit/TNC partnerships, and EV incentives.

While incremental progress is not used for CARB's SCS determination, CARB expects MPOs to achieve incremental progress due to its SCS land use and transportation strategy commitments from its second SCS to its third SCS consistent with information shared during the GHG emission reduction target setting process. Information SCAG submitted during the 2018 target setting process indicated they would achieve 5 to 6 percent incremental progress as part of the 2020 SCS. While the information presented suggests that the 2020 SCS includes additional and enhanced strategies relative to the 2016 SCS, it is not sufficient to determine whether the magnitude of those new/enhanced strategies is consistent with the information SCAG shared during the 2018 target setting process.

Insufficient information to determine whether SCAG's incremental progress is consistent with the information it shared during the 2018 target setting process.

Table 10. SCAG's Incremental Progress

SCS Strategies	2016 SCS Strategy Assumptions	2020 SCS Strategy Assumptions	Change Supportive of New/Enhanced Strategies
Freeway (Lane Miles)	11,716	11,558	*Supportive*
Bus (Transit Service Miles)	599,602	627,485	*Supportive*
Rail (Transit Service Miles)	104,310	137,686	*Supportive*
Cordon Pricing[81] ($/entry)	N/A	4.00[82]	*Supportive*
Express Lane Pricing[83] ($/mile)	0[84]-2.65	0-2.65[85]	*No Change*
Mileage User Fee ($/mile)	0.028	0.020[86]	*Not Consistent*
Job Center Parking ($/hour)	N/A	50% of base fare[87]	*Supportive*

[81] Cordon pricing, also known as congestion pricing, is reflected in the activity-based modeling to reduce VMT and is explicitly accounted as a revenue source in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions).
[82] SCAG Model Sensitivity Test Report, page 21.
[83] Express lane pricing is reflected in the activity-based modeling to reduce VMT and accounted as an existing revenue source in the Transportation Finance Technical Report (in Table 3.1 Core & Reasonably Available Revenue Projections—Local Core Revenue Sources, in Nominal Dollars, Billions).
[84] Pricing varies by time of day, and some periods may not be priced at all (i.e. zero price).
[85] SCAG, Connect SoCal SCS Submittal Tables, Table 1 SCS Data.
[86] The mileage user fee consists of three components, which are reflected in the Transportation Finance Technical Report (in Table 2, New Revenue Sources & Innovative Financing Strategies, in Nominal Dollars, Billions): $0.025 per mile is to replace gas taxes from 2030 (and therefore not included as an SCS strategy); $0.015 per mile as regional VMT fee from 2030; and $0.05 per mile as TNC user fee. In the activity-based modeling 1% (i.e., $0.005) of TNC user fee is applied to all VMT in the region in order to capture the proportional TNC population.
[87] Job center parking price is reflected in the activity-based modeling to reduce VMT and is accounted as a revenue source in the Transportation Finance Technical Report.

SCS Strategies	2016 SCS Strategy Assumptions	2020 SCS Strategy Assumptions	Change Supportive of New/Enhanced Strategies
Work from Home/Telecommute (% of workers)	10%	0%	*Not Consistent*
Transportation Demand Management	N/A	1.5%	*Supportive*
Off-model Strategies	Improved Pedestrian/bike Infrastructure, Safe Routes to School, Electric Vehicle Charging Infrastructure, Car Share	Improved Pedestrian Infrastructure, Safe Routes to School, Electric Vehicle Charging Infrastructure, Car Share Average Vehicle Ridership for Job Centers, Parking Deregulation in Transit Priority Areas, Co-Working, Multimodal Dedicated Lanes, Electric Vehicle Incentives, Transit/TNC Partnership Program, Bike Share & Micromobility	*Supportive*

SCS Strategies	2016 SCS Strategy Assumptions	2020 SCS Strategy Assumptions	Change Supportive of New/Enhanced Strategies
Land Use and Demographics	Transit Priority Areas, High Quality Transit Areas and Livable Corridors	Transit Priority Areas, High Quality Transit Areas, Livable Corridors Job Center Strategy & Neighborhood Mobility Areas	*Supportive*

Notes:
N/A means not applicable

Equity

MPOs may report to CARB a summary of how they conducted equity analyses as part of the development of their SCSs in accordance with the California Transportation Commission's *2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations*.[88] The Environmental Justice (EJ) Technical Report[89] of SCAG 2020 SCS documented SCAG's equity analysis. CARB staff reviewed this EJ Technical Report and prepared this section to summarize SCAG's 2020 SCS equity work, including identified communities of concern, equity performance measures, equity analysis, and public participation efforts.

