

California Air Resources Board

Staff Report

**Proposed Update to the SB 375 Greenhouse Gas Emission Reduction
Targets**

June 2017

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List of MPO Acronyms Used Throughout this Report
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

Since passage of the Sustainable Communities and Climate Protection Act of 2008, Senate Bill (SB) 375, (Chapter 728, Statutes of 2008), there has been a transformation in regional planning in California. SB 375 has raised 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 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 greenhouse gas (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) is required to establish the regional GHG emission reduction targets (targets), originally established in 2010. Statute requires regions to demonstrate achievement of those targets through a Sustainable Communities Strategy (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 round of SCS planning is underway. Three MPO regions are in the very early stages of developing their third SCSs. To date, CARB staff reviewed the final determinations of 16 MPOs, and concluded that, if implemented, all 16 of those SCSs would achieve their targets. Two MPOs are in the process of evaluating additional strategies that would enable their SCSs to achieve their targets. 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 proposal for updated targets and the technical and policy rationale for the proposal, based on lessons learned during the first rounds of regional SCS plan development.

The proposed targets 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 proposed 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. The challenge has been to develop supporting information for increasing regional planning targets that help achieve greater emission reduction needs, in the face of well-recognized constraints in the current funding framework for infrastructure, MPO authority, and other areas discussed in this staff report. While many of these challenges will not be resolved before the 8-year statutory clock on the target update expires, CARB staff's proposed targets consider what MPOs could achieve with additional State policy and funding tools recommended as part of the proposed Scoping Plan Update and implementation of new transportation spending provisions, including Senate Bill 1 (SB 1). Through these commitments, the State recognizes its essential role in continuing to support development of needed resources for MPOs and local governments to successfully plan and implement their SCSs.

The purpose of this staff report is to provide the CARB Board and the public with an opportunity to discuss and comment on CARB staff's proposed 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 proposed recommendation for the updated SB 375 targets, environmental analysis, and the alternatives to the proposal 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 emission 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 emission 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.
- **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 emission reductions, as well as advances in the measurement of co-benefits.¹
- **CARB's 2017 Climate Change Scoping Plan Update.** The Scoping Plan Update identifies a reduction in vehicle miles travelled (VMT) as a necessary part of the statewide strategy to achieve California's 2030 statewide emission target. VMT reduction is to be achieved, in part, through more stringent SB 375 targets

¹ 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; and Board Resolution 10-31, September 23, 2010, https://www.arb.ca.gov/cc/sb375/eo_attachment.pdf.

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 18 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;
- 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 emission 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 emission sources².

- 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 targets that would, if implemented, result in greater GHG emission reductions compared to reductions that what would be achieved under currently adopted SCSs. Targets would contribute to achieving the overall statewide GHG emission 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.

² 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).

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 emission 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 emission 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 D. 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 reduction goals (40 percent below 1990 levels by 2030) than were in place when the SB 375 targets were first set in 2010. CARB's analysis shows the need for greater emission reductions from all sectors, including passenger vehicle travel, of which SB 375 is an integral part.
- **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.³

³ 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>.

- **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, and Volkswagen Settlement, that should support and incentivize greater SB 375 emission 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 emission reductions achieved through SB 375.
- **Broadening technology and mobility choices.** Our transportation system is changing through proliferation of new vehicle technologies, fuels, and mobility choices. These mobility choices, if deployed correctly, present an opportunity to achieve greater GHG emission reductions through SB 375 targets.
- **Demographics.** Since targets were set, several research projects have been completed or are underway exploring how travel behavior may be changing with changing demographics in California. Particular interest has been paid to data showing 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. 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 emission 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 emission reductions, as well as improve strategies to reduce VMT.

- **Local actions.** Many cities and counties have taken action to set GHG 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 emission reductions. The Scoping Plan Update recommends local governments aim to achieve a community-wide goal consistent with the statewide emission 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 emission reductions through SB 375.
- **New State vehicle miles traveled reduction strategy.** As part of the State's Scoping Plan Update, the Administration also recently 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, adjusting performance metrics used to select and design 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 emission reductions through SB 375.
- **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 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.

