

**California Air Resources Board**  
**Updated Final Staff Report**  
**Proposed Update to the SB 375 Greenhouse Gas Emission Reduction**  
**Targets**

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**February 2018**



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<b>List of MPO Acronyms Used Throughout this Report</b>
AMBAG – Association of Monterey Bay Area Governments
Butte CAG – Butte County Association of Governments
Fresno COG – Fresno Council of Governments
Kern COG – Kern Council of Governments
Kings CAG – Kings County Association of Governments
Madera CTC – Madera County Transportation Commission
Merced CAG – Merced County Association of Governments
MTC/ABAG – Metropolitan Transportation Commission/Association of Bay Area Governments
SACOG – Sacramento Area Council of Governments
SANDAG – San Diego Association of Governments
Santa Barbara CAG – Santa Barbara County Association of Governments
SCAG – Southern California Association of Governments
Shasta RTA – Shasta Regional Transportation Agency
San Joaquin COG – San Joaquin Council of Governments
San Luis Obispo COG – San Luis Obispo Council of Governments
Stanislaus COG – Stanislaus Council of Governments
Tahoe MPO – Tahoe Metropolitan Planning Organization
Tulare CAG – Tulare County Association of Governments

# I. Introduction

Transportation and land use design have a profound and varied impact on individuals and communities. The resulting economic, social, and environmental conditions in which people are born, live, work, and age powerfully influence their quality of life and life expectancy, and can perpetuate existing racial and class inequities. Thoughtful transportation and land use planning can provide greater mobility options that can improve access to employment, food, health care, community services, and other important drivers of health and wellness. In addition, the condition of communities; including whether there are affordable, safe housing choices, sidewalks, parks, playgrounds, and amenities like libraries; also plays a critical role. Dependence on cars has a direct impact on levels of physical activity and health outcomes. Designing communities to promote increased physical activity can reduce risks from chronic diseases to such an extent that it would rank among the top public health accomplishments in modern history, and help reduce the billions of dollars California spends each year to treat these diseases.<sup>1</sup> In addition to the numerous social, economic, and public health benefits, integrated land use and transportation planning has the potential to strengthen resilience to disasters and changing climate, and is central to meeting the State's climate and air quality goals.

The Sustainable Communities and Climate Protection Act of 2008, Senate Bill (SB) 375, (Chapter 728, Statutes of 2008) is intended to encourage regional planning that integrates land use and transportation policy in a way that reduces greenhouse gas (GHG) emissions from driving, and ultimately results in healthier, more efficient, and equitable communities. Under SB 375, the development and implementation of Sustainable Communities Strategies (SCSs), which link transportation, land use, housing, and climate policy, are designed to reduce per capita GHG emissions, while improving air quality, expanding transportation and housing options, and promoting land conservation.

SB 375 has transformed regional planning in California by raising awareness of the importance of transportation planning as a means of shaping more livable and equitable communities. It has resulted in greater communication between regional planning agencies, local governments, and stakeholders who support more sustainable land use

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<sup>1</sup> See California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

and transportation policies. Furthermore, it has encouraged development of a new generation of regional transportation plans that include more creative thinking about smart growth and increasing mobility choices to reduce GHG emissions, as well as generate numerous public health, economic, mobility, housing, and land conservation benefits associated with a lower carbon future.

Under SB 375, the California Air Resource Board (CARB or Board) is required to establish the regional GHG emissions reduction targets (targets), originally established in 2010. Statute requires regions to demonstrate achievement of those targets through an SCS, which is an integral component of the federally required Regional Transportation Plan (RTP).

At the time of this writing, adoption of the first round of SCSs by California's 18 Metropolitan Planning Organizations (MPO) is complete, and the second and in some cases third rounds of SCS planning are underway. To date, CARB staff reviewed the final determinations of all 18 MPOs, and concluded that, if implemented, all SCSs but one would achieve the SB 375 targets.<sup>2</sup> Many of the MPOs indicated that they expect to exceed the original targets. CARB staff recognizes the very strong performance in these first SCSs as a major success.

CARB is in the process of updating the SB 375 targets, which will take effect in 2018, as required by the law. This staff report presents CARB staff's recommendation for updated targets and the technical and policy rationale supporting the recommendation. Staff's recommendation is based on challenges faced and lessons learned during the first rounds of regional SCS plan development, recent public outreach, and the objective of achieving the outcomes described above. Staff proposes to increase the targets, and shift the focus of the program more squarely onto the SCSs. The goal of this new approach is to ensure that the MPOs continue to innovate, while emphasizing implementation and accountability. In addition to increasing the GHG emissions reduction targets themselves, the following new program changes are being proposed: 1) transitioning the current program targets to recognize and isolate the incremental changes the regions are making to their land use and transportation policies and investments from plan-to-plan; and 2) incorporating additional reporting and data tracking related to their investments, transportation project lists, and SCS implementation over time.

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<sup>2</sup> At the time of publication for this Staff Proposal, Merced CAG's SCS was still under review by CARB.





The target recommendations identified in this report were developed through a coordinated analysis of what would be necessary to achieve the State’s ambitious climate and air quality goals (a “top-down” process) and MPO target recommendations (a “bottom-up” process) as inputs. CARB staff attempted to strike a balance between the bottom-up and top-down inputs and propose a set of targets that would meet the objectives defined by SB 375, principles established by the Board during adoption of the original targets in 2010, recommendations in the 2017 Climate Change Scoping Plan Update (Scoping Plan Update), and experience gained from SB 375 implementation to date.

The process provided an opportunity to reflect on and increase our understanding of opportunities and barriers to aligning our State’s transportation and environmental goals. One key lesson learned has been that new commitments to influence land use and transportation policy are needed from both regional and local stakeholders and the

State. With that realization and the current framework of the SB 375 program, CARB staff were challenged to develop updates to regional targets for MPOs that reinforced the importance of additional action on local and regional land use and transportation policies to help achieve greater emission reductions, while also acknowledging the necessity for, and interconnection with, future State actions in this space.

In some areas of land use and transportation policy, separating State and local authority, influence, and responsibility is clear. In others it is less so, and policy advancement will require further cooperative action between regional and local stakeholders and the State.

The purpose of this staff report is to provide the Board and the public with an opportunity to discuss and comment on CARB staff's recommended targets. This staff report describes CARB's statutory role to establish targets, reviews the current SB 375 targets and existing SCSs prepared to date, and reflects on several State, regional, and local land use and transportation planning issues that affect SB 375 implementation. The process to develop staff's recommendation for the updated SB 375 targets, environmental analysis, and the alternatives to the recommendation that were considered are discussed in this report. Finally, this staff report describes public outreach activities that have occurred to date, future opportunities for input, and next steps in CARB's process to update the targets and support implementation.

## II. SB 375 Target Update Context and Objectives

Under SB 375, CARB is required to adopt regional GHG emissions reduction targets for each of the 18 MPO regions in California, and to update those targets every eight years, with the option of revising them every four years. This is the eight-year update of the original targets CARB set in 2010, indexed to years 2020 and 2035. This section describes CARB's role in developing SB 375 targets and staff's objectives for the target update.

CARB's considerations for the target update, as summarized below, are defined by relevant portions of SB 375 law, principles established during adoption of the first target setting process in the final staff report and Board Resolution 10-31, the Scoping Plan Update, along with lessons learned based on SB 375 implementation to date.

- **SB 375 law.** CARB must consider changes in GHG emissions reductions resulting from improved vehicle emission standards, changes in fuel consumption, and other measures that will reduce GHG emissions as part of the target update process. SB 375 also requires consultation between CARB, the Department of Transportation, MPOs, local governments, affected air districts, and public and private stakeholders. SB 150 (Allen, Chapter 646, Statutes of 2017) amended SB 375 to require CARB to prepare a report to the Legislature starting in 2018, and every four years thereafter, that discusses regional changes in GHG emissions. This report will use data-supported metrics to assess progress toward statewide climate goals including SB 375 strategies, as well as the effect of State policies and funding programs. It will also include a discussion of best practices and regional challenges to achieving greater reductions.
- **CARB's 2010 Final Target Setting Staff Report and Board Resolution 10-31.** The final staff report and associated Board Resolution for the 2010 SB 375 target setting process state that targets should be set to achieve a balance between goals that motivate further positive planning and action toward more sustainable communities, but not be out of reach for regions and local governments. Target updates should consider updated technical data/forecasts, advancement of technical tools and methods, measures of achievement of emissions reductions, as well as advances in the measurement of co-benefits.<sup>3</sup>

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<sup>3</sup> See California Air Resources Board, Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375, August 9, 2010, [https://arb.ca.gov/cc/sb375/staffreport\\_sb375080910.pdf](https://arb.ca.gov/cc/sb375/staffreport_sb375080910.pdf); and Board Resolution 10-31, September 23, 2010, [https://www.arb.ca.gov/cc/sb375/eo\\_attachment.pdf](https://www.arb.ca.gov/cc/sb375/eo_attachment.pdf).