Identifying Vulnerable Communities

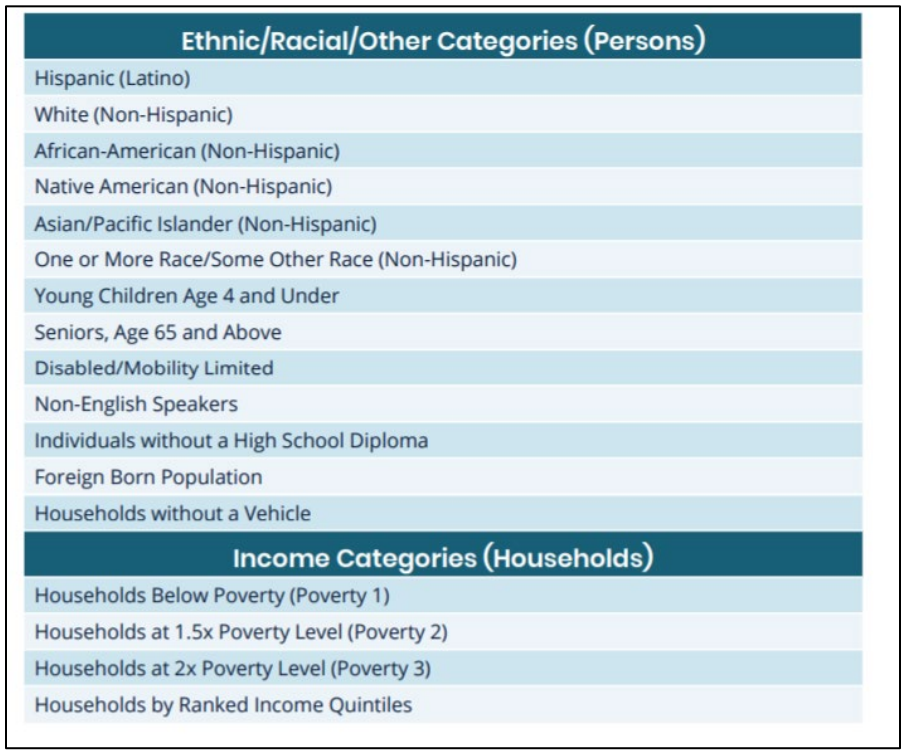
SCAG's 2020 SCS states that its EJ Technical Report not only meets legal requirements, but goes beyond them in considering other population characteristics such as children, elderly populations, vehicle-less households, individuals without a high school diploma, and areas designated as disadvantaged by Senate Bill (SB) 535 (DeLeon).[90] SCAG staff conducted extensive outreach to EJ stakeholders and the general public during the EJ Working Group meetings, targeted EJ outreach, and Connect SoCal Public Workshops to gather feedback. For both the outreach and analysis process, EJ communities were identified to include all low-income[91] and minority populations.[92] SCAG also analyzed other demographic categories as shown in Figure 13, Figure 13.as well as income by quintiles as shown in Figure 14. Figure 15Figure 15shows all the EJ communities identified in the SCAG region, which include EJ Areas, SB 535 Disadvantaged Communities, and Communities of Concern. Based on these criteria, key characteristics of the region's EJ analysis areas include[93]:

[88] California Transportation Commission. *2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations*. (January 2017).
[89] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report:
[90] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 4.
[91] The poverty classification is a federally established income guideline used to define persons who are economically disadvantaged as outlined by the U.S. Department of Health & Human Services guidelines.
[92] Executive Order 12898, U.S Department of Transportation, and Federal Highway Administration Orders on EJ define "minority" as persons belonging to any of the following groups, as well as "other" categories that are based on the self-identification of individuals in the Census: African American, Hispanic, Asian/Pacific Islander, and Native American and Alaskan Native.
[93] This section includes summary information from SCAG's Environmental Justice Technical Report.

