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# 2018 PROGRESS REPORT

## California's Sustainable Communities and Climate Protection Act



NOVEMBER 2018





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## **Metropolitan Planning Organizations**

Association of Monterey Bay Area Governments

Butte County Association of Governments

Fresno Council of Governments

Kern Council of Governments

Kings County Association of Governments

Madera County Transportation Commission

Merced County Association of Governments

Metropolitan Transportation Commission / Association of Bay Area Governments

Sacramento Area Council of Governments

San Diego Association of Governments

San Joaquin Council of Governments

San Luis Obispo Council of Governments

Santa Barbara County Association of Governments

Shasta Regional Transportation Agency

Southern California Association of Governments

Stanislaus Council of Governments

Tahoe Metropolitan Planning Organization

Tulare County Association of Governments

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California State Transportation Agency

California Transportation Commission

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# Abbreviations

AMBAG	Association of Monterey Bay Area Governments
AB	Assembly Bill
AHSC	Affordable Housing and Sustainable Communities
AV	Automated Vehicles
BCAG	Butte County Association of Governments
CalSTA	California State Transportation Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCI	California Climate Investment Program
CDTFA	California Department of Tax and Fee Administration
CEC	California Energy Commission
CO <sub>2</sub>	Carbon Dioxide
CPUC	California Public Utilities Commission
CTC	California Transportation Commission
FCOG	Fresno Council of Governments
FMRP	Future Mobility Research Program
HCD	California Department of Housing and Community Development
HPMS	Highway Performance Monitoring System
HQTA	High-Quality Transit Areas
KCAG	Kings County Association of Governments
KCOG	Kern Council of Governments
MAP for Healthy Communities	State Mobility Action Plan for Healthy Communities
MCAG	Merced County Association of Governments
MCTC	Madera County Transportation Commission
MPO	Metropolitan Planning Organization
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
OPR	Governor's Office of Planning and Research
RTP	Regional Transportation Plan
SACOG	Sacramento Area Council of Governments
SALC	Sustainable Agricultural Land Conservation
SANDAG	San Diego Association of Governments
SB	Senate Bill
SBCAG	Santa Barbara County Association of Governments
SCAG	Southern California Association of Governments

SCS	Sustainable Communities Strategy
SEAM/SEAT	Social Equity Analysis Methodology and Tool
SJCOG	San Joaquin Council of Governments
SLOCOG	San Luis Obispo Council of Governments
SRTA	Shasta County Regional Transportation Planning Agency
StanCOG	Stanislaus Council of Governments
TCAG	Tulare County Association of Governments
TCC	Transformative Climate Communities
TIP	Transportation Improvement Program
TMPO	Tahoe Metropolitan Planning Organization
TNC	Transportation Network Company
VMT	Vehicle Miles Traveled
ZEV	Zero Emission Vehicles

# Executive Summary

In 2008, the California Legislature passed the [Sustainable Communities and Climate Protection Act of 2008, Senate Bill \(SB\) 375](#)<sup>1</sup> as a first-of-its-kind law to recognize the critical role of integrated transportation, land use, and housing decisions to meet state climate goals. The law requires each of California's 18 regional Metropolitan Planning Organizations (MPOs) to include a new element in their long-range regional transportation plans – a Sustainable Communities Strategy (SCS). In the SCS, the MPO, in partnership with their local member agencies and the State, identifies strategies to reduce greenhouse gas emissions from driving, which can also foster healthier and more equitable and sustainable communities. Under SB 375, MPOs have spent almost 10 years engaged in planning and developing SCSs tailored to each region that outline multiple benefits for public health, the environment, social justice, and access to opportunities, if implemented.

Recognizing the importance of realizing and measuring the benefits identified through this SB 375 planning work, in 2017, the Legislature tasked the California Air Resources Board (CARB) with issuing a report every four years analyzing the progress made under SB 375 pursuant to SB 150 (Allen, Chapter 646, Statutes of 2017). SB 150 tasks CARB with preparing a report that assesses progress made toward meeting the regional SB 375 greenhouse gas emissions reduction targets, and to include data-supported metrics for strategies utilized to meet the targets. The report is also required to include a discussion of best practices and challenges faced by MPOs in meeting the targets, including the effect of state policies and funding.

This report is the first in the series that responds to that legislation and includes the fundamental finding that California is not on track to meet greenhouse gas reductions expected under SB 375. This finding is based on CARB's analysis of 24 data-supported indicators to help assess what on-the-ground change has occurred since SB 375 was enacted related to strategies identified in SCSs to meet the targets (e.g., travel patterns, funding for high-quality transit and making communities safe and convenient for walking and cycling, and building homes at all income levels near jobs and other opportunities). CARB also includes a discussion of 68 best practices and 8 challenge areas for SCS implementation that were identified through consultation with MPOs and other affected stakeholders.

In addition to these required reporting elements, CARB incorporates suggestions on ways to overcome the 8 SCS implementation challenges identified in this report. When interviewing MPOs and affected stakeholders for this report, CARB consistently heard concerns over the continued pervasive and longstanding disconnect between the factors that shape regional growth and development in California – such as transportation investment, regulatory and housing market conditions at the local,

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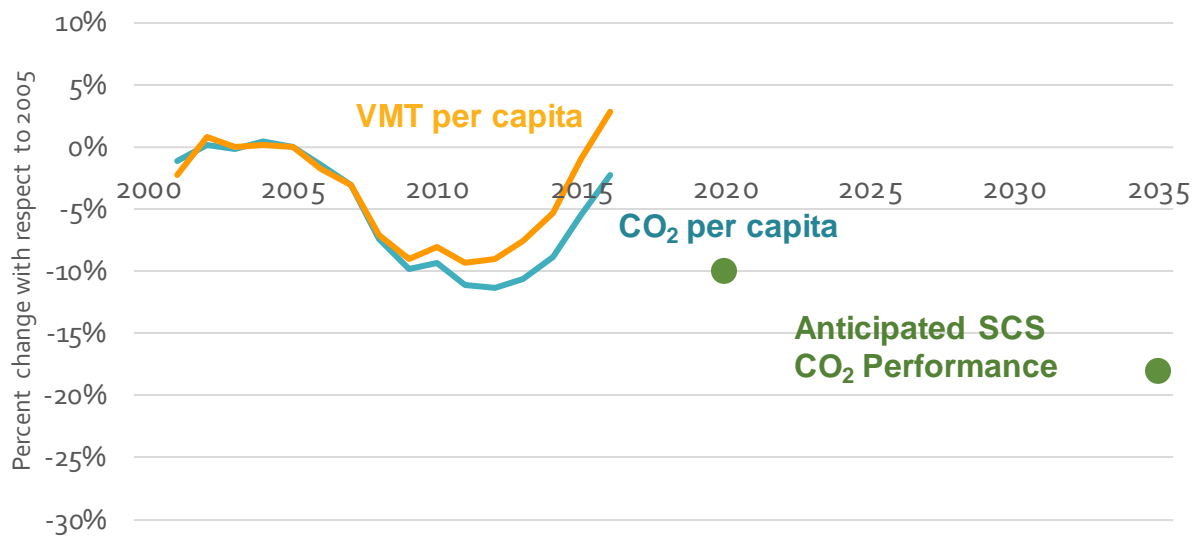
<sup>1</sup> SB 375 (Steinberg, Chapter 728, Statutes of 2008).

regional, and state levels – and the state’s environmental, equity, climate, health, economic, and housing goals. While positive gains have been made to improve the alignment of transportation, land use, and housing policies with state goals, the data suggest that more and accelerated action is critical for public health, equity, economic, and climate success. SB 375 focused its efforts on MPOs and initiating change in the way planning for growth and travel occurs, but structural changes and additional work by all levels of government are still needed to implement what regions have identified to be needed strategies. While no single agency or level of government alone bears the responsibility for this work; there is an important opportunity to partner across many agencies, with regional and local government staff and elected officials, and with communities on taking collaborative action toward better results.

## CALIFORNIA IS NOT ON TRACK TO MEET GREENHOUSE GAS REDUCTIONS EXPECTED UNDER SB 375 – MORE NEEDS TO BE DONE

A key finding of this report is that California is not on track to meet the greenhouse gas reductions expected under SB 375 for 2020, with emissions from statewide passenger vehicle travel per capita increasing and going in the wrong direction as shown in the figure below.

**Statewide CO<sub>2</sub> and Vehicle Miles Traveled (VMT) Per Capita Trend with Respect to Anticipated Performance of Current SB 375 SCSs<sup>2</sup>**



Source: CDTFA, U.S.EIA, U.S.EPA, CARB

<sup>2</sup> CO<sub>2</sub> and VMT calculated based on California Department of Tax and Fee Administration (CDTFA) gasoline fuel sales data.

While overall, California has hit its 2020 climate target ahead of schedule due to strong performance in the energy sector, meeting future targets will require a greater contribution from the transportation sector. With emissions from the transportation sector continuing to rise despite increases in fuel efficiency and decreases in the carbon content of fuel, California will not achieve the necessary greenhouse gas emissions reductions to meet mandates for 2030 and beyond

without significant changes to how communities and transportation systems are planned, funded, and built. Specifically, CARB's *2030 Scoping Plan Update*<sup>3</sup> identifies reduction in growth of single-occupancy vehicle travel as necessary to achieve the statewide target of 40 percent below 1990 level emissions by 2030. Even more will be needed to achieve Governor Brown's new carbon neutrality goal by 2045.<sup>4</sup>

Lack of progress to date puts California at risk of not achieving the important public health, equity, economic, mobility, housing, and other benefits that SB 375 SCSs are expected to deliver.

This lack of progress to date also puts California at risk of not achieving the important public health, equity, economic, mobility, housing, and other benefits that SB 375 SCSs are expected to deliver. The vision for how a region will grow, as embodied in the SCSs, and whether those visions ultimately are implemented will shape the daily lives of Californians both today and for generations to come.