- **CARB's 2017 Climate Change Scoping Plan Update.** The Scoping Plan Update identifies reductions in vehicle miles travelled (VMT) as a necessary part of the statewide strategy to achieve California's 2030 statewide emissions target. VMT reduction is to be achieved, in part, through more stringent SB 375 targets for 2035 and associated SCS planning. The Scoping Plan Update also prioritizes support for improving community health and air quality. CARB staff's initial analysis of the Scoping Plan Update's public health co-benefits shows that SB 375 and supportive strategies will be the primary driver for those benefits. With emphasis on more walkable, livable neighborhoods, people are able to live more active lifestyles, which leads to better health. And when GHG emissions are reduced from vehicles, other air contaminants that are harmful to human health are also reduced.

Furthermore, since the Board originally set SB 375 targets in 2010, regions across the State have developed and adopted over 20 regional plans containing SCSs, which generated many lessons learned along the way for consideration. These lessons are reflected in numerous positive changes as part of SCS planning processes, including:

- More engagement and coordination between MPOs and local jurisdictions around land use policy;
- Advances in modeling tools that allow more sophisticated land use and transportation scenario testing;
- Increased emphasis on infill development;
- Increased funding allocated to public transit and active transportation;
- New organizational principles around which MPOs can rally public support, for example: priority development areas and assessment of the multiple healthy community, social equity, and environmental benefits that accompany sustainable communities; and
- Increased public dialogue about equitable distribution of public benefits.

At the same time, MPOs and local agencies have identified challenges to implementing their current plans, principally tied to the need for additional and more flexible revenue sources to incentivize further positive planning and action toward sustainable communities.

As such, CARB staff has identified the following objectives for the SB 375 target update:

- Account for GHG emissions reductions that will be achieved by improved vehicle emission standards, changes in fuel composition, and other measures CARB has approved that will reduce GHG emissions in the affected regions, and

prospective measures CARB plans to adopt to reduce GHG emissions from other GHG emissions sources.<sup>4</sup>

- Update targets with the most recent technical data, forecasts, and other information provided by the Department of Transportation, MPOs, local governments, affected air districts, and public and private stakeholders.
- Account for advancement of technical tools and methods, such as consistent standards for data and modeling assumptions, model improvements, and measures of achievement of emission reductions.
- Further the objectives set forth in SB 32 and Executive Order B-30-15, specifically with targets that would, if implemented, result in greater GHG emissions reductions directly from land use and transportation strategies compared to reductions that would be achieved under currently adopted SCSs. Targets would contribute to achieving the overall statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030, as well as support achievement of our statewide public health and air quality objectives.
- Achieve a balance between goals that motivate further positive planning and action toward more sustainable communities that foster co-benefits such as improved public health outcomes, more mobility choices, more housing choices, and resource and land conservation; and remain within the reach of regions and local governments.

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<sup>4</sup> As that term is defined in subdivision (i) of Section 38505 of the Health and Safety Code and consistent with the regulations promulgated pursuant to the California Global Warming Solutions Act of 2006 (Division 12.5 (commencing with Section 38500) of the Health and Safety Code).

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### III. Target Update Process

This section discusses the analyses CARB staff conducted and reviewed for the SB 375 target update, as well as the public engagement process to date. This includes work by CARB staff to: review statutory, technological, and other factors affecting SB 375 since the targets were originally set in 2010; modeling scenarios to evaluate what emissions reductions are needed from passenger vehicle transportation to achieve current statewide climate and air quality objectives; review of MPO target update analysis and recommendations, as well as consideration of public input.

#### A. Planning and Technical Consideration Changes Since 2010

Several statutory, technological, and policy factors have changed or evolved since the original targets were set in 2010. Directionally, some present opportunities and others present additional barriers to achieving further GHG emissions reductions through SB 375 targets. These factors and their implications for achieving CARB's target update objectives are summarized below and discussed further in Appendix E. SB 375 Program Background.

- **New executive and statutory directives on State climate commitments.** The Governor's Executive Order B-30-15 and SB 32 (Chapter 249, Statutes of 2016) established more aggressive statewide GHG emissions reduction goals (40 percent below 1990 levels by 2030) than were in place when SB 375 targets were first set in 2010. CARB's analysis shows the need for greater emissions reductions from all sectors, including passenger vehicle travel and integrated land conservation and development strategies, of which SB 375 is an integral part. Related to SB 375 there are important cross-sector interactions that impact GHG emissions reductions in other sectors including natural and working lands, energy, water, waste, industry, and agriculture.
- **State air quality commitments.** The federal Clean Air Act requires the State and local air districts to prepare State Implementation Plans demonstrating how the State will attain increasingly stringent air quality standards by specified dates. In March 2017, CARB adopted the State Strategy for the State Implementation Plan, a 15-year plan that outlines the strategies needed to attain the current standards in the two areas of the State with the most critical air quality challenges – the South Coast and the San Joaquin Valley air basins. The strategy includes further reduction in growth of VMT, through SB 375 and other

complementary efforts to reduce tailpipe emissions, as well as emissions from facilities that produce the fuels to power vehicles.<sup>5</sup>

- **Resources to implement sustainable communities projects.** Funding for building and maintaining sustainable communities transportation and landside infrastructure projects continue to be a challenge. However, the State has recently directed new funding through SB 1 Transportation Funding; Greenhouse Gas Reduction Fund Transformative Climate Communities Program, Transit and Intercity Rail Capital Program (TIRCP), and Low Carbon Transit Operations Program (LCTOP); and Volkswagen Settlement, that should support and incentivize greater SB 375 emissions reductions.
- **The cost of driving.** Travel behavior is influenced by a number of factors including personal income, the costs of owning and operating a vehicle, mobility options, the time cost of travel, urbanization, and highway capacity. Since the targets were first set, there have been changes in the economy, cost of gasoline, and fuel efficiency of vehicles that have resulted in greater vehicle usage. Without additional policy intervention, like road user, congestion, and/or parking pricing, alongside expanded mobility options, vehicle travel will increase and can erode emissions reductions achieved through SB 375. Therefore, new mobility pricing policies are necessary to encourage more efficient driving behavior, including legislation to remove barriers for MPOs and locals to implement pricing.
- **Broadening technology and mobility choices.** Our transportation system is changing through proliferation of new vehicle technologies, fuels, and mobility choices. There is uncertainty regarding the potential impact on VMT and GHG emissions resulting from these new technology and mobility choices; recent studies have indicated potential for both positive and negative impacts. Therefore, it will be important for the State and regional and local governments to explore future policies and regulations aimed at curbing the negative impacts of these technologies.
- **Demographics.** Since targets were set, several research projects have been completed or are underway exploring how travel behavior may be changing with

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<sup>5</sup> See California Air Resources Board, Revised Proposed 2016 State Strategy for the State Implementation Plan, March 7, 2017, <https://www.arb.ca.gov/planning/sip/2016sip/rev2016statesip.pdf>.



changing demographics in California. Particular interest has been paid to data showing that millennials or members of “Generation Y” postpone the time they obtain a driver’s license, often live in urban locations and do not own a car, drive less if they own one, and use alternative travel modes more often.<sup>6</sup> With continued implementation of already identified SB 375 strategies, as well as new strategies, that make it possible for millennials and subsequent generations to adhere to the travel and residential preferences they are exhibiting now and as they age, it is anticipated that SB 375 emission reductions will be greater than currently estimated.

- **Modeling tool capabilities.** The modeling tools local agencies are using to quantify GHG emissions reductions and other co-benefits from SB 375 strategies have continued to improve and provide decision makers with better information on the potential impacts of their land use policy and transportation investment choices. While the data and models still do not completely capture all the benefits or consequences of these strategies, their continued improvement is anticipated to enable many MPOs to demonstrate the ability to achieve greater SB 375 GHG emissions reductions, as well as improve strategies to reduce VMT.
- **Local actions.** Many cities and counties have taken action to set GHG emissions reduction targets, develop climate action plans, and make progress toward reducing emissions since SB 375 targets were set. In some cases, these have included strategies consistent with the region’s SCS to support SB 375 emissions reductions. The Scoping Plan Update recommends local governments aim to achieve a community-wide goal consistent with the statewide emissions limits, and the Under 2 MOU. Efforts to update and implement local plans at these levels are anticipated to further support achievement of greater GHG emissions reductions through SB 375.
- **New State vehicle miles traveled reduction strategy.** As part of the State’s Scoping Plan Update, the Administration also laid out its priorities for supporting local agencies on vehicle travel reduction going forward. Actions include developing and expanding funding and financing tools for infill development and related infrastructure, improving performance metrics used to select and design

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<sup>6</sup> See Appendix E. SB 375 Program Background for additional information.

transportation projects, expanding investments in transit and active transportation, and developing pricing policies. All of these measures will complement and support further achievement of greater GHG emissions reductions through SB 375. In some cases, the full anticipated benefits of these statewide strategies cannot be counted toward meeting the SB 375 targets, but they are expected to provide ancillary support to MPOs for adopting additional or enhanced strategies that may be counted toward the targets. For example, GHG emissions reductions coming from potential future statewide pricing will be accounted for by the State, but MPOs will be able to take credit for strategies resulting from investment of pricing revenues. CARB staff, our sister State agencies, the MPOs, and subject matter experts will continue to advance the conversation on identifying and developing these new State-level actions in a way that will help regions implement key SCS strategies and policies that maximize GHG emissions reductions, as well as co-benefits, in spring and summer this year. See Section V. Next Steps for further discussion.