- In 2016, about 69 percent of the population in the SCAG region belonged to a racial or ethnic group other than White, non-Hispanic, while about 15 percent of the population was in poverty.
- Since 2000, the share of households living in poverty has increased from about 13 percent to about 15 percent in the SCAG region.
- About 62 percent of the region's population (about 12 million people) live in an EJ area.
- About 34 percent of the region's population (about 6 million people) live in a disadvantaged community.
- About 21 percent of the region's population (4 million people) live in a community of concern.

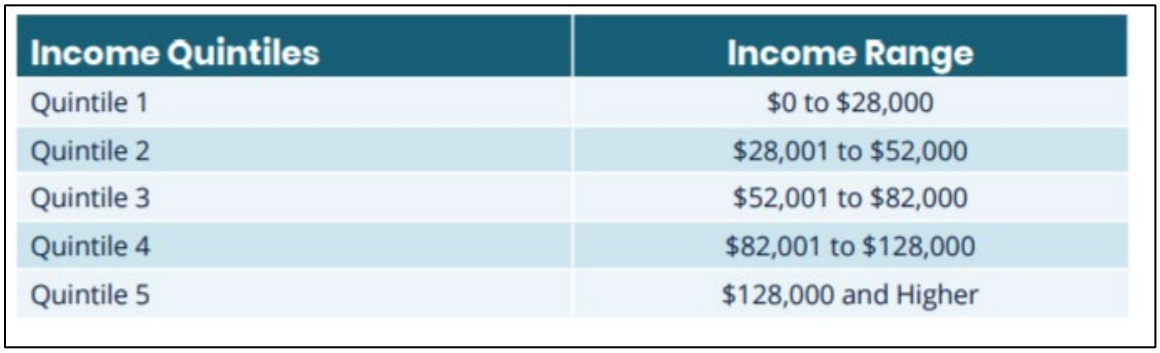
Since 2000, the share of households without a vehicle has gone down, from about 10 percent to about 7 percent. Meanwhile, the share of households with more than three vehicles has increased from about 18 percent to about 24 percent.

Figure 13. Demographic Categories Analyzed by SCAG



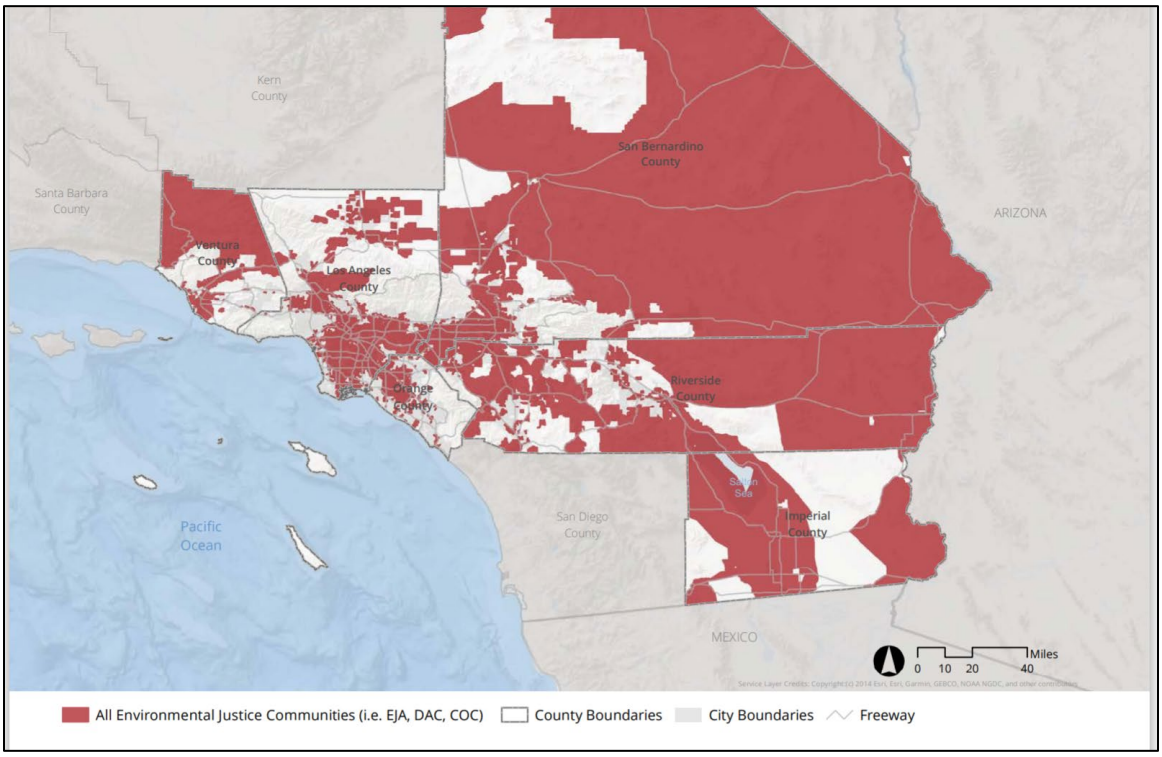
Ethnic/Racial/Other Categories (Persons)
Hispanic (Latino)
White (Non-Hispanic)
African-American (Non-Hispanic)
Native American (Non-Hispanic)
Asian/Pacific Islander (Non-Hispanic)
One or More Race/Some Other Race (Non-Hispanic)
Young Children Age 4 and Under
Seniors, Age 65 and Above
Disabled/Mobility Limited
Non-English Speakers
Individuals without a High School Diploma
Foreign Born Population
Households without a Vehicle
Income Categories (Households)
Households Below Poverty (Poverty 1)
Households at 1.5x Poverty Level (Poverty 2)
Households at 2x Poverty Level (Poverty 3)
Households by Ranked Income Quintiles