Historic patterns of growth continue to shape the state today. While California has grown to be the fifth largest economy in the world, with world-class cities and thriving communities, its residents, in search of an affordable place to live, and with insufficient transportation options, are too often left with little choice but to spend significant time and money driving from place to place. The way we grow also imposes and often reinforces long-standing racial and economic injustices by placing a disproportionate burden on low-income residents, who end up paying the highest proportion of their wages for housing and commuting. These residents also often live in communities with the most health impacts from lack of active transportation infrastructure and transportation pollution. The greatest burden of health impacts in the state are from

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<sup>3</sup> California Air Resources Board. November 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*. Retrieved from [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

<sup>4</sup> Executive Order B-55-18. September 2018. <https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf>.

chronic diseases related to lack of physical activity, which would be significantly improved by more walking, cycling, and public transit use.<sup>5,6,7</sup>

In this way, growth patterns have a profound impact on both the health of individuals and the environment. Where jobs are located and homes are built, and what roads, bike lanes, and transit connect them, create the fabric of life. How regions grow impacts where people can afford to live, how long it takes to get to work, how people travel, who has easy access to well-paying jobs and educational opportunities, the air people breathe, whether it is easy to spend time outdoors and with friends, social cohesion and civic engagement, and ultimately, how long people live.

## CHALLENGES IN MEETING SB 375 TARGETS AND WAYS TO OVERCOME THOSE CHALLENGES

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California – at the state, regional, and local levels – has not yet gone far enough in making the systemic and structural changes to how we build and invest in communities that are needed to meet state climate goals. To meet the potential of SB 375 will require state, regional, and local agency staff and elected officials to make more significant changes across multiple systems that address the interconnected relationship of land use, housing, economic and workforce development, transportation investments, and travel choices.

Some positive changes have already occurred. Over the last decade, efforts have been made to better align state climate and transportation funding with sustainable communities goals. This includes implementation of a number of transportation and sustainable communities focused California Climate Investments programs funded with cap-and-trade auction proceeds. It also includes gains in statewide transit and rail investment, which has risen, both for operations and capital, through investments in high-speed rail, Road Repair and Accountability Act of 2017 (SB 1) transit funding, and some recent local measures with transit components. At the regional level, transportation investment plans are showing more funding for walking and cycling in some regions, as well as some shift within road expenditures toward road maintenance over road expansion and toward managed or high-occupancy vehicle lanes over general-purpose lanes.

Yet many challenges continue to impede the changes that will be needed to meet the targets. For example, the portion of commuters driving alone to work instead of

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<sup>5</sup> California Department of Public Health. 2013. *The Burden of Chronic Disease and Injury*. Retrieved from: [https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/CDPH%20Document%20Library/BurdenReport04-04-13\\_ADA.pdf](https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/CDPH%20Document%20Library/BurdenReport04-04-13_ADA.pdf).

<sup>6</sup> See also the National Center for Health Statistics' "Stats of the State of California" data available at: <https://www.cdc.gov/nchs/pressroom/states/california/california.htm>.

<sup>7</sup> California Department of Public Health. August 2017. *Increasing Walking, Cycling, and Transit: Improving Californians' Health, Saving Costs, and Reducing Greenhouse Gases*. 2017. Retrieved from: <https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/Maizlish-2016-Increasing-Walking-Cycling-Transit-Technical-Report-rev8-17-ADA.pdf>.

carpooling, taking transit, walking or cycling is rising in almost every region. The supply of housing in many regions is a small fraction of the need, particularly homes affordable to low-income communities, which is contributing to lengthening commutes. The overall ratio of dollars planned to be spent on roads versus on infrastructure for other modes in the largest regions of California has shown remarkably little shift. The changes that have been made so far are clearly not of the magnitude necessary to have yet had a significant impact on these challenges.

CARB interviewed a number of transportation and land use planners and stakeholders to better understand these challenges and what could be done to overcome them. Through these interviews, CARB identified many regional best practices that exemplify innovative MPO approaches in using transportation dollars to support housing, land use, accessibility, transit, and active transportation goals, partnering with local jurisdictions on delivering alternative mode plans and projects, and more (see Appendix C).

On the whole, however, CARB finds that structural changes and additional work by all levels of government are still necessary to achieve state climate goals and other expected benefits. Staff and elected officials of local, subregional, regional, and state government bodies all have critical authorities and roles to contribute and could take steps to improve the outcomes now, via robust implementation of existing and emerging tools as well as enacting new policy. But so far, all – acting rationally within the state’s current structure of incentives, political forces, and policy restrictions – have not been able to enact the magnitude of change needed. As this report’s findings suggest, the state’s current structure of policies and lack of incentives will continue to produce and exacerbate the

## **WHAT THE DATA SHOW**

### **TRANSPORTATION**

In California’s four largest regions, the proportion of overall transportation spending planned by mode remained nearly the same. The portion of people driving alone to work rose or stayed the same in most regions.

### **HOUSING**

Housing construction and permitting are significantly behind needs. Jobs/housing imbalances are increasing in many regions. Housing cost burdens have increased in every region.

### **LAND DEVELOPMENT**

The loss of agricultural land from 2000-2014 was highest in Southern California and the San Joaquin Valley. But community development patterns have led a high and increasing number of Californians to have fairly high accessibility to at least some of their daily needs, as most live near a full-service grocery store.

### **EQUITY**

Over 45 percent of all California renters spend more than 35 percent of their income on housing. Low-income and communities of color are more likely to be overburdened by housing costs.

insufficient results outlined in this report unless shared responsibility, changes in authority or mandates and incentives, and strong, deliberate, collaborative action is taken by state, regional, and local policymakers to foster a policy environment that enhances the way we live, work, and travel.

To address these entrenched challenges, substantive changes are needed, with increased focus and leadership from the State, regional, and local agencies in close coordination.



CARB recommends that an interagency body involving the Secretaries and Chairs of key California agencies and Commissions, and representatives from regional and local governments produce and implement a new “State Mobility Action Plan for Healthy Communities” that responds to this report’s findings on challenges, opportunities, and data gaps.

The State Mobility Action Plan for Healthy Communities (MAP for Healthy Communities) should identify near- and long-term actions to help address the challenges identified in this report to increase and sustain progress toward the SB 375 targets. The MAP for Healthy Communities should identify (a) responsible parties at the state, regional, and local levels; (b) timelines for work on state policy, investment strategy, data and information collection and distribution; and (c) recommended improvements to state law, including, but not limited to any possible revisions needed to SB 375. The plan should be developed through a collaborative process with appropriate state agencies, regional and local leaders, industry experts, and the public. It should build upon key recent reports including *The Governor’s Environmental Goals and Policy Report*<sup>8</sup> and CARB’s *2030 Scoping Plan Update*.<sup>9</sup> It should also build upon the work of existing state interagency bodies that are equipped to address intersections of housing, transportation, and land use policy.

As a starting point, this report identifies eight priority challenge and opportunity areas for the MAP for Healthy Communities work.

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<sup>8</sup> Governor’s Office of Planning and Research. *A Strategy for California @ 50 Million: Supporting California’s Climate Change Goals - The Governor’s Environmental Goals and Policy Report*. November 2015. Retrieved from [http://www.opr.ca.gov/docs/EGPR\\_Nov\\_2015.pdf](http://www.opr.ca.gov/docs/EGPR_Nov_2015.pdf).

<sup>9</sup> In addition to the main body of the Scoping Plan, see also California Air Resources Board. November 2017. *Appendix C: Vibrant Communities and Landscapes and Potential State-Level Strategies to Advance Sustainable, Equitable Communities and Reduce Vehicle Miles of Travel (VMT)*. Retrieved from [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_appc\\_vmt\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_appc_vmt_final.pdf).



# 1 **Improve the way the State targets transportation, housing, and climate-incentive funds to better align projects with state health, equity, economic, and environmental priorities.**

**Over \$1.1 trillion will be spent on transportation over the life of current transportation plans alone – yet these spending plans are slow to align with key goals.**

Identify, review, and revise relevant state transportation, housing, and climate-incentive funding guidelines and plans, and identify opportunities to: 1) link these funds to encourage equitable growth in housing and transportation that is better-aligned with state planning priorities for growth;<sup>10</sup> 2) fund clean transportation options such as public transit, active transportation, new mobility innovations, and traveler incentives, particularly for low-income communities; 3) prepare for climate change by creating more resilient communities, infrastructure, and natural land; and 4) introduce requirements and local decision-support tools to support further review of projects that do not align with vehicle miles traveled, greenhouse gas emissions, and other health, equity, and conservation goals. Work on relevant state funding guidelines and plans could align with the joint meetings held between CARB and the California Transportation Commission to discuss coordination on SB 375 implementation, among other key transportation-related topics that began in 2018 pursuant to AB 179.<sup>11</sup>

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<sup>10</sup> AB 857 (Wiggins, Chapter 1016, Statutes of 2002) established state planning priorities to promote infill development for people of all incomes, protect natural resources and farmland, and grow efficiently.

<sup>11</sup> AB 179 (Cervantes, Chapter 737, Statutes of 2017), directs CTC and CARB to hold at least two joint meetings per calendar year to coordinate implementation of transportation policies.

## **2 Improve incentives and legal certainty for projects that provide affordable housing choices near jobs, transit, and other high-opportunity locations.**

**Only about one-quarter of the affordable homes needed for low-income families have been built<sup>12</sup> – with homes especially needed near quality jobs, transit, and in healthy communities that offer other opportunities too.**

Assess what additional incentive (e.g., resources for local planning, funding for enabling infrastructure, financing mechanisms for transit-oriented and transit-ready development, etc.), local decision-support tools, regulatory, and other legal mechanisms can be put in place to increase homes in high-opportunity areas for low-income households and to make it easier to build homes in places aligned with the state’s planning priorities, SCS goals, and Regional Housing Needs Allocation (RHNA) goals<sup>13</sup> than elsewhere. One effort that can be built upon began this year (2018), with CARB and the Governor’s Office of Planning and Research working on guidance and evidence that developers and local jurisdictions can use to show how well-designed, transportation-efficient, and affordable projects comply with the California Environmental Quality Act and State greenhouse gas emissions reduction goals for housing development in California.