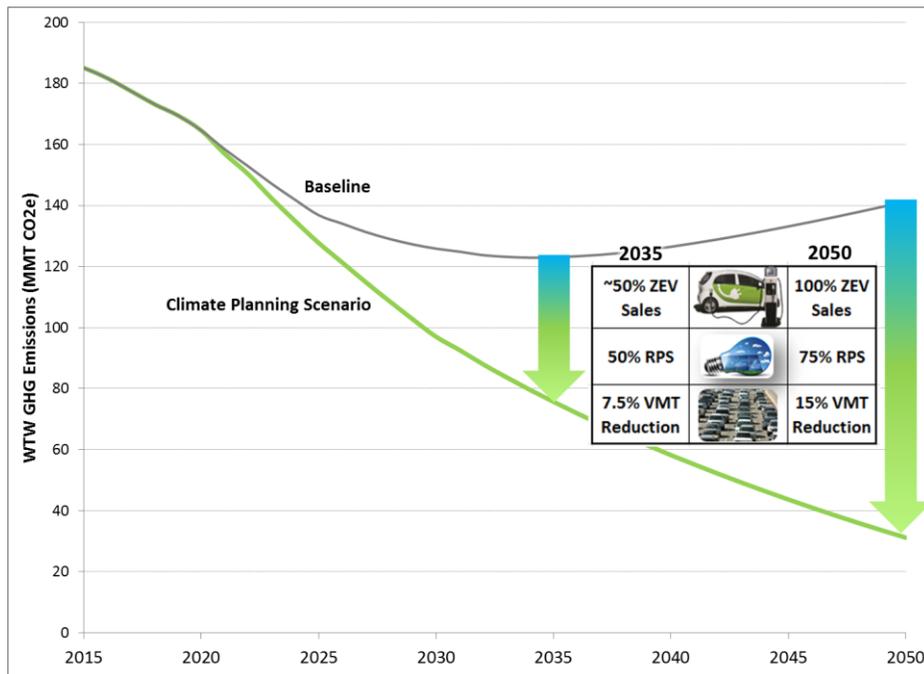
B. Top-Down Analysis: Achieving the State's Climate and Air Quality Goals

As mentioned earlier, climate and air quality policy has evolved 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 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_{2.5}). The two areas with the most critical air quality challenges include the South Coast region, and the San Joaquin Valley.

CARB is moving forward this year with updating the Scoping Plan to reflect the new statewide goal for 2030 called for in SB 32. The Scoping Plan Update addresses emission reductions from the transportation sector as a whole, and recommends strengthened SB 375 targets as a measure to achieve greater GHG reductions than would occur under currently adopted SCSs.

At the same time, the plan recognizes that targets are only one of many measures the State must take to meet its transportation sector goals. The Scoping Plan Update includes substantially greater increases in sales of zero-emission vehicles (ZEVs) compared to current requirements, greater increases in fuel efficiency standards for gasoline vehicles compared to current requirements, and a reduction in statewide VMT compared to currently adopted SCSs. While most of the GHG reductions from the transportation sector will come from technologies and low carbon fuels, reduction in the growth of VMT is also necessary. Figure 1 illustrates the combined contributions of GHG emission reductions envisioned for the passenger vehicle sector. The blue segment represents the GHG emission reduction contribution from VMT, which is a comparatively smaller share than the GHG emission reductions called for by advances in technology and fuels.

Figure 1: Statewide On-Road GHG Emissions



WTW = well-to-wheel emissions
 MMT CO₂e = million metric tons carbon dioxide equivalent
 RPS = renewable portfolio standard

The Scoping Plan Update also recognizes the role 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 reduction targets will enable the State to make significant progress toward these goals, but alone will not provide all of the reductions needed. While currently adopted SB 375 plans achieve, in aggregate, a 17 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 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:⁴

- 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.).
- Adjusting performance measures used to select and design transportation facilities to ensure projects harmonize with 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. low-emission vehicle zones for heavy duty, road user, parking pricing, transit discounts).