Figure 14. Income Distribution by Quintiles Analyzed by SCAG



Income Quintiles	Income Range
Quintile 1	$0 to $28,000
Quintile 2	$28,001 to $52,000
Quintile 3	$52,001 to $82,000
Quintile 4	$82,001 to $128,000
Quintile 5	$128,000 and Higher

Figure 15. All Environmental Justice Communities in the SCAG Region



Equity Performance Measures

SCAGs EJ analysis attempted to determine if the SCS has a disproportionate negative impact on the low-income population and/or minority populations in identified communities in the region and if there are any disparate impacts specifically based on race, color, national origin, etc. SCAG's EJ analysis identified 18 performance indicators to understand the RTP/SCS impacts on environmental justice areas, disadvantaged communities, and communities of concern, including:

1. Jobs-Housing Imbalance
2. Neighborhood Change and Displacement
3. Accessibility to Employment Services
4. Accessibility to Parks and Educational Facilities
5. Active Transportation Hazards
6. Climate Adaptation
7. Public Health Analysis
8. Aviation Noise Impacts
9. Roadway Noise Impact

10. Emissions Impacts Analysis (PM2.5 & CO):
11. Emissions Impacts Along Freeways
12. Travel Time & Travel Distance Savings
13. Rail Related Impacts
14. Share of Transportation System Usage
15. Connect SoCal Revenue Sources in Terms of Tax Burdens
16. Connect SoCal Investments vs. Benefits:
17. Geographic Distribution of Transportation Investments
18. Impacts from Funding Through Mileage-Based User Fees

In this document, CARB focused on the effect of the SCS on land use equity, access, and public health[94].

Land Use Equity Performance Measures

SCAG acknowledged that neighborhood gentrification and displacement resulting from transportation investments on a region-wide basis is challenging and that attention should be given on a project-by-project basis to carefully understand local neighborhood dynamics and ensure equitable access to the benefits of improved infrastructure.

To understand where the region currently is and to understand where to monitor, SCAG conducted a historical jobs-housing imbalance analysis as well as an analysis on neighborhood change and displacement. The jobs-housing imbalance analysis looked at median commute distance of low wage workers as well as jobs-housing fit between available housing types and the income level of residents. To assess neighborhood change, SCAG looked at criteria around gentrification, including; increase in college educated, increase in non-Hispanic white, increase in median household income, and increase in median gross rent. SCAG analyzed displacement by looking at data on moving and migration flows.