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<sup>12</sup> This statistic includes Very Low- and Extremely Low-Income California renter households, using data from the 2016 National Low Income Housing Coalition tabulations of 2014 American Community Survey Public Use Microdata Sample (PUMS) housing file. See: California Department of Housing and Community Development. February 2018. *California’s Housing Future: Challenges and Opportunities. Final Statewide Housing Assessment 2025*. Retrieved from [http://www.hcd.ca.gov/policy-research/plans-reports/docs/SHA\\_Final\\_Combined.pdf](http://www.hcd.ca.gov/policy-research/plans-reports/docs/SHA_Final_Combined.pdf).

<sup>13</sup> Gov. Code § 65584(d) and §65583(c)(5).

### **3 Develop a state vision for increasing travel choices, economic development, and access to jobs and other opportunities, as well as affordable housing for under-served communities – and by doing so, accelerate progress toward state climate, infill, health, and equity benefits.**

**A healthy place to live and basic mobility are human rights, and the inequity is clear when life expectancy between neighboring communities differs by 20 years. A new multi-stakeholder solutions-oriented approach must emerge that breaks through historical silos.**

Develop a state vision and strategy for advancing equity and reversing historic and systemic injustices, including health inequities that result in significant health disparities between populations,<sup>14,15</sup> via state transportation, housing, climate and air quality outreach, planning, and funding. Development of a state equity strategy for the areas identified above should balance state planning priorities for growth<sup>16</sup> and public health considerations, incorporate considerations from a review of best practices and cutting-edge efforts nationwide, as well as the input of communities directly. The strategy should outline ways to monitor progress and advance state climate goals, as well as identify where development of local decision-support tools would be useful. Finally, special attention should be paid to strategies that help prevent the displacement of low-income communities and communities of color. Strategy development must expand upon CARB and other agencies' efforts to promote low-income

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<sup>14</sup> Life expectancy in the San Joaquin Valley varies by zip code by 21 years. Source: Joint Center for Political and Economic Studies; Fresno State's Central Valley Health Policy Institute. 2012. *Place Matters for Health in the San Joaquin Valley: Ensuring Opportunities for Good Health for All*. Retrieved from <https://jointcenter.org/sites/default/files/PM%20English.pdf>.

<sup>15</sup> "Health equity" is defined as efforts to ensure that all people have full and equal access to opportunities that enable them to lead healthy lives. "Health disparities" are the differences in health and mental health status among distinct segments of the population, including differences that occur by gender, age, race or ethnicity, sexual orientation, gender identity, education or income, disability or functional impairment, or geographic location, or the combination of any of these factors. "Health inequities" are defined as disparities in health or mental health, or the factors that shape health, that are systemic and avoidable and, therefore, considered unjust or unfair. Source: *Portrait of Promise: The California Statewide Plan to Promote Health and Mental Health Equity. A Report to the Legislature and the People of California by the Office of Health Equity*. Sacramento, CA: California Department of Public Health, Office of Health Equity; August 2015. Retrieved from [http://www.ochealthieretogether.org/content/sites/ochca/CDPH/Portrait\\_of\\_Promise\\_Aug\\_2015.pdf](http://www.ochealthieretogether.org/content/sites/ochca/CDPH/Portrait_of_Promise_Aug_2015.pdf).

<sup>16</sup> AB 857 (Wiggins, Chapter 1016, Statutes of 2002).

communities' access to clean transportation and mobility options and to reduce exposure to air pollution in disproportionately-burdened communities.<sup>17,18</sup>

## **4 Pilot test innovative ideas to speed the adoption of clean, efficient transportation solutions across the state.**

**We all need to be asking – (1) What strategies will deliver positive transportation outcomes in the next five years? (2) How can we shift travel behavior now?**

Promote the use of pilot projects that bring together innovators, technical experts, community members, and decision-making partners to find creative solutions for accelerating a change in travel choices away from single-occupancy vehicles while improving accessibility and access to opportunity, particularly for low-income communities. Outline a plan to initiate pilot projects and to publish their results, lessons learned, and how they can be more widely deployed throughout California. Pilot projects might test which incentives best motivate travelers to shift to more sustainable travel modes; provide real-time consumer information; develop strategies for making the traveler experience outside of the single-occupancy vehicle more seamless; explore enhancements to transit operations; and/or better integrate walking, cycling, transit, and carpool options via mobility hubs or other approaches.

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<sup>17</sup> SB 350 (de León, Chapter 547, Statutes of 2015).

<sup>18</sup> AB 617 (C. Garcia, Chapter 136, Statutes of 2017).

## **5 Develop fiscally-sustainable and equitable methods of funding the transportation system, in ways that increase climate-friendly travel choices for everyone.**

**Changing the structure of costs people incur to access the transportation system provides an opportunity to more equitably and sustainably increase transportation choices, reduce congestion, and fund the transportation system as a whole.**

Pair efforts to increase transportation choices with efforts to fund the transportation system more equitably and sustainably, in a manner that aligns with environmental and health goals and that reduces congestion for those who still need to drive. Funding from pricing tools could be used to implement or fund pilot tests of strategies for improving transportation efficiency, such as shuttles, enhanced transit service, pooling facilitated by ride-hailing, protected bike lanes, and bike- and scooter-sharing, possibly to make travel easier in key zones that are currently highly congested, such as urban downtowns. Other financial incentives could be deployed more broadly as well, such as lower-cost transit passes, parking pricing, per-mile car insurance pricing options, and pricing structures for Transportation Network Companies (TNCs) that encourage carpooling and traveling at lower-demand times.

## **6 Complement deployment of new mobility options and technologies with policies supporting state environmental and equity priorities.**

**New mobility options offer a great opportunity to reduce driving while expanding overall access to destinations, but only with the right supporting policies in place.**

Convene a transportation system think tank to provide insight into the demands on the future transportation system (e.g., further system electrification, new mobility options and technologies, such as ride-hailing and automated vehicles and the economics of those technologies). The group should also identify the transformative technologies, solutions, partnerships, and critical steps to meet those demands, in a way that provides clear environmental benefits and fosters greater livability, access to destinations, and compact infill development rather than accelerating sprawl. To address one facet of new mobility, CARB began work this year (2018) to assess possible regulatory

approaches to ensure greater inclusion of zero emission vehicles in public and private light- and heavy-duty vehicle fleets, including emerging new mobility services such as ride-hailing fleets with emphasis on pooling and connections to transit. At the same time, the State has initiated a Multi-agency Workgroup on Automated Vehicles to address deployment of connected and automated vehicles in California. SB 1014<sup>19</sup> now directs CARB, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) to foster the use of cleaner cars and more carpooling in ride-hailing trips and directs CARB to set goals for reducing the greenhouse gas emissions per passenger-mile traveled, including targets for the use of zero emission vehicles.

## **7 Improve and increase access to data to assist with planning and monitoring success of state policies in meeting transportation, housing, health, and environmental goals.**

**“If you cannot measure it, you cannot improve it.”**

Develop a research and monitoring plan to fill data gaps and allow more comprehensive tracking of progress in each of the efforts identified here. Going forward, to address state goals more holistically, more and different types of data than what has historically been tracked are needed. In preparing this report, CARB documented numerous gaps in our ability to track key metrics in areas related to public health, social justice, economic opportunity, accessibility to daily needs, and natural resource values. Pages 37, 48, and 55 highlight priority data and information gaps that should be addressed.

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<sup>19</sup> SB 1014 (Skinner, Chapter 369, Statutes of 2018).

## **8 Update and strengthen SB 375 to better connect state climate, transportation, health, equity, and conservation goals with regional and local planning, and to improve implementation.**

### **Improving implementation also means doing better on aligning state, regional, and local plans.**

Develop recommendations to update SB 375 that better connect state goals and priorities with regional and local planning and implementation. While amending SB 375 alone will not solve the challenges outlined in this report, doing so can strengthen and make greater use of efforts underway in this area. Issues to consider: (1) Regional planning has many benefits and is a useful scale for examining multiple issues. While SB 375 provides regional climate-related planning targets, there are no associated state health, equity, and conservation planning goals for regional planning. Are there ways that state targets for climate and transportation, health, equity, and conservation, including those from documents such as the Scoping Plan and the California Transportation Plan, could be more directly addressed in regional plans?; and (2) Currently, SB 375 addresses planning horizon years of 2020 and 2035, but California's goals are urgent and extend beyond 2035. Should SB 375 regional planning timelines be amended to align with current state planning timelines, and reflect the importance of cumulative reductions?

## Background

The California legislature passed the [Sustainable Communities and Climate Protection Act of 2008, Senate Bill \(SB\) 375, \(Chapter 728, Statutes of 2008\)](#), as a first-of-its-kind law to recognize the critical role of integrated land use, transportation, and housing decisions in order to meet State climate goals. The law requires each of California's regional Metropolitan Planning Organizations (MPOs), who develop long-range regional transportation plans (minimum of 20 years), to include a Sustainable Communities Strategy (SCS). In the SCS, the MPO identifies strategies to reduce greenhouse gas emissions from driving and to foster healthy, equitable, and sustainable communities.