⁴ 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 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 (SACOG, MTC, SCAG, and SANDAG) voluntarily conducted a hypothetical, less constrained form of scenario planning to determine what kinds of strategies and factors could generate the additional GHG emission 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;
- More aggressive implementation of technology solutions (e.g., increased deployment of electric vehicle infrastructure);
- Innovative mobility solutions (e.g., ridesourcing and autonomous vehicles);
- Active transportation;
- Pricing; and
- Transit

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 in March 2017. The tests indicated that additional GHG reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies, and provided ranges of magnitude for some of the policy lever areas above.

As part of this work, the four MPOs identified several barriers to realizing the full benefits of the test ranges reported. They noted that all assumptions tested would require either additional revenue sources and or regional/State/federal rule or guidance changes. In particular, current transportation spending formulas and allocations provide little flexibility to shift funding to more sustainable transportation projects. The MPOs also cited concerns with testing further deployment of some of these policy levers at all, as they may present issues related to social justice, such as displacement and inequitable transportation cost burden.

Furthermore, all four MPOs identified challenges with maintaining the GHG reductions they had previously estimated would come from their currently adopted plans, primarily due to significant changes in forecasts for clean vehicle fleets. As passenger vehicle fleets get cleaner through increased fuel efficiency, the cost of driving decreases, and can lead to more driving, as well as lost gas tax revenues for funding transportation improvements.

Based on these findings and discussions with their Boards, all four of these 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, as well as 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 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 adopted SCSs. Fresno COG has recommended a 2035 target of 13 percent, which exceeds the estimated 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.

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 has also 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.

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 propose a set of targets that meet all the identified objectives. This set of proposed targets calls for greater per capita GHG emission reductions from SB 375 than are currently in place, which for 2035, translate into proposed targets that either match or exceed the emission reduction levels contained in the MPOs' currently adopted SCSs.

SB 375 calls for CARB to set GHG emission 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, this excludes reductions anticipated from implementation of State technology and fuels strategies, and any potential future State strategies such as statewide road user pricing. CARB staff believes that to achieve the intent of the legislation and to maximize community co-benefits, the per capita GHG emission reduction targets should be achieved predominantly through strategies that reduce VMT.

As proposed, CARB staff's proposed targets would result in an additional reduction of greenhouse gas emissions of over 10 million metric tons of CO₂ per year in 2035 compared to the current targets.

CARB staff recommendations for the individual MPO region targets pursuant to SB 375 are described in the following sections. See Appendix A. MPO Target Recommendations and CARB Staff Recommendations for additional detail.

A. Proposed Targets for Year 2020

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 in 2020 and 2021, CARB staff does not expect future MPO SCS planning to change current projected GHG emission reductions for 2020. CARB staff views updates to the 2020 targets as a clean-up step and an important indicator to monitor success of SB 375 and SCSs going forward. Thus, CARB staff proposes to bring the 2020 targets in-line with the projected GHG emission reductions of the MPOs' most recent, adopted SCS. Table 1 shows CARB's draft proposed target for each MPO for 2020 compared to CARB's currently adopted targets from 2010, and the MPO target recommendations for 2020.

Table 1: 2020 Target

MPO	Currently Adopted Target	MPO-Recommended Target	CARB Draft Proposed 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%	-8%	-8%
Santa Barbara CAG	0%	-13%	-13%
Shasta RTA	0%	-	-4%
Tahoe MPO	-7%	-8.8%	-8%

B. Proposed Targets for Year 2035

The target update process is most heavily focused on updating the 2035 target. CARB staff considered a number of factors in its assessment of what might be ambitious and achievable by 2035 for each of the MPOs. Based on the best available information from both the MPO's recent analysis results, 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 higher target levels than the current targets, and in some cases, than the target levels recommended by the MPOs are within reach. Additional opportunities and considerations include:

- **Additional and Enhanced Strategies.** It is important to note that 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 in future SCSs, compared to what is included in their currently adopted SCSs. Table 2 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. While quantitative values were not analyzed or provided for every policy lever area, CARB staff acknowledges the potential for additional GHG reductions in these policy lever areas.