- **Regulatory changes to support infill and transit oriented development.** Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013), which creates a process to change the way transportation impacts are analyzed under the California Environmental Quality Act (CEQA). Specifically, SB 743 requires the Governor's Office of Planning and Research to develop updates to the CEQA Guidelines to guide the analysis of project-level transportation impacts. Once the updated Guidelines go into effect, lead agencies will evaluate vehicle travel associated with new development as part of the project's environmental review, and, if the impact is significant, mitigate those impacts through vehicle travel-reducing measures, which will support achievement of SB 375 goals. In addition, the Governor recently signed 15 housing bills that address a variety of areas, including generating more money for affordable and subsidized housing, reducing regulatory burdens for developers, and incentivizing new development within cities.
- **Additional Funding Resources and Tools.** Since the time MPO target recommendations were developed, new funding and regulatory changes have been put in place, which are expected to further incentivize sustainable growth. The recently signed housing package addresses areas including generating more money for affordable and subsidized housing, reducing regulatory burdens for developers, and incentivizing new development within cities. New funding through passage of SB 1, as well as through the Greenhouse Gas Reduction Fund Transformative Climate Communities Program, and the Volkswagen Settlement Investments, totaling over \$53 billion in new funding over the next

10 years, has been identified to provide incentives for SB 375 implementation that, in most cases, were not analyzed.<sup>7</sup> SB 1 alone will increase transportation funding from \$7.5 billion annually to \$12.7 billion annually,<sup>8</sup> which has strong potential to support SB 375 goals and help leverage existing funds for local jurisdictions. For example, a large portion of the SB 1 funds are dedicated to the State Highway Operation & Protection Program (SHOPP) and Local Streets & Roads Maintenance Program, totaling \$3.4 billion in funding. These programs present an opportunity to incorporate SB 375 supportive strategies like complete street elements to improve mobility across the State. In addition, there is over \$800 million dedicated to active transportation, Sustainable Communities Planning Grants, transit and rail, as well as a new Congested Corridors program where projects must be consistent with an SCS.

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<sup>7</sup> See Senate Bill 1: [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB1](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB1); Assembly Bill 2722 (Transformative Climate Communities): [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160AB2722](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB2722); and Volkswagen Settlement: [https://www.arb.ca.gov/msprog/vw\\_info/vsi/vw-zevinvest/vw-zevinvest.htm](https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/vw-zevinvest.htm)

<sup>8</sup> The Legislative Analyst Office “Overview of the 2017 Transportation Funding Package” <http://www.lao.ca.gov/Publications/Report/3688>

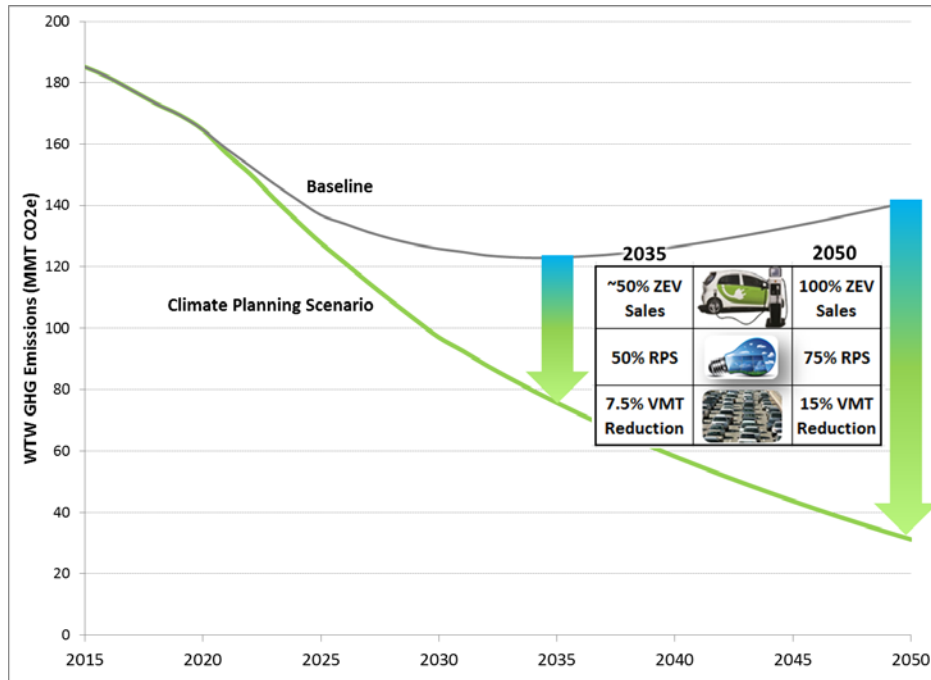
## **B. Top-Down Analysis: Achieving the State's Climate and Air Quality Goals**

Climate and air quality policy has continued to evolve since the SB 375 targets were established in 2010. Specifically, CARB has since been tasked with implementing SB 32 (Chapter 249, Statutes of 2016), which establishes a more aggressive statewide GHG emissions reduction goal (40 percent below 1990 levels by 2030) than was in place when the SB 375 targets were first set in 2010. There is also the ongoing need to meet federal air quality standards that provide essential public health protection. Statewide, approximately 12 million Californians currently live in communities that exceed the federal standards for ozone and fine particulate matter (PM<sub>2.5</sub>). The two areas with the most critical air quality challenges include the South Coast region, and the San Joaquin Valley.

CARB updated the Scoping Plan in December 2017 to reflect the new statewide goal for 2030 called for in SB 32. The Scoping Plan Update addresses emissions reductions from the transportation sector as a whole, and recommends strengthening SB 375 targets compared to what would occur under currently adopted SCSs as one of a suite of measures to achieve greater GHG emissions reductions.

The Scoping Plan Update relies on strategies in every single sector that are more aggressive than currently adopted regulations and policies. These include substantially greater increases in sales of zero-emission vehicles (ZEVs), greater increases in fuel efficiency standards for gasoline vehicles, continued decarbonization of energy, additional efficiencies in building and industrial energy efficiency, reductions in short-lived climate pollutants, continuing the Cap & Trade program, and a reduction in growth of statewide VMT. Figure 1 illustrates the combined contributions of GHG emissions reductions envisioned for the passenger vehicle sector. As the figure shows, by 2035 the State will need approximately half of new cars sales to be zero emission, half of transportation fuels to come from renewable sources, and a 7.5 percent reduction from 2035 baseline VMT through passenger vehicle activity efforts such as SB 375 and other State strategies. The GHG emissions reduction contribution from VMT is a comparatively smaller in share than the GHG emissions reductions called for by advances in technology and fuels, but necessary for GHG emissions reductions in other sectors such as upstream energy production facilities and natural and working lands, and are also anticipated to lead to important co-benefits such as improved public health.

**Figure 1: Statewide On-Road GHG Emissions**



WTW = well-to-wheel emissions  
 MMT CO<sub>2</sub>e = million metric tons carbon dioxide equivalent  
 RPS = renewable portfolio standard

The Scoping Plan Update recognizes the role that reducing growth in VMT plays in supporting other important public health, equity, economic, and conservation goals. The types of strategies associated with reducing VMT growth also influence where and what types of development are put in place, with implications beyond reducing distances traveled and tailpipe emissions. Development pattern choices also play a role in influencing pollutant exposure; accessibility to jobs and services; future transportation, energy, and water infrastructure demand and costs; as well as conversion of natural and working lands; food security; watershed health; and ecosystems.

Stronger SB 375 GHG emissions reduction targets will enable the State to make significant progress toward the Scoping Plan Update goals, but alone will not provide all of the reductions needed. While currently adopted SB 375 plans achieve, in aggregate, nearly an 18 percent reduction in statewide per capita GHG emissions relative to 2005 by 2035, the full reduction needed to meet our climate goals is on the order of a 25 percent reduction in statewide per capita GHG emissions by 2035.