## Why Sustainable Communities Strategies Matter

State and regional partners have spent almost 10 years developing SCSs tailored to each region. The first round of SCSs for California's 18 regions is complete, and the second and third rounds of SCS planning and implementation are underway. Through

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*"My goal in authoring SB 375 was to change our transportation and land use patterns to encourage more compact development where people live close to jobs and enjoy a diversity of low-carbon mobility options, such as walking, biking, or transit. In doing so, we combat climate change, improve public health, and create more livable communities for all. Realizing the vision of SB 375 requires time and hard work. Ongoing monitoring to measure progress, identifying barriers to success, and implementing policies to overcome those barriers are key."*

*- Mayor Darrell Steinberg  
City of Sacramento*

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this work, policymakers and stakeholders have found that the importance of SB 375 goes beyond its impact on climate. Integrating land use, transportation, and housing planning shapes residents' daily lives and can advance other regional goals – to preserve farmland and natural resources for future generations, save families money on housing and transportation, clean the air we breathe, provide opportunities for physical activity, and help people spend less time stuck in traffic and more time at home or play. The SCSs contain long-term actions that each region has identified to support these goals. These include policy actions to coordinate housing, jobs, and transportation

investments to expand the clean, reliable, and affordable transportation options (i.e., cycling, walking, pooling, and transit) that Californians can access for getting from place to place.



## The Role of Carb in Monitoring SB 375 Implementation

Because SCSs are long-term plans covering multiple decades, a significant amount of effort to date has been spent looking forward and forecasting where California's regions might be in the future, while less effort has been spent looking back to assess progress. To assure future success, interim assessments must evaluate whether the strategies in the SCSs are being implemented, and how well they are working. With this information, policymakers can better understand if the state is on the right trajectory, and how to adjust course if not.

This report is the first of a series that CARB will prepare at least every four years to take stock of what progress has occurred under SB 375 to date, pursuant to SB 150 (Allen, Chapter 646, Statutes of 2017). Per the statute, CARB must assess each region's progress on achieving regional greenhouse gas emissions reduction targets. The report must include a description of the changes to greenhouse gas emissions in each region, data-supported metrics for the strategies utilized to meet the targets, as well as the challenges faced by the MPOs in meeting the targets, including the effect of State policies and funding. To this end, CARB's goal in preparing this inaugural progress report is two-fold: (1) to put forward the foundation for an effective monitoring and evaluation framework for the SB 375 program, and (2) to initiate a discussion about possible State and regional action that could overcome the challenges identified.

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*If we are going to meet California's bold climate goals, we must hold ourselves accountable. To do that effectively we need to understand our progress through active monitoring and real-time data, and be ready to make the changes needed to get us on target.*

*- Senator Ben Allen (D-26)*

*California Senate*

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## About This Report

This report seeks to present policymakers and practitioners with relevant information to help determine if implementation of the SB 375 program is achieving greenhouse gas emissions reductions and other associated benefits, to understand areas of progress and success, and to identify how future efforts might be improved. In order to develop and collect this information, CARB engaged with and relied on input from MPOs; academic experts; builders; environmental, public health, and equity advocates; State and local government practitioners; and public stakeholders. CARB conducted a written survey of MPO staff, held one-on-one interviews with a diverse set of experts and

received testimonials exemplifying community transportation challenges, asked for public input in April and May 2018, participated in stakeholder-organized events, and held four public workshops across the state in June 2018.

Over the past 9 months in the development of this report, CARB has focused its efforts in the following two areas:

- Compiling data. CARB collected and processed a set of 24 data-supported indicators to help assess what on-the-ground change has occurred since SB 375 was enacted, including indicators related to greenhouse gas emissions reductions and strategies utilized to meet the targets. CARB chose data that was publicly available, updated frequently enough to support ongoing monitoring, and of adequate quality and spatial resolution.<sup>20</sup> CARB avoided using proprietary metrics that could not be reproduced internally. These criteria had two implications:

First, a number of important measures could not be included in this inaugural report. An omission does not indicate that CARB felt that a particular issue or metric lacked value. In fact, some key conclusions of this report are that there is a need to more systematically collect and compile data that are already available, and that new data sources need to be developed to better measure California's progress in reducing greenhouse gas emissions in ways that advance health, equity, and sustainability. Second, in some cases, CARB needed to rely on existing data from MPOs, and for this reason, region-to-region comparisons of any particular data point may not be accurate or appropriate. Staff have made an effort to note these instances where possible.

- Identifying best practices, challenges, and impacts of State policies and funding to the extent possible. CARB asked MPOs, technical experts, and other stakeholders to help identify successes and challenges to date, including regional best practices and the impact of recent State policies and funding. This report distills the feedback provided by these stakeholders to CARB through surveys, interviews, and workshop discussions. In generating and summarizing this input, CARB sought to be as inclusive as possible. In this way, this report attempts to highlight the perspectives of many people who have been involved in SB 375 implementation, in one role or another, for many years.

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<sup>20</sup> Indicators reported as statewide in this report refer to the area covered by California's 18 MPOs. Because 97 percent of California's population lives in these regions, a full accounting of statewide changes would likely not differ significantly.

This report begins with a focused look at a critical question: is California meeting SB 375 climate goals; providing Californians with meaningful alternatives to vehicle travel; and coordinating land use, transportation, and housing planning and decisions? The report first provides a snapshot of progress on whether the state is on track to meet SB 375 greenhouse gas emissions targets. It then analyzes three key strategy areas for meeting the targets: transportation, housing, and land use. Each of these sections provides data-supported indicators for these strategies, explaining what is known and what requires further data. Finally, the Challenges and Opportunities section identifies and discusses challenges, regional best practices, the impacts of state policies and funding on the progress towards the SB 375 goals, as well as opportunities to help overcome identified challenges, organized by eight key areas.

For additional information and charts on the statewide and region-level data-supported metrics used in this report as shown in Table 1, see Appendices A and B. For further description and resource links to regional best practices, see Appendix C.

**Table 1. Key Questions and SB 375 Progress Performance Indicators**

<b>HAVE GREENHOUSE GASES FROM PERSONAL VEHICLE TRAVEL DECLINED?</b>
Greenhouse Gas Emissions Per Capita
Passenger Vehicle Miles Traveled (VMT) Per Capita
<b>HOW HAVE OTHER FACTORS INFLUENCED PERSONAL VEHICLE TRAVEL?</b>
Fuel Prices
Unemployment Rate And Available Jobs
Vehicle Ownership
<b>HOW HAVE TRAVEL PATTERNS CHANGED?</b>
Commute Mode Share
Commute Trip Travel Time By Mode, Including For Low-Income And Unincorporated Areas
Transit Ridership Per Capita
<b>WHAT TRANSPORTATION CHOICES ARE AVAILABLE?</b>
Transit Service Hours Per Capita
Lane Miles Built
<b>ARE INVESTMENTS SHIFTING TOWARD MORE SUSTAINABLE TRANSPORTATION CHOICES?</b>
Change In Long-Term Spending Plans By Mode
Change In Short-Term Spending Plans By Mode
Change In Transit Operations Spending
<b>HOW HAS HOUSING SUPPLY CHANGED?</b>
New Homes Built By Type
Vacancy Rate
Jobs-Housing Balance
<b>WHAT ARE THE IMPACTS OF HOUSING COSTS ON CALIFORNIA HOUSEHOLDS?</b>
Housing Cost Burden
Moving Trends And Displacement Risk Within California
<b>HOW ARE LOCAL JURISDICTIONS PLANNING AND PERMITTING HOME CONSTRUCTION?</b>
Percent Of Jurisdictions With A Certified Housing Element
Housing Units Permitted Compared To Housing Needs Allocation
<b>IS GROWTH MORE COMPACT?</b>
Acres Developed
Agricultural Land Lost
Land Conservation
<b>ARE WE BUILDING NEIGHBORHOODS THAT ARE ACCESSIBLE TO DAILY NEEDS?</b>
Percentage Of Population Living Near A Grocery Store

## Snapshot: Is California On Track To Meet Sustainable Communities Targets?

Initial indications suggest that while California has put in place appropriate long-range greenhouse gas emissions reduction targets, as well as the regional growth and investment plans that would allow it to slow growth in vehicle travel, the real-world results are falling significantly short of the SB 375 targets and are moving in the wrong direction (see Figure 1).

California's SB 375 targets are specific to each region and tied to two milestone years: 2020 and 2035. CARB originally set the targets in 2010 and recently updated them in March 2018 to address more ambitious State climate law, including SB 32.<sup>21</sup> This report assesses progress made toward the original 2010 targets, as planning and implementation actions for the recently updated targets has yet to occur.

SB 375 passenger vehicle greenhouse gas emissions reductions<sup>22</sup> cannot be directly measured because greenhouse gas emissions come from many sources. Therefore, progress in this area was estimated using gasoline fuel sales data. This was used to estimate changes in both SB 375-targeted carbon dioxide (CO<sub>2</sub>) emissions and VMT.<sup>23,24</sup>

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<sup>21</sup> For more information on updated targets approved by CARB in March 2018 see: California Air Resources Board. February 2018. *Updated Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets*. Retrieved from [https://www.arb.ca.gov/cc/sb375/sb375\\_target\\_update\\_final\\_staff\\_report\\_feb2018.pdf](https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf).

<sup>22</sup> Greenhouse gas emissions considered under the SB 375 program reflect carbon-dioxide (CO<sub>2</sub>) emissions only from light-duty passenger vehicles.

<sup>23</sup> VMT was calculated because all SCS plans anticipate progress via passenger VMT reduction.

<sup>24</sup> In the SB 375 program, CARB estimates greenhouse gas emissions by converting changes in estimated VMT into CO<sub>2</sub> emissions using its emissions factor (EMFAC) model that reflects the vehicle fleet mix and the fuel efficiency of different vehicles, vehicle speeds, and other factors that influence greenhouse gas emissions. In measuring progress under SB 375, CARB does not include greenhouse gas emissions reductions from State policies in its calculations, such as the Pavley Clean Car Standards and the Advanced Clean Cars Program, as those are counted elsewhere in the Scoping Plan.