Table 2: Summary of Quantitative Results Provided by the MPOs

Strategy Type	SACOG*	MTC*	SANDAG*	SCAG*
Land Use	-4%	Value Not Provided	-2%	-0.1%
Transit		Value Not Provided	-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

- Additional Funding Resources and Tools.** As part of the bottom-up target recommendation process, MPOs have identified several challenges to incorporating the additional or enhanced strategies discussed above to achieve higher targets; primarily declining transportation revenue, fixed transportation spending allocations, and local authority considerations. MPOs and local agencies have identified the need for additional funding resources and tools that provide the needed incentives to add and enhance strategies and transition to a transportation system that offers true alternative mobility options. Since the time MPO target recommendations were developed, however, 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.⁵ In addition, some jurisdictions have recently passed local tax measures that can assist in SCS implementation.

Furthermore, as part of the Scoping Plan Update, CARB staff and our sister State agencies have identified and recommended new State commitments for resource and regulatory support related to SCS strategy areas that were not analyzed as part of the MPO recommendations. While the full anticipated benefits of these statewide strategies cannot be counted toward meeting the SB 375 targets, 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 reductions coming from 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 and our sister State agencies will convene a VMT reduction “roundtable”, for State agencies, MPOs, and subject experts to help further develop these new State-level actions, in a way that that will help regions implement key SCS strategies and policies that maximize GHG emission reductions, as well as co-benefits.

- **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. An evaluation of CARB’s independent analysis of the rebound effect as part of its Advanced Clean Car Regulation⁶ and U.S. EPA’s Mid-Term Review⁷, CARB staff expects the impact to be minimal, on the order of approximately 1 percent increase by 2035.
- **Modeling Factors.** CARB staff is committed to work with the MPOs on standardizing modeling assumptions and methods affecting target achievement calculations as part of updating CARB’s methodology for reviewing emission

⁵ See Senate Bill 1: 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; Volkswagen Settlement: https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/vw-zevinvest.htm

⁶ See California Air Resources Board, LEV III Economic Analysis Technical Support Document, Appendix S, December 7, 2011, <https://www.arb.ca.gov/regact/2012/leviiighq2012/levapps.pdf>.

⁷ 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>.

reductions from SCSs. The update will help the program better account for emission reductions, as well as provide greater certainty to MPOs that exogenous modeling factors will not detract from their ability to achieve higher targets.

Based on these considerations, CARB staff estimate that through different combinations of strategies in each region, most MPOs may be able achieve additional reductions on the order of 1 to 5 percent compared to each of their currently adopted SCSs. CARB staff's target recommendations apply this estimate differently across the regions, recognizing that regional differences continue to affect what can be achieved in each region and that different individual targets continue to be appropriate.

For the four large MPOs, CARB staff took the midpoint of the reduction range (3 percent) and applied it to the emission reduction estimate for their currently adopted SCS to come up with their individual target recommendations. For the Valley MPOs, CARB staff applied a stepped reduction range of 1 to 2 percent additional reduction compared to their adopted SCSs, reasoning that certain strategies would not yield as high a benefit as in the more urbanized MPOs. For the remaining six MPOs, recognizing that overall rate of growth is expected to be slow compared to the other MPO regions and that travel patterns in these regions are also unique, particularly for those that are recreation and vacation destinations, CARB staff recommend targets in line with at minimum maintaining reduction ranges of their currently adopted SCSs. See Appendix A. MPO Target Recommendations and CARB Staff Recommendations for additional detail.

Table 3 shows the currently adopted target, estimated reductions with currently adopted plan, MPO target recommendation, and CARB staff's draft proposed target for each MPO for year 2035.

Table 3: 2035 Target

MPO	2035			
	Current Target	Current SCS Performance	MPO Recommended Target	CARB Staff Proposed Target
MTC/ABAG	-15%	-16%	-18%	-19%
SACOG	-16%	-16%	-18%	-19%
SANDAG	-13%	-18%*	-18%	-21%
SCAG	-13%	-18%	-18%	-21%
Fresno COG	-10%	-10%*	-13%	-13%
Kern COG		-13%*	-13%	-15%
Kings CAG		-12%*	-12%	-13%
Madera CTC		-15%*	-15 to -20%	-16%
Merced CAG		-12.7%*	-12.7%	-14%
San Joaquin COG		14%*	-14 to -15%	-16%
Stanislaus COG		14%*	-14 to -15%	-16%
Tulare CAG		15%*	-15 to -16%	-16%
AMBAG	-5%	-6%	-6%	-6%
Butte CAG	1%	-7%	-7%	-7%
San Luis Obispo COG	-8%	-10.9%	-8%	-11%
Santa Barbara CAG	0%	-15%	-17%	-17%
Shasta RTA	0%	-0.5%	-3.5%	-4%
Tahoe MPO	-5%	-5%	-5%	-5%