The trends for both jobs-housing imbalance and change and displacement in the region appear to be somewhat improving. The commute distance grew in all six counties between 2002 and 2016, while it slightly decreased between 2012 and 2016.

[94] For more information on the other performance indicators see SCAG's Environmental Justice Technical Report.

From 2010 to 2016, the ratio of jobs to housing increased from 1.10 to 1.19, but the ratio of low wage jobs to affordable rental units decreased from 0.94 to 0.89 during the period.

SCAG's analysis of neighborhood change across the region identified 40 census tracts[95] that have been persistently changing across recent decades. However, these tracts are not disproportionately located in EJ areas, Disadvantaged Communities, or Communities of Concern.

Accessibility Performance Measures

SCAG assessed accessibility impacts from the RTP/SCS to important destinations such as employment, shopping, parks and schools for the region's EJ population. For both transit and auto accessibility performance measures, SCAG used a 30 minute benchmark for travel time to the destinations by automobile, and 45 minutes of travel time to destinations by transit during the evening peak period.

Based on these performance measures, SCAG found that the share of the region's total employment and shopping destinations that are accessible to each EJ group within 30 minutes of travel by auto, or 45 minutes on transit and accessibility will improve. SCAG's EJ analysis, suggests that the overall accessibility to parks and natural lands will improve because of the RTP/SCS, both for the region as a whole and for the EJ population.[96] SCAG also acknowledges that its results show local parks and other natural lands are less accessible by public transportation than by automobile, especially to National Forests. However, with the implementation of the RTP/SCS, accessibility to local parks and other natural lands will increase more for public transit modes than for automobiles at all levels of analysis[97].

[96] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report: Table 25 (pages 81-86) and Table 29 (pages 93, 94).
[97] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report: Figures 11-16 (pages 87-88).

Health and Environment Performance Measures

SCAG's EJ analysis also looked at human health and environmental effects measures living and working within 500 feet of major roadways as an indicator of risk of exposure to toxic air contaminants from proximity to major roadways from the RTP/SCS.

SCAG's EJ analysis projected that by 2045, approximately 5 percent of the region's population will live within 500 feet of freeways and high traffic roads and 9 percent of the population will work within it.

The results showed that most EJ population groups show higher concentrations in areas near freeways and high-traffic roads than is seen in the greater region, except for seniors over age 65, African Americans, and those identifying as "Other Race." Based on the analysis, SCAG projects that the share of most EJ population groups in areas adjacent to freeways and high traffic roads will increase in 2045.

The SCS documented that concerns were raised[98] by environmental groups, the health community, housing groups, and air quality regulation agencies about incompatible land uses, including sensitive receptors such as hospitals, senior/daycare centers, and housing near freeways and busy roadways. According to SCAG[99], the land use strategies in the SCS call for redirecting future growth into high-quality transit areas (HQTAs) and as a result, part of this growth will occur in areas where high-quality transit areas overlap with areas within a distance of 500 feet from freeways and high-traffic roads. Neighborhoods where HQTAs overlap with areas within 500 feet of freeways and high-traffic roads accommodate about 3 percent of all regional households and about 5 percent of regional employment by 2045.[100]

Public Outreach and Engagement

SCAG held 28 public workshops for the SCS along with other activities[101]. Workshops were held in all of the region's six counties. Feedback and comments from the workshops were incorporated into the technical analysis. In addition, an online survey was conducted that reduced barriers of having to attend in person to participate.

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[98] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 138.
[99] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 138.
[100] SCAG, 2020 RTP/SCS, Environmental Justice Technical Report, page 141.
[101] SCAG, 2020 RTP/SCS, Public Participation and Consultation Technical Report.

In 2018, SCAG also convened an EJ Working Group (EJWG) to vet ideas and receive feedback on its EJ analysis, in addition to other workgroups on the RTP/SCS. SCAG held five EJWG meetings to discuss development of Connect SoCal, its EJ technical analysis, and gather input from EJ stakeholders.

In addition, SCAG developed "Community Partner Toolkits" as an outreach resource. The toolkits contained workshop fliers in various languages, adaptable sample letters, email blasts and social media posts—and were distributed by SCAG staff and the outreach team to elected officials, community based organizations and other grassroots organizations to create awareness about Connect SoCal.