## Have Greenhouse Gases From Personal Vehicle Travel Declined?

**Actual SB 375 greenhouse gas emissions and VMT per capita have not declined as expected, even though all regions have prepared SCSs that plan to meet the SB 375 targets with strategies that reduce greenhouse gas emissions from VMT.**

Across California, all MPOs have prepared and adopted SCSs with strategies to reduce greenhouse gas emissions reductions, specifically CO<sub>2</sub> per capita emissions reductions resulting from VMT and other greenhouse gas emissions reduction strategies (e.g., traffic improvements and clean vehicle infrastructure), which have been approved by CARB to meet the targets set in 2010. However, Figure 1 reveals that on average, from 2005 to 2016, the trend in California's CO<sub>2</sub> attributed to VMT per capita has not declined as expected. Over this time period, California Department of Tax and Fee Administration (CDTFA) gasoline fuel

sales data show that the statewide decline in SB 375-targeted per capita CO<sub>2</sub> was 2 percent as depicted by the blue line.<sup>25</sup> However, when further excluding all the benefits of fuel efficiency improvements, the data suggest that statewide passenger vehicle travel per capita (per capita VMT) has actually increased, as shown by the orange line.<sup>26</sup> In other words, the overall 2 percent decline in per capita CO<sub>2</sub> represents the combined effect of fuel efficiency gains and increases in VMT.

Statewide, current MPO SCSs plan for a 9.6 percent reduction in per capita passenger vehicle CO<sub>2</sub> emissions by 2020 and an 18 percent reduction by 2035 compared to

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*"Transportation emissions are increasing and we must understand what Californians need to help reverse that trend. This is critical since all signs indicate climate change is happening faster than expected."*

*- Mary Nichols*

*Chair*

*California Air Resources Board*

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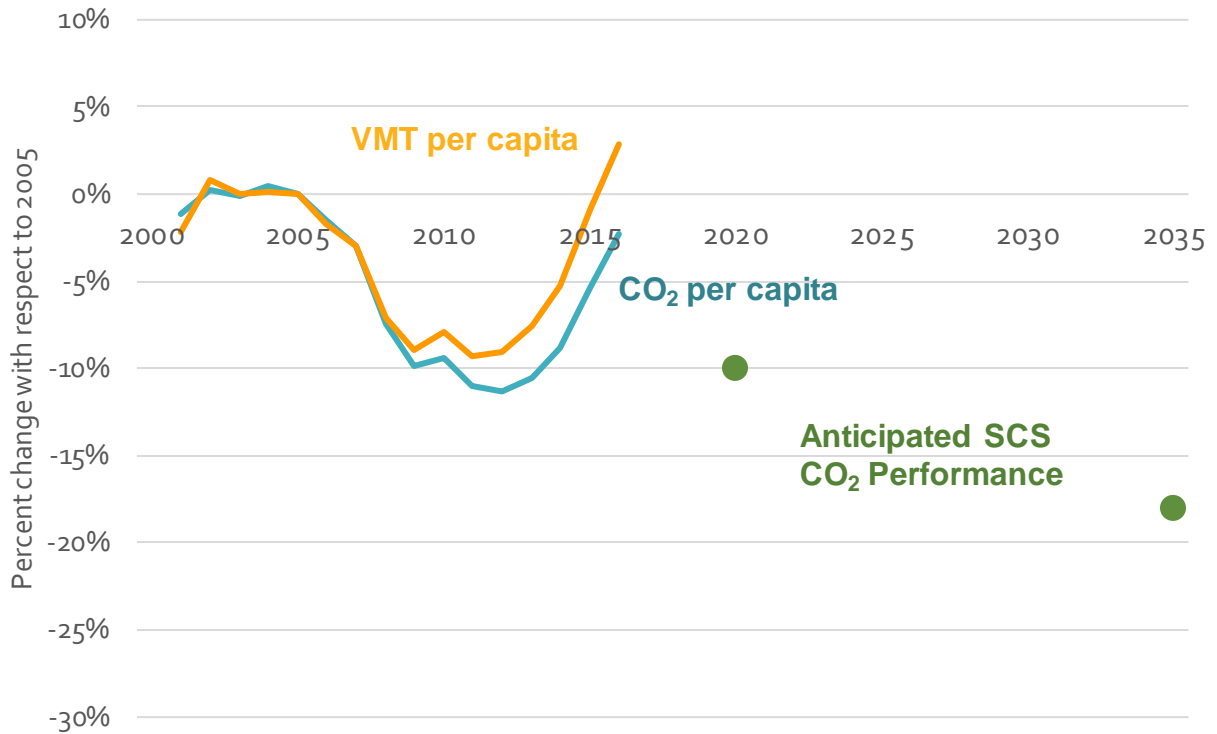
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<sup>25</sup> As estimated here, SB 375-targeted per capita CO<sub>2</sub> excludes the portion of CO<sub>2</sub> emissions reductions achieved by State policies. This CO<sub>2</sub> per capita indicator is not exactly the same as SB 375 CO<sub>2</sub> as it includes emissions attributable to non-MPO areas of the state, as well as pass-through travel in the regions, but is the closest surrogate.

<sup>26</sup> As estimated here, the trend in passenger vehicle VMT per capita includes all light-duty VMT. This VMT indicator is not exactly the same as SB 375 VMT as it includes VMT attributable to non-MPO areas of the state and pass-through light-duty VMT in the regions (external trips), but is the closest surrogate.

2005 levels, which exceed the targets CARB set in 2010, and are less aggressive than CARB’s latest target updates. This evidence shows that California is clearly not on the trajectory to meet SB 375 climate goals.

**Figure 1. Statewide CO<sub>2</sub> and VMT Per Capita Trend with Respect to Anticipated Performance of Current SB 375 SCSs<sup>27</sup>**



Source: CDTFA, U.S.EIA, U.S. EPA, CARB

**CARB is unable to report greenhouse gas emissions reduction progress by region due to data gaps.**

SB 150 requires CARB to assess the progress made by each MPO in meeting the regional greenhouse gas emissions reduction targets. Unfortunately, CARB was unable to find a data source that would allow us to accurately report greenhouse gas emissions reductions by region. The CDTFA gasoline consumption data that was used for the statewide analysis above is not available at the county-level for use in a regional

<sup>27</sup> CO<sub>2</sub> and VMT calculated based on California Department of Tax and Fee Administration gasoline fuel sales data.

analysis. While alternative data sources, specifically the California Department of Transportation's (Caltrans') Highway Performance Monitoring System (HPMS) does provide an estimate of VMT by county, CARB found irregularities that need to be addressed before this information can be used for monitoring change for this report. See Appendix A for additional discussion.

The available data make it clear that progress and challenges vary greatly by region. Other indicators such as the portion of commuters who drive alone to work, growth in the highway network as compared to change in transit service, housing production, and the increase in compact growth suggest that regions are on different trajectories, some of which may increase VMT and some of which may decrease VMT.

California's greenhouse gas emissions under SB 375 and VMT per capita for passenger travel are actually heading in the wrong direction, even though every region has prepared an SCS outlining an expected growth pattern and set of investments that will allow it to meet its greenhouse gas emissions reduction targets. This suggests that the original SCS plans are not being implemented as envisioned or are not yielding the expected results. Challenges that impede plan implementation are discussed in the Challenges and Opportunities section.

## What Factors Are Influencing Travel Decisions?







Many factors influence an individual's travel choices, and they interact with one another in a complex manner that is not always well understood. Figure 2 summarizes the key factors that CARB explored in this report. SB 375 acknowledges the important roles that investments in viable travel alternatives such as transit, cycling, and walking, as well as regional growth patterns play in influencing a person's decision. This report focuses on efforts and progress made in these areas, which are discussed in more depth across the remainder of this report.

While not the focus of SB 375, it is important to acknowledge that other factors determined at a macro-level, such as gas prices and employment, play a significant role in influencing personal travel behavior and affect SB 375 implementation. At the time targets were set in 2010 and many of the regions were preparing their SCSs in 2011-2014, gas prices had been trending upwards and were not anticipated to drop significantly. California was recovering from a significant recession, which had left many regions unsure what to assume about a future economic recovery. Beginning in 2014, however, gas prices began to make a steep decline, the unemployment rate approached pre-recession levels, available jobs finally exceeded 2005 levels, and auto ownership was in the middle of a steep upward rise.



In practice, these unforeseen shifts partially resulted in a number of SCSs projecting greater reductions in personal travel than the current trends. However, even at a time of falling gas prices, some regions' VMT declined, while others' rose, suggesting that other factors have an important impact as well. Given that these trends will continue to change over time, policymakers must think through what tools and practices will allow each region to meet its goals despite continued variability.