Italics indicates an SCS that is adopted but not yet evaluated by CARB

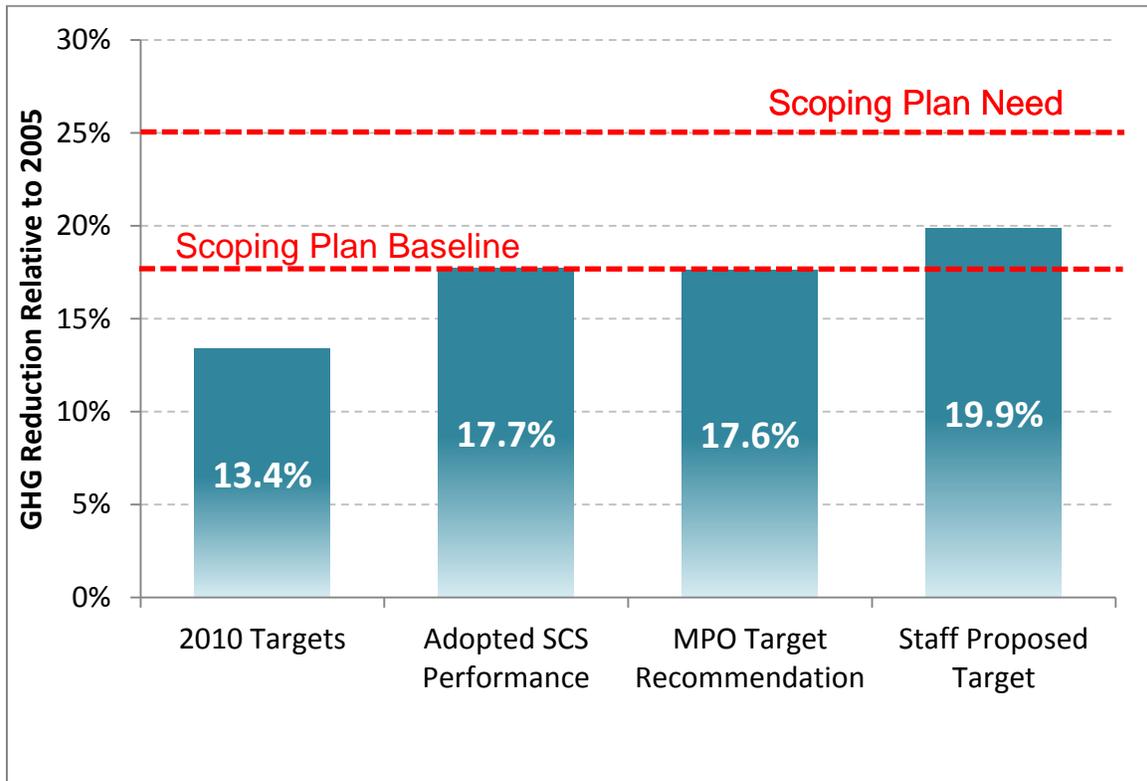
*Based on preliminary updated modeling analysis provided by SANDAG and the Valley MPOs.

At the personal travel level, CARB staff’s proposed targets are equivalent to reducing VMT a half a mile per person per day. When considering a person’s daily travel patterns, this would translate into individuals having the option to combine multiple different travel options, such as one bike or transit to work day a month, carpooling or vanpooling, one telecommute day a month, and biking and walking for grocery or other errands.

Figure 2 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 SB 375 and other VMT reduction strategies need to provide a 25 percent reduction in statewide per capita greenhouse gas emissions relative to 2005 by 2035 to meet these goals (shown as the “Scoping Plan Need” dashed line). CARB staff’s proposed targets would achieve about 20 percent

reduction in statewide per capita GHG reduction, compared to a roughly 17 percent per capita reduction being proposed by the MPOs; the 17 percent reduction in aggregate is nearly equivalent to their currently adopted SCSs and the Scoping Plan Update baseline. Also shown, are the current SB 375 targets, which achieve about a 13 percent statewide per capita GHG reduction.