Bridging the gap will require a combination of increased SB 375 targets and new State and local VMT reduction actions. As part of the Scoping Plan Update, CARB staff and

our sister State agencies have included the following recommended new State-level strategies to reduce VMT that we are beginning the process to pursue:<sup>9</sup>

- Developing and expanding funding and financing mechanisms and incentives for infill development and related infrastructure (e.g. low-VMT housing rebate, reduced parking requirements, regional transit-oriented development funds, etc.) and connecting to incentives/support for regional land conservation strategies (e.g. transfer-development rights, growth boundaries, etc.).
- Improving performance measures used to plan and select transportation facilities to ensure projects help to achieve emission reductions, and increase competitiveness of transit and active transportation modes (e.g. via guideline documents, funding programs, project selection, etc.).
- Expanding investments in transit and active transportation, as well as exploring opportunities for increasing shared mobility transportation options, particularly for automated vehicles.
- Developing pricing policies (e.g. congestion, road user VMT-based, low-emission vehicle zones for heavy duty, parking pricing, etc.).

These strategies will be expanded upon further through the Scoping Plan Update implementation process and CARB's process this year to prepare a report to the Legislature in response to SB 150 (Allen, Chapter 646, Statutes of 2017). The State agencies will continue to gather more detail on the strategies described here, and will develop subsequent actions through separate public processes. As the State agencies move forward, the strategies may change, be adjusted, or new strategies may be added.

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<sup>9</sup> See California Air Resources Board, Public Meeting to Hear Proposed Update to Senate Bill 375 Greenhouse Gas Emission Reduction Targets – Staff Presentation, March 23-24, 2017, Slides 27-34, <https://www.arb.ca.gov/board/books/2017/032317/17-3-7pres.pdf>.

## C. Bottom-Up Analysis: MPO Target Recommendations

Since 2014, CARB staff has also been working in support of a bottom-up process whereby MPOs provide target recommendations for their region supported by technical information. This was the process followed during the original target setting in 2010. All MPOs participated in the target recommendation process and provided CARB staff with varying levels of analysis. To view MPO submittals to CARB staff, see Appendix B. MPO Scenarios and Data Submittals.

The four largest MPOs (MTC/ABAG, SACOG, SANDAG, and SCAG) voluntarily conducted a hypothetical, less constrained form of scenario planning to determine what kinds of strategies and factors could generate the additional GHG emissions reductions necessary to support higher SB 375 targets. As part of this analysis, CARB staff requested that these MPOs provide further information on opportunities and challenges, as well as what financial and political resources would be necessary, to further deploy the following six policy levers in their respective regions:

- Land use change;
- Transportation;
- Active transportation;
- Pricing;
- More aggressive implementation of technology solutions (e.g., increased deployment of electric vehicle infrastructure); and
- Innovative mobility solutions (e.g., ridesourcing and autonomous vehicles).

CARB staff also asked the MPOs to explore the impact of demographic changes in their regions – the millennial effect. The four MPOs submitted their findings to CARB staff between March and May of 2017.

Table 1 summarizes the strategy areas and quantitative analysis results that the four largest MPOs provided to CARB and considered in their recommendations, showing potential for additional and enhanced incorporation of land use, transit, active transportation, vehicle technology support, and enhanced mobility strategies. Where an MPO did not provide a value for a particular strategy area, it is marked as “value not provided”, indicating that the MPO did not provide an analysis value to CARB for this particular policy area. In some instances these areas represent potential for additional GHG reductions, and in others they represent strategy areas that the MPO considers already fully explored through development of their most recent SCS. Public comments have raised questions about the breadth of policies tested, suggesting that greater reductions may at some point be possible.

**Table 1: Summary of Quantitative Results Provided by the MPOs**

Strategy Type	SACOG*	MTC*	SANDAG*	SCAG*
Land Use	-4%	-1.6%	-2%	-0.1%
Transit			-1%	
Active Transportation		Value Not Provided	Value Not Provided	-0.4%
TDM/TSM	Value Not Provided	Value Not Provided	Value Not Provided	Value Not Provided
Regional/Local Pricing	Value Not Provided	Value Not Provided	Value Not Provided	Value Not Provided
Vehicle Technology: ZEV	-1%	Value Not Provided	-20%	Value Not Provided
Enhanced Mobility: CAVs	Value Not Provided	Value Not Provided	Value Not Provided	-2%
Demographic Changes	Value Not Provided	Value Not Provided	Value Not Provided	Value Not Provided

\*MPO values are not fiscally constrained

TDM = Transportation Demand Management; TSM = Transportation Systems Management; CAVs = Connected Autonomous Vehicles

The tests indicated that additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies, and they provided ranges of magnitude for some of the policy lever areas above. As part of this work, the four MPOs identified several barriers that they see to realizing the full benefits of the test ranges reported. They assert that all assumptions tested would require either additional revenue sources and/or regional/State/federal rule or guidance changes. In particular, they state that current transportation spending formulas and allocations provide little flexibility to shift funding to more sustainable transportation projects. Under current conditions, a portion of the funding available to implement the types of projects that are essential to support SB 375 goals (e.g., active transportation infrastructure projects, safety improvements, transit projects, transit oriented development projects, safe routes to school projects) is awarded on a competitive basis through grant funding cycles, making it difficult to plan ahead. The MPOs also cited concerns with testing further deployment of some of these policy levers at all. For instance, they stated that some may present issues related to social justice, such as displacement and inequitable transportation cost burden.

At the same time, MPOs have provided additional analysis and information to show that many of the 2035 GHG emissions reduction percentages that are reflected in their latest plans are higher than what can be expected today when accounting for latest



assumptions of increasing vehicle fuel efficiency, economic recovery, available funding, and housing development rates.

- **Rebound Effect.** MPOs cite a rebound effect of increased overall driving due to increasing vehicle fuel efficiency, as a significant factor making it difficult to maintain their previous estimates of SCS GHG emission reductions. CARB's independent analysis of the rebound effect as part of its Advanced Clean Car Regulation<sup>10</sup> and U.S. EPA's analysis for the Mid-Term Review<sup>11</sup> shows the impact to be minimal, on the order of approximately 1 percent increase by 2035. Further discussion of the rebound effect is found in Appendix C. Rebound Analysis.
- **Economic Recovery.** MPOs have stated that updated economic factors have resulted in unanticipated higher VMT estimates, making it difficult to maintain their previous estimates of SCS GHG emissions reductions. Some MPOs developed their last SCS plans during the recovery from the recession of 2008 and included more conservative estimates of economic recovery than what is occurring today. Given that economic growth is highly correlated with travel patterns and changes in VMT, this unanticipated growth is expected to increase VMT estimates for some MPOs in the near term, and may even provide opportunities for decreasing VMT over the long term.
- **Available Funding.** As part of the bottom-up target recommendation process, some MPOs have identified funding as a significant factor making it difficult to maintain their previous estimates of SCS GHG emissions reductions. Some MPOs included assumptions in their most recent plans that anticipated local tax measures that ultimately were not passed, which have implications for their upcoming SCSs.
- **Housing Development.** California currently has a housing shortage, and according to the California Department of Housing and Community

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<sup>10</sup> See California Air Resources Board, LEV III Economic Analysis Technical Support Document, Appendix S, December 7, 2011, <https://www.arb.ca.gov/regact/2012/leviiighg2012/levapps.pdf>.

<sup>11</sup> See US Environmental Protection Agency, The Rebound Effect from Fuel Efficiency Standards: Measurement and Projection to 2035, <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100N11T.PDF?Dockey=P100N11T.PDF>.

Development<sup>12</sup> the State needs about 180,000 housing units per year to keep pace with population growth and demand. This is far short of the 80,000 new homes constructed annually over the last ten years and on-going production continues to fall short. During the target setting process, some MPOs discovered that new residential construction has occurred at a slower rate than they previously assumed in their last SCS plans, which can impact their short run VMT estimates and population growth allocations. Most MPOs anticipate that housing development will increase as the economy recovers and housing demand continues to rise over the long run, however, the pace of housing construction, displacement and a lack of affordable housing are increasing commute distances for low-income residents.

Based on these findings and discussions with their Boards, the four large MPOs submitted target recommendations to CARB in May 2017 of an 18 percent reduction from 2005 levels by 2035.

The eight Valley MPOs submitted target analysis information using preliminary results from their most recent model improvement effort. This work utilizes the most recent Census, American Community Survey, California Household Travel Survey data, and it also implements changes to the model structure based on CARB feedback received during their last SCS evaluation period. The Valley MPOs' preliminary results suggest a more accurate estimate of what their currently adopted plans would achieve, if implemented. For some Valley MPOs, this is close to a 40 percent drop from what the MPOs estimated and reported in their currently adopted SCSs, but more in line with what CARB sensitivity testing previously indicated during the first SCS review process.