**Figure 2. Factors Influencing Travel Decisions<sup>28</sup>**

	<p><b>Transportation:</b> Around 75 percent of commuters drove alone to work, an amount that is staying the same or growing in most regions. Transit operations spending increased, but just enough to keep pace with population growth and rising costs, and ridership fell in recent years. Spending on active transportation, such as infrastructure to support safer walking and cycling, also grew. But in California’s four largest regions,<sup>29</sup> the proportion of overall transportation spending by mode remained nearly the same. From 2010 to 2016, Californians spent more time on their commute, whether they drove or took public transit.</p>
	<p><b>Housing:</b> New home construction began to recover from the recession, led by multi-family home construction, mostly in the more urbanized regions. While a strong majority of localities have created certified Housing Elements, housing construction and permitting were significantly behind housing allocations and SCS plans, especially in lower income categories. Jobs/housing imbalances have recently increased in many regions. Housing cost burdens also increased in every region. Low-income residents moved more and are less likely to move into different geographic areas of the State than higher-income residents.</p>
	<p><b>Land Development:</b> The number of acres being developed fell greatly during the recession but then began to rebound. While growth became more efficient (measured in persons / developed acre), the pattern differed substantially in rural and urban regions and recently began to become less efficient in some places. The loss of agricultural land from 2000-2014 was highest in Southern California and the San Joaquin Valley.</p>
	<p><b>Access to Goods and Services:</b> The vast majority and an increasing portion of Californians had access to a grocery store within one mile of their home if they lived in an urban area or ten miles in a rural area. Neighborhoods with convenient or even walkable goods and services can make it easy to drive less.</p>
	<p><b>Equity:</b> Low-income communities tended to have shorter auto and transit commutes, commutes for unincorporated communities tended to be longer, compared to regional averages. However, renters of color and Hispanic renters were more likely to be overburdened by housing costs than white renters. This report identifies a number of steps that California can take to better track whether health, mobility, and access to opportunities are improving, and whether burdens are easing, as efforts are made to reduce greenhouse gases.</p>
	<p><b>Economy:</b> Around 2011-2013, employment and vehicle ownership rose, while gas prices fell.</p>

<sup>28</sup> The information provided in this table are findings from this report. Further detail is provided in the report that follows. A full description of sources and methods is available in Appendix A.

<sup>29</sup> The report often focuses on the four largest regions: Southern California, the San Francisco Bay Area, San Diego County, and the Sacramento region.

## Additional Action Is Needed

These findings indicate the need for additional action. The State is not on track to meet the greenhouse gas reductions expected under SB 375 for 2020. Furthermore, despite meeting California's overall 2020 climate target ahead of schedule, greenhouse gas emissions from the transportation sector continue to rise across the State.

Meeting future targets will thus require a stronger contribution from this sector, and specifically the transportation system. Without a significant change to the current trajectory, California will not achieve the necessary greenhouse gas reduction mandates for 2030. Specifically, CARB's *2030 Scoping Plan Update*<sup>30</sup> identifies additional VMT reduction beyond that included in the SB 375 targets as necessary to achieve a statewide target of 40 percent below 1990 level emissions by 2030. Even greater reductions will be needed to achieve the new carbon neutrality goal by 2045.<sup>31</sup>

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*"Planning decisions are ultimately health decisions. Unfortunately, the plans and investments to achieve healthier communities envisioned by SB 375 are falling short. Local, regional, and state leaders need to urgently rethink those decisions, listen to their communities and get on the right track."*

- Will Barrett

*Clean Air Advocacy Director  
American Lung Association in California*

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By failing to meet its greenhouse gas emissions reduction targets through these strategies, California will put at risk all the other important benefits linked to reducing VMT. These benefits include improvements in public health, especially in communities that are already the most burdened by pollution, as well as conservation of natural and working landscapes, expanded access to homes at a range of income levels, reduced traffic congestion and road maintenance burden, and improved transportation choices for people of all incomes.

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<sup>30</sup> California Air Resources Board. November 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*. Retrieved from [https://www.arb.ca.gov/cc/scopingplan/scoping\\_plan\\_2017.pdf](https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf).

<sup>31</sup> Executive Order B-55-18. September 2018. Retrieved from <https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf>.

## CAN WE NOT JUST REDUCE GREENHOUSE GASES BY SWITCHING TO CLEANER VEHICLES AND FUELS?

CARB's 2017 *Climate Change Scoping Plan Update* conducted a comprehensive assessment of greenhouse gas emissions reductions strategies. The plan concludes that California cannot meet its climate goals without curbing growth in single-occupancy vehicle activity.

Even if the share of new car sales that are ZEVs grows nearly 10-fold from today, California would still need to reduce VMT per capita 25 percent to achieve the necessary reductions for 2030.

Furthermore, strategies to curb VMT growth help address other problems that focusing exclusively on future vehicle and fuels technologies do not. For example, spending less time behind the steering wheel and more time walking or cycling home, with the family, or out with friends can improve public health by reducing chronic disease burdens and preventing early death through transport-related physical activity. Improving access to affordable homes in high opportunity areas that are walkable, bikable, and have public transit will ensure that more Californians are able to benefit from these improved health outcomes. Finally, reducing vehicle travel will be crucial to keep congestion from both bringing traffic to a standstill and continuing to put pressure on the state's roadway infrastructure as population grows.

Efforts to reduce vehicle travel are a key component of California's efforts to preserve our climate and build healthier, more sustainable, equitable and more prosperous regions for future generations.

## Strategies for Meeting the Targets

In order to see greater results in the future policymakers need to better understand what has happened over the last decade. Indicators allow us to assess whether or not California's regions have begun the transition to building healthy, sustainable communities. This section of the report identifies and summarizes CARB's analysis of data-supported indicators for measuring progress across key strategies identified in SCSs to meet SB 375 targets in the areas of travel, housing, and land use.<sup>32</sup>

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<sup>32</sup> SB 375 notes that achieving state climate goals requires achieving "significant greenhouse gas reductions from changed land use patterns and improved transportation" and strengthened the link between the allocation of regional housing needs and regional transportation planning.

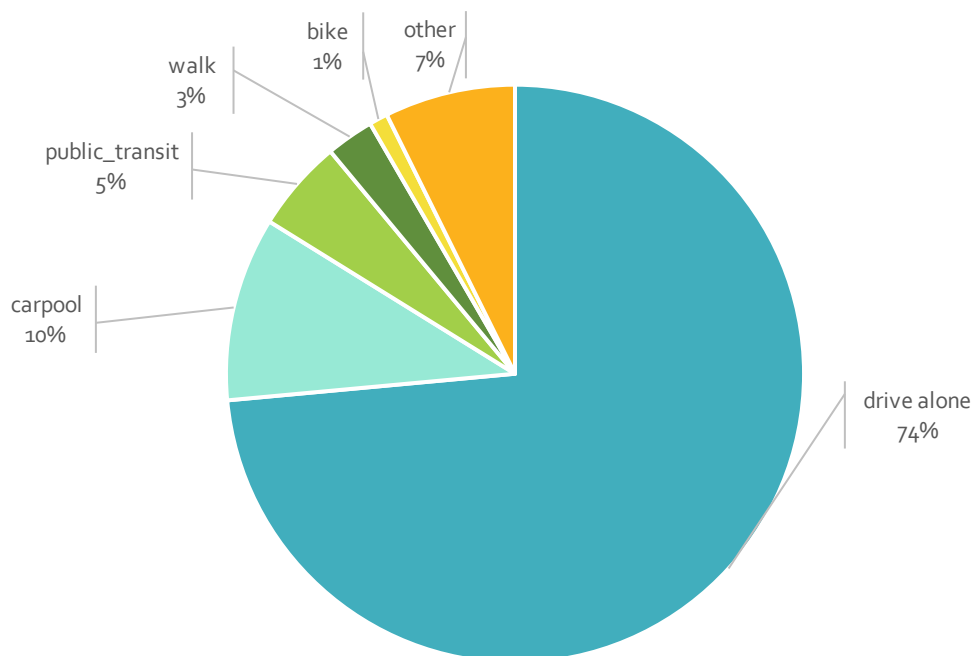
## Transportation: Transforming the Way We Travel By Providing Viable Travel Alternatives

The following discussion is focused on data points that help answer whether efforts to date have changed how Californians are traveling. CARB examines whether dependence on automobiles is declining and whether transit, carpooling, and active transportation have become more convenient and frequent choices. Data is also used to look at the extent to which long-range and short-range spending plans are shifting in ways to provide those other travel choices. CARB also identifies where additional data gathering and analysis work in this area would be useful.

### *HOW HAVE TRAVEL PATTERNS CHANGED?*

**In general, Californians are continuing to drive more, and carpool less to work. Transit ridership has begun to fall across California and there continues to be a relatively small percentage of people that walk and bike to work, approximately 4.5 percent.**

**Figure 3. Travel mode to work (2016)\***



\* Travel to work represents approximately one-quarter of all trips, though it is generally also an employed person's longest trip. Other trip purposes include school, recreation, and shopping.

- **Drive Alone:** In both 2005 and 2016, around 75 percent of commuters drove alone to work, and the trend has either remained flat or risen in most regions. The most notable exception is the Bay Area region (MTC/ABAG), where not only do a smaller share of residents drive to work alone than in any other region, but from 2005 to 2016 that percentage fell steadily from 69 to 65 percent. The Monterey and Santa Barbara regions (AMBAG and SBCAG) also have drive-alone rates that are among the lowest in California.
- **Carpool:** Despite the growing use of ride-sharing and pooling services that can facilitate spontaneous carpools, high-occupancy lanes, and other efforts to promote commute carpooling, carpool rates are falling in California.
- **Walk and Bike:** In the four largest regions, the active transportation mode share is highest in the Bay Area, where it rose from 4.2 percent in 2005 to 5.5 percent in 2016. It also increased from 2.4 percent to 3.9 percent in SANDAG, while remaining more constant in the other large regions. Some rural regions such as Santa Barbara, Butte, and San Luis Obispo, have comparatively high rates, above 6 percent, with upward trajectories. Rates in the San Joaquin Valley are lower and more mixed.
- **Transit:** While transit operations funding increased statewide since 2005, starting around 2014, transit ridership has shown a continuing declining trend across California, including in urban regions like the Southern California Association of Governments (SCAG) and rural regions like Butte. At the same time, some regions such as Kings saw increases in transit service that resulted in significant increases in ridership. For travel to work, the percentage of people commuting via public transit remained flat and at or below 5 percent in the large urban regions, except for the Bay Area, which rose from 9.4 to 11.9 percent. Other regions were generally below 2 percent for most years, except for the San Luis Obispo and Monterey regions, which were a bit higher.

### **Transit ridership data gathered through year 2017 falls far short of the 2020 performance expectations in the SCSs.**

Eight of 18 MPOs reported information on transit ridership assumptions included in their adopted SCSs for 2020 and 2035. When comparing the reported information for the nearest year (2020) to observed transit ridership information gathered through year 2017, CARB found that in all cases each plan's projections were higher than the recent trends indicate in those regions. (See Appendix B.)