Figure 2: SB 375 Targets Relative to Scoping Plan Need



Note: Adopted SCS Performance is reflected in 2017 Scoping Plan Update Baseline

C. Achieving the Target Update Objectives

CARB staff's proposed 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 proposed targets recognize the need and importance for continued local and State partnership to meet the State's overall VMT reduction goal.

- **MPO Input.** The proposed 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 proposed 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 proposed 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 emission 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 proposed 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 emission reductions and other co-benefit effects.
- **Local and State Partnership.** The proposed 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 proposed 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 proposed 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 proposal at a series of public workshops around the State in June 2017 to solicit stakeholder feedback and input. Concurrently, as the lead agency for the target-setting process, CARB prepared a Draft Environmental Analysis pursuant to its certified regulatory program to comply with the California Environmental Quality Act (CEQA; Public Resources Code § 21080.5). The Draft Environmental Analysis provides a programmatic level of analysis of the potential direct and indirect environmental impacts associated with updating the regional GHG targets. The analysis is based on the reasonably foreseeable compliance responses associated with the implementation of SCSs designed to achieve the regional targets. The Draft Environmental Analysis is being circulated to the public and other agencies for a 45-day review and comment, and is incorporated as Appendix E of this report.

At the same time, acknowledging the challenge ahead with ensuring appropriate funding and other incentives are in place to support achievement of more aggressive SB 375 targets, CARB staff and our sister State agencies, will convene a VMT reduction "roundtable", for State agencies, MPOs, and subject experts to identify and prioritize the necessary tools, resources, and State-level actions that will help regions implement key SCS strategies and policies that maximize GHG emission reductions, as well as co-benefits.

Following the comment period, CARB staff will revise the draft staff proposal, if appropriate, based on Board and stakeholder input received. CARB staff will also prepare a document with written responses to comments raising significant environmental issues related to the Draft Environmental Analysis and requiring a written response under CARB's certified regulatory program and CEQA, and prepare a Final Environmental Analysis. A final staff proposal, the written responses to environmental comments, and Final Environmental Analysis will be made available at least 10 days prior to presentation to the Board for consideration in the fall of 2017. If the Board adopts staff's final proposal, the new SB 375 targets would become effective on January 1, 2018.

MPOs prepare SCSs according to their respective update schedules, which mean the next set of SCSs subject to updated targets will be prepared at different times over the next four years (see Appendix C for the MPO RTP update schedule). SCSs adopted in 2018 would be subject to the updated targets.⁸

Once target updates are adopted, CARB staff plans to turn its attention to revising and updating the Technical Review Methodology to reflect technical changes since the original publication, and to make clear CARB staff's recommendations for SCS reviews subject to the new targets. CARB staff will also continue working on tracking near-term indicators of SCS implementation to provide a basis for understanding whether the intended benefits of SB 375 are beginning to accrue and are benefiting communities equitably. CARB staff will seek to engage stakeholders in both these processes through multiple forums, including: the formation of collaborative stakeholder working groups, continued regular meetings with MPO and non-governmental organization stakeholders, individual meetings with other stakeholders, as requested, as well as through periodic updates on implementation efforts at Board meetings.

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 equally, if not more, important to assess the ambitiousness of the plans. Now that the SB 375 program is in its eighth year of implementation, indicators of policy change and SCS implementation are becoming available. In addition to fulfilling CARB's obligations to set targets and to determine whether SCSs achieve the targets, CARB staff plans to turn its attention to tracking near-term indicators of SCS implementation, land use change, sustainable development, and public health outcomes. The goal is to gain an understanding of whether the strategies in SCSs are working, and whether the intended benefits of SB 375 are beginning to accrue and are benefiting communities equitably. See Appendix D. SB 375 Program Background for further discussion.

⁸ California Air Resources Board staff expects MPOs that adopt an SCS or have a draft SCS released in 2017 to maintain good progress by outperforming their current targets, but the new targets will not officially take effect until 2018.