Similar to the big four MPOs, the Valley MPOs also identify factors that are making it difficult for them to maintain the estimated emission reduction levels of their currently adopted SCSs. While they do not quantify the magnitude of effect of these factors, they identify a variety of new strategies that go above and beyond their last SCSs that they anticipate will help offset these factors and effectively maintain currently estimated reduction levels. As such, seven of the eight Valley MPOs recommend targets for 2035 that commit to maintaining the same levels of reduction estimated for their currently

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<sup>12</sup> See California Department of Housing and Community Development, California's Housing Future: Challenges and Opportunities – Public Draft, January 2017, <http://www.hcd.ca.gov/policy-research/plans-reports/docs/California's-Housing-Future-Full-Public-Draft.pdf>

adopted SCSs. Fresno COG has recommended a 2035 target of 13 percent, which exceeds the estimated emissions reduction of their current SCS.

Of the six remaining MPOs, four submitted target analysis information that would meet or exceed their currently adopted SCSs. All acknowledged challenges in maintaining needed resource and funding levels to match performance of their previously adopted plans.

## **D. Public Engagement**

Since 2014, CARB staff has also engaged in regular and ongoing dialogue with MPOs and other stakeholders to solicit target update recommendations. In August 2014, CARB staff released a preliminary draft staff report on factors to consider in development of the target update. CARB staff used that report to facilitate discussion and gather input at three public workshops in September 2014 in Diamond Bar, Fresno, and Sacramento. Input received at that time included: requests to update the placeholder targets for the MPOs in the San Joaquin Valley, incorporate best practices in the SCSs, identify and measure co-benefits, provide additional resources and funding for SCS implementation, consider GHG credit for advances in technology and electric vehicle usage, improve travel demand modeling; support for both a top-down and bottom-up approach; as well as comments on the timing for when updated targets should take effect. CARB staff incorporated this input and its proposed approach to the target update into its report to the Board on October 23, 2014. At that meeting, the Board indicated their support for staff's proposed approach.

Throughout 2015, CARB staff continued to engage MPOs and other stakeholders following that approach. In September 2015, CARB staff sent a memorandum to the MPOs with an updated schedule and request to receive any target recommendations by spring 2016. While many of the MPOs met that deadline, some MPOs requested more time to conduct additional scenario analysis and testing. At the end of December 2016, the Valley MPOs sent CARB their preliminary target setting recommendations, and the largest four MPOs sent results from their target analyses in early March 2017.

CARB staff conducted a second set of workshops in March 2017 in the cities of Fresno, Los Angeles, and Sacramento, to provide an update and receive feedback on MPO target analysis and recommendations received and next steps to update targets. Over 100 people attended in-person, with additional participation through webcast of the Sacramento workshop. Attendees included MPO and State agency representatives, non-governmental organizations, local jurisdictions, and private citizens. Feedback provided, included requests for performance monitoring of plan implementation, sharing of leading practices, and additional analysis for co-benefits. There was a general agreement on the need to secure additional pricing and transportation revenue and to align transportation funding with land use goals. CARB staff also provided an informational update to the Board on March 23, 2017. At that meeting, Board members acknowledged the need and challenge ahead with ensuring the appropriate funding incentives are in place to support achievement of more aggressive SB 375 targets. As a first step, the Board suggested convening a transportation funding "roundtable", for State agencies, MPOs, and subject experts to discuss how the State could better align transportation funding with the State's environmental goals.

In addition, CARB staff continued to meet with MPO staffs and various non-governmental organizations on both an individual and group basis to discuss the target update. Updates on the SB 375 target setting process were also presented at the Scoping Plan Update workshops for the transportation sector hosted by CARB in September 2016 and March 2017.

In June 2017, CARB released a “Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets” containing proposed targets for each MPO. An accompanying Draft Environmental Assessment was also released for 45-day public review starting on June 13, 2017, and ending on July 28, 2017.

CARB staff conducted a third round of workshops in June 2017 in the cities of Bakersfield, Los Angeles, and San Francisco, to receive feedback on the proposed targets and environmental document. Over 50 people attended the workshops in-person and CARB staff presented a more in-depth discussion on the MPO analysis and CARB’s approach for the proposed targets outlined in the staff report. CARB staff also provided clarification for the underlying assumptions and outlined the process moving forward. During the 45-day public comment period, CARB received over 30 comment letters for consideration representing over 100 agencies including non-governmental organizations, MPOs, building industry agencies, transit agencies, local jurisdictions, and private citizens.<sup>13</sup> Feedback from the workshops and comment letters covered a wide range of topics with some agencies advocating for higher targets and some supporting the MPO recommendations. Below is a brief summary, by topic area, of all comments received regarding the target recommendations and SB 375 process.

- **Land Use and Transportation Policy Focus:** the importance of focusing on land use and transportation policy changes to meet GHG reduction targets, and the need for target measurements to be more isolated from the impact of exogenous factors such as gas prices.
- **Environmental Justice:** incorporation of social equity factors and displacement analysis in the SB 375 target update process to ensure targets are beneficial and minimize harm to disadvantaged communities.

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<sup>13</sup> Written comments received can be viewed at:  
<https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=sb375update2017>

- **Modeling Assumptions:** additional explanation for the “rebound effect” and adjustments to future modeling assumptions such as fuel price and EMFAC, support for future change in SB 375 targets and evaluations to focus discussions on policy and strategy implementation (i.e., Best Management Practices).
- **Performance Monitoring:** focus on performance tracking and monitoring for SCS implementation and identify co-benefits and areas for further GHG reductions.
- **State Strategies:** clarification on State commitments and strategies versus MPO specific SCS strategies and the relationship for credit under SB 375.
- **Target Recommendation Analysis:** clarification on CARB’s mid-point approach and the MPO analysis (i.e., “stress tests” and inclusion/exclusion of strategy areas) for the target recommendation;
- **Transportation Funding:** recognition of current and future transportation funding limitations, such as loss of funding due to assumed sales tax measures and redevelopment finance programs, as well as opportunities like SB 1 and potential State pricing mechanisms.

Based upon the comments received, CARB staff reduced the proposed GHG emissions reduction targets for some of the four large MPOs compared to the original proposal, while adding new tracking and reporting elements for MPOs to track shifts in land use and transportation measures in their regions and report on the expected increment of progress made from land use and transportation strategy commitments between their current and future plans. This approach recognizes the MPOs’ inability to control macro-economic factors and also their ability to provide regional leadership to foster land use and transportation policies that slow the growth of VMT and associated climate and air pollution and that can improve public health, conservation, social justice, and access to opportunities.

CARB staff presented this revised proposal as an informational update to the Board on December 14, 2017. The initial feedback received on this revised approach from the Board and from stakeholders who attended that meeting was overwhelmingly positive.

CARB then held four workshops around the State in January and February 2018 to seek additional feedback on this revised approach. Over 100 attendees, including MPO staff, public stakeholders, community organizations, local jurisdictions, transportation agencies, and state agencies, provided feedback. Participants expressed the need to provide communities with more functional, efficient, and affordable transit, bike, and

walk opportunities, citing their personal on-the-ground experiences in trying to utilize existing options and the challenges they encountered (e.g., time, cost, system cohesiveness). They also expressed overall support for the direction in CARB staff's revised proposal and shift in program focus toward SCS strategies, policies, investments, and implementation, including the need for greater transparency. CARB staff received input from stakeholders on potential metrics to promote effective monitoring and reporting of the impacts of SCSs prepared under SB 375. Metrics discussed included, but were not limited to, measures of regional transportation funding priorities and funding allocations, measures of land use policy and development, as well as measures of transportation costs and system improvements. Some stakeholders expressed a desire for higher targets, and additional information about the process for developing strategies beyond SB 375 to achieve the additional reductions needed to meet the 25 percent reduction goal identified in the Scoping Plan Update.

Following consideration of public comments received, CARB staff made appropriate final changes to the Staff Report. These edits are incorporated throughout this document and appendices, with key additions in Section IV. Staff Recommendation for SB 375 Target Updates and Appendix A. MPO Target Recommendations and CARB Staff Recommendations.

## **IV. Staff Recommendation for SB 375 Target Updates**

CARB staff recommendations are designed to strike a balance between the bottom-up analysis provided by the MPOs and CARB's top-down analysis to recommend a set of targets that meet all the identified objectives. Furthermore, over the first rounds of SCS review, both CARB and MPO staffs have learned about the shortcomings of the current SB 375 target metric and using modeling as the primary means for demonstrating target achievement. Recognizing these challenges, CARB staff recommend a shift in the way CARB applies targets and evaluates SCSs moving forward.