**Furthermore, most Californians are spending more time on their commutes and in traffic.**

- Overall Commute Times: From 2010 to 2016, overall commute-trip travel time increased in most regions, both for automobile commuters in 13 out of 17 regions and for public transit commuters in 12 out of 15 regions.<sup>33</sup> Travel time was generally longest in the most urban regions, and travel times for transit commuters generally increased by more than for auto commuters.
- Low-Income and Rural Area Commute Times: This report also compared travel times in low-income and rural communities, and how they changed from 2010 to 2016, to regional averages. In 2016, low-income census tracts<sup>34</sup> had shorter automobile and public transit commute times than the regional averages in nearly two-thirds of regions, including the four largest. Unincorporated rural areas, which tend to be further from job centers and less well-served by public transit, did have longer commute times than regional averages: the driving time was higher in every observed region, and the public-transit commute time was higher in over three-quarters of regions. Between 2010 and 2016, average travel times changed substantially in some places and very little in others, with greater changes observed for public transit than for driving. For more information on commute times and how they changed, see Appendix A.

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<sup>33</sup> Not all regions' commute-trip travel times were reported.

<sup>34</sup> Census tracts with median household incomes below 80 percent and below 50 percent of the county median income.

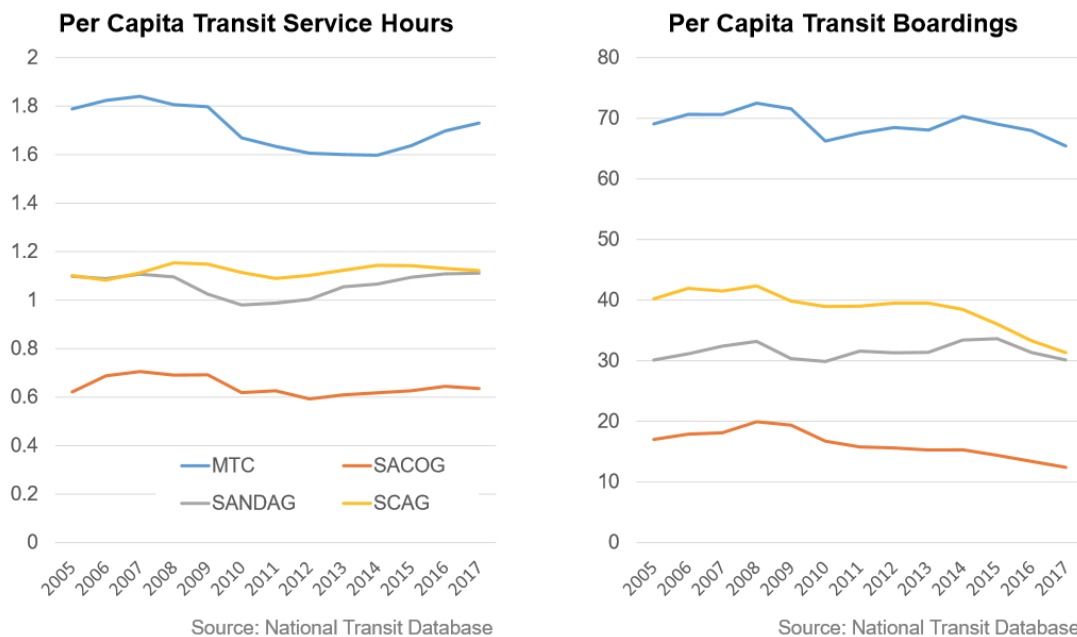


## WHAT TRANSPORTATION CHOICES ARE AVAILABLE?

Transportation choices have not yet advanced enough to help slow VMT growth. Roadways that primarily facilitate driving have continued to expand, and transit service per capita has barely rebounded to pre-recession levels.

- Roadways:** From 2005 to 2014, total statewide interstate and principle arterial lane miles built increased by 7.9 percent, or 0.4 percent per capita. Region-specific data on road expansion was available only for 2012-2014. During this time period, the road expansion rate was highest in several San Joaquin Valley Counties, especially Fresno and Merced, as well as Butte and Sacramento regions. While this roadway capacity expansion is intended to address congestion and public safety, it is well understood that new roadway capacity results in additional driving, increased air pollution, and has environmental, equity, health, and other societal impacts, and may not always result in overall reductions in congestion.
- Transit Service:** In many places, transit service hours per capita started declining in 2007-2008 during the recession. Service hours per capita started to rebound slowly in the most urban regions in 2012, but as of 2017, this has not gone above pre-recession levels.

**Figure 4. Transit Service and Transit Boardings (2005-2017)**



## BEYOND THE NUMBERS: PUBLIC TRANSIT COMMUTING IN LOW-INCOME COMMUNITIES



*One Resident from the Barrio Logan neighborhood of San Diego shares this story: “[I] utilize various modes of transportation to be part of the solution to reduce emissions, for exercise, and for fun. My commute to work would be a 30-minute drive on the freeway, but by using transit and my bike, that journey turns into a 3 hour long commute each way. To get to work, I wake up at 4 am to get ready. I leave the house at 5:30 am and bike for an hour and a half to the bus stop in order to catch the bus at 7:05 am. An hour and a half later, I finally arrive at work. At the end of my work day at approximately 5:30 pm, I begin my journey home and arrive three hours later at 8:30 pm. I [have to] make my own path to work using connecting streets, roads, trails & the public bus system. There are no signs on this daily commute that keeps me safe as a biker. I must use my protective gear, biking experience, good judgement and ultimately pray that drivers see me and make the right choice to share the road.”*

In public input for this project, CARB heard many similar stories, about long journeys to work and about certain trips that cannot be taken due to the limits of the transportation network. When reliable transportation is not available, a person may not be able to take a given job, class, shopping trip, or medical appointment. The numbers cannot measure trips not taken. They cannot adequately convey how transportation options impact daily lives, health and safety, and economic futures, nor what a region or the state as a whole loses when these connections are not made.<sup>35</sup>

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<sup>35</sup> For one resource showing statistical correlation between efforts to advance economic and racial equity, including by MPOs, and regional economic growth see: Benner, C. & Pastor, M. 2012. *Just Growth: Inclusion and Prosperity in America's Metropolitan Regions*. Routledge: New York.

This report found that a major increase in car ownership occurred in the last eight years. There is not data available on which groups purchased cars and why. It is possible that this increase may reflect a low-income community member being able to more quickly get to a job or school. It is also possible that the owners would have preferred to avoid the expense of car ownership if travel via walking, cycling, carpooling, and public transit were more convenient. Expanding low-cost transportation choices for those who need it most, especially low-income community members, can help promote achievement of California's climate goals and also improve the economic futures, health outcomes, and quality of life of local residents and the region as a whole. Under SB 350,<sup>36</sup> CARB has been working with community members to identify barriers to access clean transportation and mobility options in low-income communities, and to take action to address them.<sup>37</sup>

## ARE INVESTMENTS SHIFTING TOWARD MORE SUSTAINABLE TRANSPORTATION CHOICES?

**Important strides to increase funding for transportation choices have been made, including the largest regions of California increasing public transit, road maintenance, and active transportation spending, but current data suggest more must be done to shift transportation investments to accelerate progress on climate, accessibility, health, and equity benefits.**

- Overall Investments by Mode: Looking at the two most recent long-term spending plans in the largest four MPOs' RTP/SCSs, and the three most recent Transportation Improvement Programs (TIP), there is remarkably little shift in the overall spending allocations across roadway, transit, and bike and pedestrian infrastructure modes. However, within the smaller shifts, CARB notes some important observed trends that are described below.
- Transit Spending: From 2005 to 2016, statewide public transit operations spending increased by 60 percent from 2005 to 2016, and statewide transit capital spending increased by a factor of 2.5. However, in the largest regions, this increase in spending has been just a bit more than enough to allow providers to keep pace with rising costs and growing population. Per capita, overall transit service hours are 1.4 percent higher than in 2005, but lower in many regions than

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<sup>36</sup> SB 350 (de León, Chapter 547, Statutes of 2015).

<sup>37</sup> For more information see: California Air Resources Board. February 2018. *Low-Income Barriers Study: Overcoming Barriers to Clean Transportation Access for Low-income Residents*. Retrieved from [https://www.arb.ca.gov/msprog/transoptions/sb350\\_final\\_guidance\\_document\\_022118.pdf](https://www.arb.ca.gov/msprog/transoptions/sb350_final_guidance_document_022118.pdf).

they were at their pre-recession peak. See Appendix A for greater detail. In the decades to come, 4 out of 18 regions – MTC, SCAG, SANDAG, and Tahoe – have budgeted to spend more on transit than on roadways.

- Active Transportation Spending: In a number of regions, active transportation funding in their most recent short- and long-term spending plans was higher than previous years. However, the exact degree of change was difficult to ascertain, as regions are also simultaneously improving their ability to document active transportation expenditures, which were previously often included in road projects. In Southern California, the amount programmed for walking and cycling infrastructure grew from \$520 million for the 6 years beginning in 2015 to \$1.04 billion for the 6 years beginning in 2017. Impressive as this increase is, the amount to be spent on active transportation is still below 3 percent of total funds to be spent in SCAG’s Regional Transportation Plan.
- Roadway Spending: In the planning areas covered by MTC/ABAG, Sacramento Area Council of Governments (SACOG), and SCAG, road maintenance funding in the most recent RTP increased, and funds for road and highway expansion decreased, even as total budgets increased. In SANDAG, nearly three times as much is planned to be spent on building high-occupancy vehicle and/or toll lanes than on general purpose highway capacity in the long-term RTP, and over three times as much in the short-term TIPs. (Note: CARB received limited data on this trend from other regions.)