Under the current approach, target achievement is dependent not only on things MPOs can control (their policies and investments), but things that they do not control (such as changes to forecasted demographics, fuel price, fleet mix, etc.) as well. In practice, this has resulted in unproductive effort focused around assumptions for factors outside of any regional or State agency's control, rather than focusing more squarely on what efforts MPOs are putting in place to implement the land use and transportation strategies and investments called for under SB 375.

To achieve needed emissions reductions, greater emphasis on MPO strategy and investment decisions, and more effective program implementation, CARB staff recommend three programmatic changes:

- 1) transitioning the current program targets and SCS evaluation process to recognize and isolate changes the regions are making to their land use and transportation policies and investments;
- 2) incorporating additional reporting and data tracking by MPOs related to how their investments and transportation project lists support claimed commitments to GHG emissions reduction strategies, as well as information on how they will be tracking SCS implementation over time; and
- 3) updating targets to reflect the latest discussion and information shared by the MPOs.

The following sections include further detail on each recommendation. As proposed, CARB staff's recommended targets would result in an additional reduction of GHG emissions of over 8 million metric tons of CO<sub>2</sub> per year in 2035 compared to the current targets.

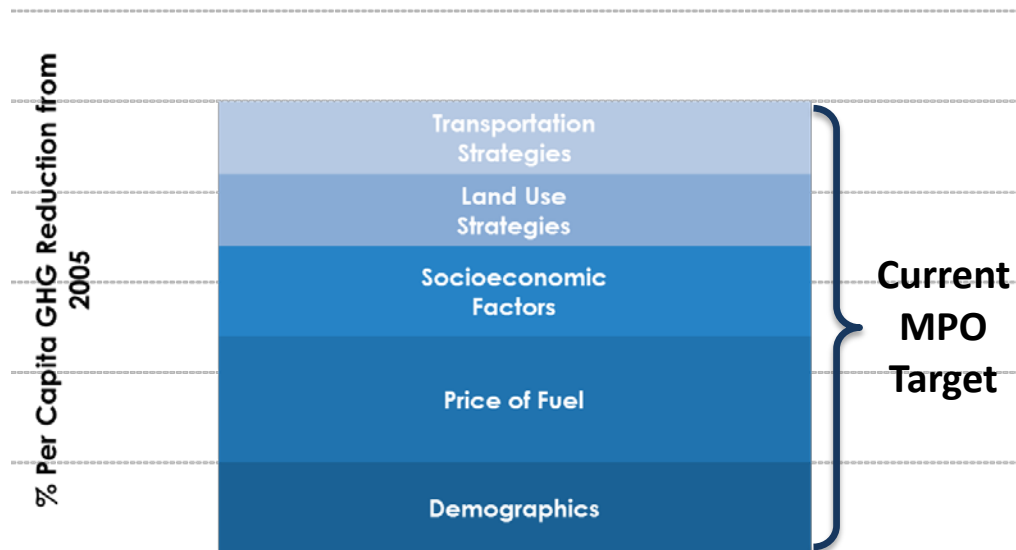


## A. Adjustments to Target Framework and SCS Evaluation Process

This target update seeks to increase focus on local and regional land use and transportation policy change. Therefore, in addition to updating the targets themselves, CARB staff recommends putting in place changes to the current SB 375 target framework and SCS evaluation process that will help to better recognize and isolate efforts that MPOs and their local jurisdictions are making to advance land use and transportation policies and investments that reduce GHG emissions.

Figure 2 below illustrates the current SB 375 target framework and shows that within any given region's SB 375 GHG emissions reduction target, there are a number of factors that affect achievement. These factors include progress made through the region's policy decisions on transportation infrastructure and land use change, but they also include emissions reductions associated with changes in long-range assumptions for things like the economy, price of fuel, and changes in demographics, which are all important for planning, but not controlled by local or regional efforts.

**Figure 2: Current SB 375 MPO Target Framework**



Starting with their next SCSs, MPOs will begin isolating and quantifying their regions' emissions reductions attributable to SCS transportation and land use strategies. Future SCS evaluations by CARB staff will look to MPOs to report to CARB on actual changes in land use and transportation strategy metrics between 2005 and their plan base year, as well as on the expected increment of progress made from land use and transportation strategy commitments in their next SCS compared to what was included in their latest effective plans.

Table 2 provides examples of SCS transportation and land use strategy types for which MPOs can take credit under SB 375, and reflect CARB staff’s expectation for the types of strategies that would be quantified, if included in their SCSs. <sup>14</sup>

**Table 2: SCS Strategy Examples**

Strategy Type	Examples
Land Use	Infill development, increased multi-family and/or small lot development, increased densities for residential and commercial development, transit-oriented development, etc.
Transportation	Increased transit operations and efficiency, bike and pedestrian infrastructure, bikeshare systems, complete streets policies, etc.
Transportation Demand Management (TDM)	Carpool/vanpooling, rideshare and ridematching programs, carshare, high-occupancy vehicle (HOV) lanes, parking supply management, transportation incentive programs, etc.
Transportation Systems Management (TSM)	Traffic signal optimization, transit signal priority, ramp metering, incident management, intelligent transportation systems, integrated corridor management, etc.
Pricing Strategies	High-occupancy toll (HOT) lanes, local/regional congestion pricing, variable parking pricing, etc.
Vehicle Technology/Enhanced Mobility	ZEV/PHEV charging infrastructure, vehicle-to-vehicle technology, vehicle-to-infrastructure technology, neighborhood electric vehicles, autonomous vehicles, etc.

It is important to note that the current SB 375 program does not allow MPOs to take credit for State programs that improve vehicle emission standards, changes in fuel composition, and other State measures that will reduce GHG emissions to demonstrate achievement of their regional targets. <sup>15</sup> Statewide road user pricing is an example of a potential future State-initiated strategy that an MPO could not use to demonstrate compliance with the SB 375 targets. However, the MPO could use its ability to make reasonable assumptions about revenues appropriated to the MPO from State road user pricing that could be re-invested to further the region’s SCS. If an MPO were to initiate a specific regional or local pricing strategy (e.g., local/regional tolls or congestion pricing) through action taken by the MPO’s Board of Directors, then the MPO could take

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<sup>14</sup> See Tables 2-2 and 2-3 in Appendix F. Final Environmental Analysis for a more detailed list of land use and transportation strategies the SB 375 program currently allows MPOs to take credit for to demonstrate achievement of their regional targets.

<sup>15</sup>Government Code Section 65080(b)(2)(A)(iii)

full credit for the VMT and associated GHG emissions reductions attributable to that action toward achievement of its SB 375 targets.

CARB staff intend to use the upcoming planning cycle to begin testing this new method for evaluating targets, and if successful, CARB staff will explore the potential of using these metrics for future target setting along with other options as appropriate.

## **B. Reporting and Tracking**

In addition to framework adjustments discussed above, CARB staff recommends incorporating additional reporting elements and tracking from the MPOs to occur on a more regular basis. The purpose of these additions is to increase both CARB staff's and the public's understanding and confidence that strategies in the SCSs will achieve the GHG emissions outcomes identified.

Some examples of the additional reporting and tracking information being explored, include: 1) more detail on the types and timing of local and regional investments to support SCS implementation; 2) information on how local and regional transportation project lists promote accessibility and reduce per capita VMT, criteria pollutant emissions, and GHG emissions; and 3) whether MPO implementation efforts support success by including mechanisms to track progress and avoid unintended consequences.

CARB staff are currently working with the MPOs and other stakeholders to develop these new reporting and tracking elements and will incorporate specific guidance for MPOs in its forthcoming CARB SB 375 Program Guidelines for SCS review by late summer 2018.

### C. Target Recommendation for Year 2020

SB 375 calls for CARB to set GHG emissions reduction targets in any metric deemed appropriate by CARB. The SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005.

The year 2020 is the first SB 375 milestone year, and while transportation planning for 2020 is essentially done, with some MPOs adopting their next SCSs after 2020, CARB staff does not expect future MPO SCS planning to change current projected GHG emissions reductions for 2020. CARB staff views updates to the 2020 targets as both a clean-up step and an indicator for monitoring the need for adjustments to SCSs as they relate to achieving 2035 targets. Thus, in most cases, CARB staff proposes to bring the 2020 targets in-line with the projected GHG emission reductions of the MPOs' most recent, adopted SCS. Table 3 shows CARB's target recommendation for each MPO for 2020 compared to CARB's currently adopted targets from 2010, and the MPO target recommendations for 2020.

**Table 3: 2020 Target**

MPO	Currently Adopted Target	MPO-Recommended Target	CARB Recommended Target
MTC/ABAG	-7%	-	-10%
SACOG	-7%	-	-7%
SANDAG	-7%	-	-15%
SCAG	-8%	-	-8%
Fresno COG	-5%	-6%	-6%
Kern COG		-9%	-9%
Kings CAG		-5%	-5%
Madera CTC		-10%	-10%
Merced CAG		-10.1%	-10%
San Joaquin COG		-12 to -13%	-12%
Stanislaus COG		-12 to -13%	-12%
Tulare CAG		-13 to -14%	-13%
AMBAG	0%	-3%	-3%
Butte CAG	1%	-	-6%
San Luis Obispo COG	-8%	-2%	-3%
Santa Barbara CAG	0%	-13%	-13%
Shasta RTA	0%	-	-4%
Tahoe MPO	-7%	-8.8%	-8%

## D. Target Recommendation for Year 2035

The target update process is most heavily focused on updating the 2035 target. Based on the best available information from the MPOs' recent analysis results, CARB staff's look at the current research on potential new strategy areas, as well as new revenue sources and action commitments by the State to support further local action, CARB staff believe the weight of evidence suggests that targets higher than the current targets are within reach. Many of the MPOs' current plans have indicated as much, estimating achievement of greater reductions than the current targets in 2035. As part of the bottom-up analysis and MPO target recommendation process, most MPOs have acknowledged the potential for, and committed to, incorporating additional or enhanced strategies compared to what is included in their currently adopted SCSs, in their future SCSs.

CARB staff used the MPO test results and considered current research and recent policy developments to assess the percentage reduction levels that MPOs have the potential to achieve from new and/or enhanced land use and transportation strategies compared to each of their currently adopted SCSs. Table 4 lists CARB staff's assessments of each strategy's potential additional per capita GHG reduction by 2035, as compared to 2005 levels, beyond what is already contained in current SCSs.

**Table 4: Potential GHG Target Impacts – CARB Review**

<b>Strategy Type</b>	<b>CARB Estimate</b>
Land Use	0 to -4%
Transit	
Active Transportation	
TDM/TSM	-0.5%
Regional/Local Pricing	-0.5%
Vehicle Technology: ZEV	-1%
Enhanced Mobility: CAVs	+/-
Demographic Changes	+/-
Rebound Effect	+1%
<b>Total Reduction</b>	<b>-1 to -5%</b>

While differences across the regions mean the same strategies may produce different emission reduction outcomes, CARB staff estimate that through different combinations of strategies in each region, each may be able achieve additional reductions on the order of 1 to 5 percent compared to each of their currently adopted SCSs.

At the same time, CARB staff have considered additional analysis and information that the MPOs have provided to show that many of the 2035 GHG reduction percentages

that are reflected in their latest plans are higher than what can be expected today when accounting for the latest assumptions on increasing vehicle fuel efficiency, economic recovery, available funding, and housing development rates.

On balance, the MPO target recommendations include commitments for additional work on SB 375 land use and transportation strategies, but are not measurably higher in magnitude than what MPO's claimed their previous plans would achieve. This is consistent with what both CARB and MPO staff have experienced and learned over the first rounds of SCS review about shortfalls of the current SB 375 target metric and using modeling as the primary means for demonstrating SB 375 target achievement. Under the current approach, target achievement is dependent not only on things MPOs can control (their policies and investments), but also things that they do not control (such as changes to forecasted demographics, fuel price, fleet mix, etc.). The experience to date has been mixed, but both MPOs and CARB staff agree that programmatic changes to accounting are needed that focus more directly on what actions MPOs are taking relative to SB 375 strategies.

Recognizing CARB staff's assessment of potential for additional reductions, the need to adjust the MPOs' previous assumptions based on the latest information, and the desire to better focus and tie program achievement to policies and investments controlled by an MPO, CARB staff recommends setting the MPOs' 2035 targets near the level of their recommendations, with the provision that the MPOs begin reporting to CARB what percent of their reductions are the result of changes made to their region's land use and transportation strategies beyond what was included in their latest SCS as of September 2018. See Appendix A. MPO Target Recommendations and CARB Staff Recommendations for additional detail.

Table 5 shows the currently adopted targets, estimated reductions with currently adopted SCSs, MPO target recommendations, and CARB staff's recommended target for each MPO for year 2035. CARB staff believes that to achieve the intent of the legislation and to maximize community co-benefits, the following targets should be achieved predominantly through strategies that reduce VMT.

**Table 5: 2035 Target**

MPO	2035			
	Current Target	Current SCS Anticipated Performance	MPO Recommended Target	CARB Recommended Target
MTC/ABAG	-15%	-15.5% <sup>d</sup>	-18%	-19%
SACOG	-16%	-16%	-18%	-19% <sup>a</sup>
SANDAG	-13%	-18% <sup>c</sup>	-18%	-19%
SCAG	-13%	-16% <sup>c</sup>	-18%	-19%
Fresno COG	-10%	-10% <sup>c</sup>	-13%	-13% <sup>b</sup>
Kern COG		-13% <sup>c</sup>	-13%	-15% <sup>b</sup>
Kings CAG		-12% <sup>c</sup>	-12%	-13% <sup>b</sup>
Madera CTC		At least -10%	-15 to -20%	-16% <sup>b</sup>
Merced CAG		-12.7% <sup>c d</sup>	-12.7%	-14% <sup>b</sup>
San Joaquin COG		14% <sup>c</sup>	-14 to -15%	-16% <sup>b</sup>
Stanislaus COG		14% <sup>c</sup>	-14 to -15%	-16% <sup>b</sup>
Tulare CAG		15% <sup>c</sup>	-15 to -16%	-16% <sup>b</sup>
AMBAG	-5%	-6%	-6%	-6%
Butte CAG	1%	-7%	-7%	-7%
San Luis Obispo COG	-8%	-10.9%	-4 to -8%	-11%
Santa Barbara CAG	0%	-17%	-17%	-17%
Shasta RTA	0%	-0.5%	-3.5%	-4%
Tahoe MPO	-5%	-5% <sup>d</sup>	-5%	-5%

<sup>a</sup> If SACOG is not able to secure the funding and commitments to implement their proposed pilot project, CARB staff would evaluate the SCS performance against an 18 percent target. See Appendix A. MPO Target Recommendations and CARB Staff Recommendations, pages A-7 through A-9 for further discussion.

<sup>b</sup> Recommended targets apply to the San Joaquin Valley MPOs third cycle SCS plans.

<sup>c</sup> Current SCS anticipated performance as reflected with updated MPO modeling analysis.

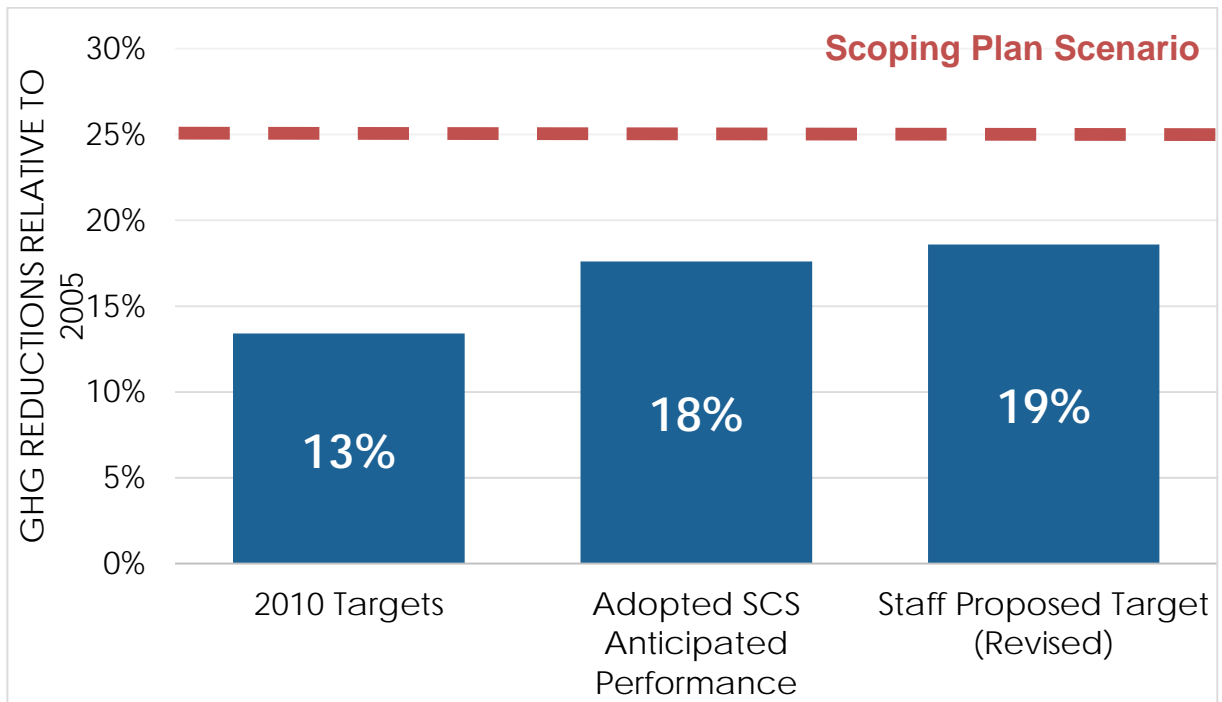
<sup>d</sup> SCS adopted, but CARB evaluation not yet completed.

Figure 3 illustrates what these SB 375 target levels mean in aggregate, within the context of advancing progress toward our statutory climate and air quality goals. CARB staff’s top-down analysis estimates that a 25 percent reduction in statewide per capita GHG emissions relative to 2005 by 2035 is needed to meet the State’s climate goals, as it relates to the Scoping Plan Update (shown as the “Scoping Plan Scenario” dashed line). CARB staff’s recommended targets would achieve a 19 percent reduction in statewide average GHG emissions compared to 2005 levels. This is about 1 percentage point less than what CARB staff proposed in its October 2017 proposal. Staff’s current recommendation is still expected to get us further than the current 2010



targets of 13 percent, and what adopted SCSs are projected to achieve, which is 18 percent.

**Figure 3: SB 375 Targets Relative to Scoping Plan Scenario**



In terms of tons, CARB staff’s proposed targets would result in an estimated additional reduction of approximately 8 million metric tons of CO<sub>2</sub> per year in 2035 compared to the existing targets. The estimated remaining GHG emissions reductions needed would be approximately 10 million metric tons CO<sub>2</sub> per year in 2035 based on the Scoping Plan Update scenario. These remaining GHG emissions reductions are attributed to new State-initiated VMT reduction strategies described in the Scoping Plan Update. CARB may update the SB 375 targets every four years, if needed, so there is an opportunity to reassess and adapt the role of the SB 375 targets in the State’s overall suite of VMT and GHG emissions reduction strategies on an ongoing basis.

Throughout the Scoping Plan Update development and SB 375 target update process, social equity and linked issues have been a concern. Historically, there have been instances where transportation and land use decisions have perpetuated race, class, and other hierarchies and have caused disproportionate impacts to disadvantaged communities. The GHG emissions reduction targets included in this report could be met by a wide range of land use and transportation policies and investments, including ones that could advance equity goals and ones that could hinder them. In particular, SCS strategies, like infill and transit oriented development, have brought up concerns around displacement of existing residents due to increasing land values, possibly to suburban

areas with less access to transit, jobs, and services than low-income families have currently. More recently, discussions on new pricing mechanisms, such as a road toll or user fee, have raised concerns on the potential to disproportionately impact disadvantaged communities. Following on these concerns, some stakeholders have asked CARB to incorporate a social equity and/or environmental justice analysis of the targets to address these and other general concerns around whether the recommended targets will result in regional strategies that benefit communities equitably.

While CARB is committed to making the achievement of environmental justice<sup>16</sup> an integral part of its activities, including the SB 375 program, any analysis of the social equity and environmental impacts of the proposed targets would be speculative, if not impossible, to predict at this stage. Decisions by entities regarding the specific location and design of new development, facilities, or infrastructure, or the specific pricing mechanisms and the details of application that may be undertaken in response to the targets are yet to be developed through subsequent regional and State planning processes. Specific subsequent actions included in future RTP/SCSs, or developed by State agencies in response to the targets, would undergo analyses at the time they are proposed. To inform subsequent target update conversations on this topic, CARB staff plans to track indicators of SCS implementation, including: land use change, accessibility, and public health outcomes, integrating social equity and environmental justice analysis to the extent feasible building on implementation of SB 350, AB 617, and the Caltrans' 2017 RTP Guidelines for MPOs. CARB staff also anticipates updating the SCS evaluation process in 2018 to reflect what has been learned through the first rounds of SCS evaluation, the target update, and recent research. See Appendix E. SB 375 Program Background for additional information.

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<sup>16</sup> CARB approved Policies and Actions for Environmental Justice in 2001, to establish a framework for incorporating environmental justice into the CARB's programs consistent with the directives of State law. CARB is currently in the process of updating the environmental justice policies and actions based on input received through the Scoping Plan Update.

## E. Achieving the Target Update Objectives

CARB staff's recommended targets are consistent with the SB 375 target update objectives discussed in Section II. CARB staff's approach relied on MPO generated information as a foundation, reviewed and supplemented with the latest available information, methods, and data for capturing the benefits of potential SCS strategies. Additionally, the recommended targets recognize the need and importance for continued local and State partnership to meet the State's overall VMT reduction goal.

- **MPO Input.** The recommended targets use MPO generated information as the foundation for target setting. MPO baseline information, forecasts, and expertise related to what may be feasible is an important component of the target recommendation. The recommended targets are intended to achieve a balance between goals that motivate positive action, but are not out of reach for regions and local governments.
- **Best Available Information.** The recommended targets are based on analyses performed using the best available models and tools and the latest methods and data. While transportation modeling tools used to quantify GHG emissions reductions from SCS strategies continue to improve, they still do not completely capture all the benefits or consequences of SCS planning. The methods and data for capturing the benefits of potential SCS strategies have and will continue to improve as well. The recommended targets recognize improvements since the last target cycle, and the likelihood that tools and methods will continue to improve in their ability to quantify SCS GHG emissions reductions and other co-benefit effects.
- **Local and State Partnership.** The recommended targets also recognize that additional State policy and funding tools are being developed to support further VMT reduction that will both help the State overall in achieving needed emission reductions and support MPOs in their ability to achieve higher targets by 2035. The recommended targets are intended to share responsibility and partnership toward meeting the overall goal. See Section III-B, for further discussion on work underway to develop additional State-level assistance and tools.

## V. Next Steps

CARB is required under SB 375 to update the targets no later than 2018, which is eight years from the time targets were first established in 2010. The purpose of this staff report is to provide the Board and public with an opportunity to discuss and comment on CARB staff's recommended targets. This section describes next steps in CARB's process to update the SB 375 targets and associated program components, including future opportunities for input.

CARB staff will present this staff recommendation and the Final Environmental Analysis pursuant to its certified regulatory program to comply with the California Environmental Quality Act (CEQA; Public Resources Code § 21080.5) to the California Air Resources Board at the March 2018 Board Hearing. See Appendix F for the Final Environmental Analysis with response to comments. If the Board adopts staff's final recommendation, the new SB 375 targets would become effective October 1, 2018.

MPOs prepare SCSs according to their respective update schedules, which means the next set of SCSs subject to updated targets will be prepared at different times over the next four years. Based on the current update schedule, SCSs adopted in 2018 would not be subject to the updated targets. See Appendix D for the MPO RTP update schedule.

Once target updates are adopted, CARB staff plans to turn its attention to revising program guidelines for how CARB SCS reviews are conducted, and what information and data from the MPOs are necessary to make a determination on whether the SCS, if implemented, would meet the GHG reduction targets.

Furthermore, while the target numbers themselves are a key focus of this staff report and SB 375 implementation, the land use and transportation strategies that underpin the SCSs are what ultimately determine the ambitiousness of the plans, in terms of improvements to quality of life, health, and long-term sustainability for California residents. Now that the SB 375 program is in its ninth year of implementation, indicators of policy change and SCS implementation are becoming available. CARB staff plans to turn its attention to tracking near-term indicators of SCS implementation, land use change, sustainable development, and public health outcomes.

CARB's SCS performance indicator tracking efforts will provide a basis for understanding whether the intended benefits of SB 375 are beginning to accrue, what share of benefits disadvantaged or vulnerable communities are receiving, and whether or not they are experiencing disparate impacts and/or disproportionately high and adverse human health or environmental effects. With the recent passage of SB 150 (Allen), CARB will be responsible for preparing a report to the Legislature starting this

year, and every four years thereafter, that discusses regional progress in reducing GHG emissions, as well as best practices and challenges to achieving greater reductions under SB 375. This report will use data-supported metrics to assess progress, as well as the effect of State policies and funding programs.

As part of this process, CARB staff and our sister State agencies, will convene a series collaborative working group meetings in spring and summer 2018 with MPOs and subject matter experts to help identify appropriate tools and incentives to support achievement of more aggressive SB 375 targets and our larger Scoping Plan goal. The purpose of these meetings will be to identify and prioritize the necessary tools, resources, local and State-level actions that will help implement key SCS strategies and policies that maximize GHG emissions reductions, as well as co-benefits. These discussions may also be a useful place for continuing discussions around environmental justice and social equity issues and analysis. CARB will be integrating social equity and environmental justice analysis to the extent feasible through legislative efforts such as SB 350, AB 617, and the Caltrans' 2017 RTP Guidelines for MPOs.

CARB staff will provide an update on lessons learned from these efforts to the Board as part of a joint CARB and CTC Board meeting in the latter half of 2018.