Looking beyond spending plans for the largest four MPOs, CARB observed some spending shifts in California’s smaller regions.

There are not large shifts in most regions in terms of what portion of transportation budgets are devoted to roads versus transit, walking, and cycling. However, transformative projects are being built. Expanding LA Metro’s rail lines, ACE Rail to Merced, BART to San Jose, and many other significant public transit investments are expected to provide new beneficial transportation options.

These findings suggest that changing spending budgets is not an easy task. The “Challenges and Opportunity Areas” section of this report includes a more detailed discussion on “State Funding for Transportation and Development Projects.” It outlines challenges such as the interplay between local, regional, and State authority; impacts of recent State actions, and some possible next steps. Important caveats to better understand the data are also included in Appendix A.

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## WHAT DO WE NOT KNOW YET, AND WHERE IS ADDITIONAL WORK NEEDED?

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**Transportation spending is administered and tracked by many different agencies, but these spending streams are not compiled to help understand whether current investments align with long-term goals.** In order to verify investments in long-range RTPs are being implemented through short-term spending, there is a need for better compilation of the different short-term spending streams.

**Many transportation data points are not collected at the community-scale, which makes it difficult to assess whether transportation investments provide equitable benefits and avoid harm for low-income and disadvantaged communities.** Some examples of data needs include where new arterials and highway lane miles are being built in proximity to low-income communities or high-minority populations, as well as whether transit service hours, measures of transit crowding, and vehicle quality are increasing or decreasing in communities that have been historically underserved.

**Air quality data is not collected at the community-scale, which makes it difficult to assess the impacts of shifting travel patterns on California's most pollution-burdened communities.** As a first step to helping further inform this discussion, CARB is now in the process of identifying disproportionately-burdened communities, building community-scale emissions inventories, and developing criteria and guidance for community air monitoring pursuant to AB 617 (C. Garcia, Chapter 136, Statutes of 2017).

**Cyclist and pedestrian infrastructure data are not compiled in a standard format across multiple jurisdictions to track whether and how these options are expanding.** More systematic and region-specific data on cyclist and pedestrian infrastructure and safety, such as the lane-miles or lane-miles per capita of cyclist and/or pedestrian facilities, the percent of residents or jobs located near high-quality bicycle lanes, the level of traffic stress or maintenance conditions on cycling facilities, and cyclist and pedestrian fatalities and injuries is needed. As a first step, Caltrans is now in the process of obtaining some of these data sets.

**Transportation Network Company (TNC) trip-level data is not available to State, regional, and local public agencies, nor to academic researchers in California to understand how they are affecting VMT and transit travel.** There is a need to obtain proprietary data from ride-hailing service providers.

**Transportation data is not collected at the resolution necessary to understand whether, how, and why people are shifting their travel patterns for their most prevalent trip types like errands, education, and recreation.** There is a need for data on non-work trips, such as from data available through big data sources or by updating travel-demand surveys.

## Housing: Providing Housing Choices for All Income Levels in Neighborhoods with Access to Sustainable Transportation Choices and Economic Opportunities

California currently faces a crisis of housing affordability. The California Department of Housing and Community Development (HCD) estimates that builders around the state need to construct 180,000 homes every year. Instead, for the past ten years, the state has built an annual average below 80,000, which is less than half of the need. As prices have soared in job centers, high housing costs may lengthen commutes if people have to drive further to find a home they can afford. The following discussion is focused on data points for housing construction, local planning for housing, affordability, and displacement. Data is used to look at the extent to which housing growth assumptions in the SCSs compared to what is happening on-the-ground are similar or not, and how this affects travel patterns. CARB also identifies where additional data gathering and analysis work in this area would be useful.

## HOW HAS HOUSING SUPPLY CHANGED?

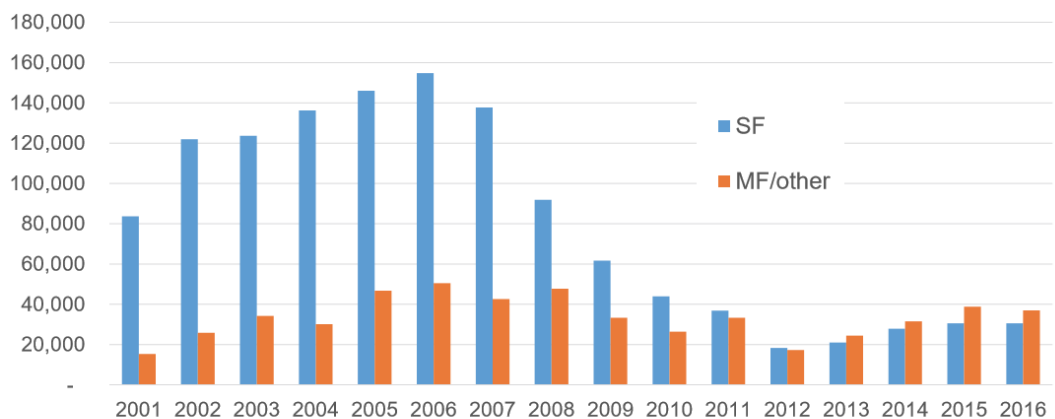
**Coordination of housing and transportation planning is key to SB 375 success. Housing production is falling far short of demand and what was planned in the SCSs.**

New home construction and vacancy rates have declined and remained at low levels in most regions. During the same period, the balance of jobs and housing supply within most regions has continued to diverge. The housing growth that has occurred has happened in the most urban regions as multi-family housing construction, but is far below the levels assumed in the SCSs for 2020 and 2035.

- **New Home Construction:** As shown in Figure 5, starting in 2007, overall home construction began to decline and has remained at low levels between 2010-2016. This pattern occurred in every region. Some of the more urbanized regions have seen a rebound in housing construction, led by multi-family home construction, which surpassed single-family home construction beginning in 2013.

**Figure 5. New Homes in California by Type**

(Single Family vs. Multi-Family, 2001–2016)

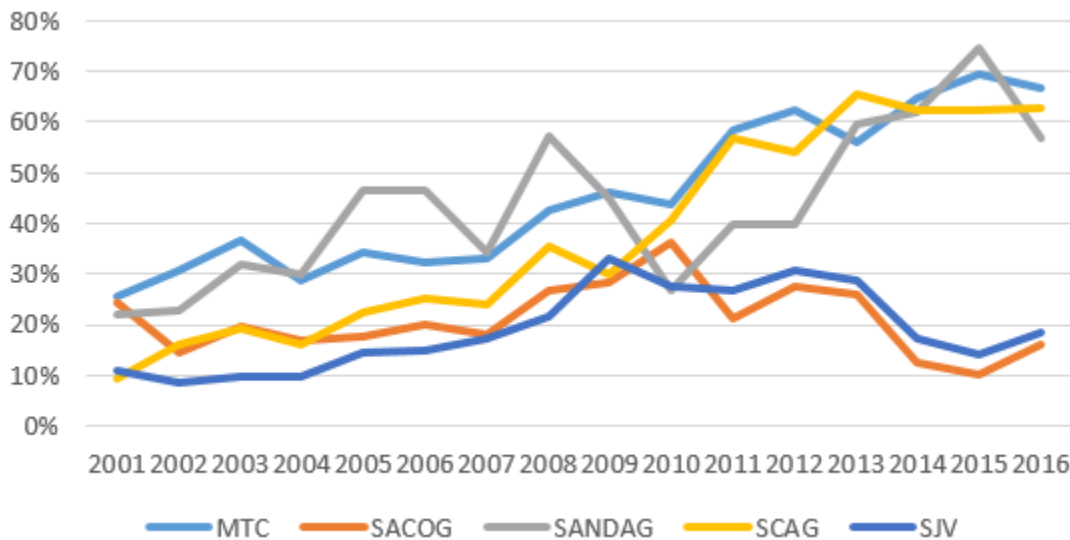


Source: CA Department of Finance

However, multi-family home construction varies greatly by region. In the San Diego, Bay Area, and Southern California regions, 50 to 75 percent of new homes have been multi-family in recent years, while in the Sacramento and San Joaquin Valley regions, it has been under 20 percent.



**Figure 6. Percent of New Homes That are Multi-Family in the Largest Regions (2001-2016)**



Source: CA Department of Finance

Thirteen of 18 MPOs reported information on total new home construction included in their adopted SCSs for 2020 and 2035. When comparing the reported information for the nearest year (2020) to observed housing information gathered through year 2016, CARB found that in all cases what is happening today falls far short of what is assumed in the plans. The plans forecasted housing growth from 2 to over 500 percent greater than the recently observed trends in those regions. These MPOs also reported information on the type of new housing construction in their adopted SCSs (e.g., single-family and multi-family housing). CARB found that the gap between plans' forecasts and the observed data was generally greatest for multi-family construction.

- **Vacancy Rate:** At their peak in 2010-2011, housing vacancies have since continued to fall in most regions, with the most dramatic declines in the Bay Area and adjacent counties of Merced and San Joaquin, as well as in San Diego County. Other San Joaquin Valley and rural counties have seen more gradual or even rising trends. Vacancy rates vary greatly across regions, from 5 to 13 percent.

- Jobs-Housing Balance: CARB looked at the degree to which jobs-housing supplies within counties diverged from the overall regional jobs-housing supply. By this metric, MTC/ABAG, SACOG, and AMBAG grew more divergent, while SCAG's balance improved over earlier years, though its imbalance is now increasing. The San Joaquin Valley counties have very similar jobs-housing balances.

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*"Transportation in the Bay Area is all about managing the flow of people going from the east, where many people can afford to live, to the west, where many of the jobs are. Until that problem gets fixed, we can make the best transportation decisions in the world, and it won't solve this enormous problem."*

*- Ken Kirkey*

*Director of Planning  
Metropolitan Transportation Commission*

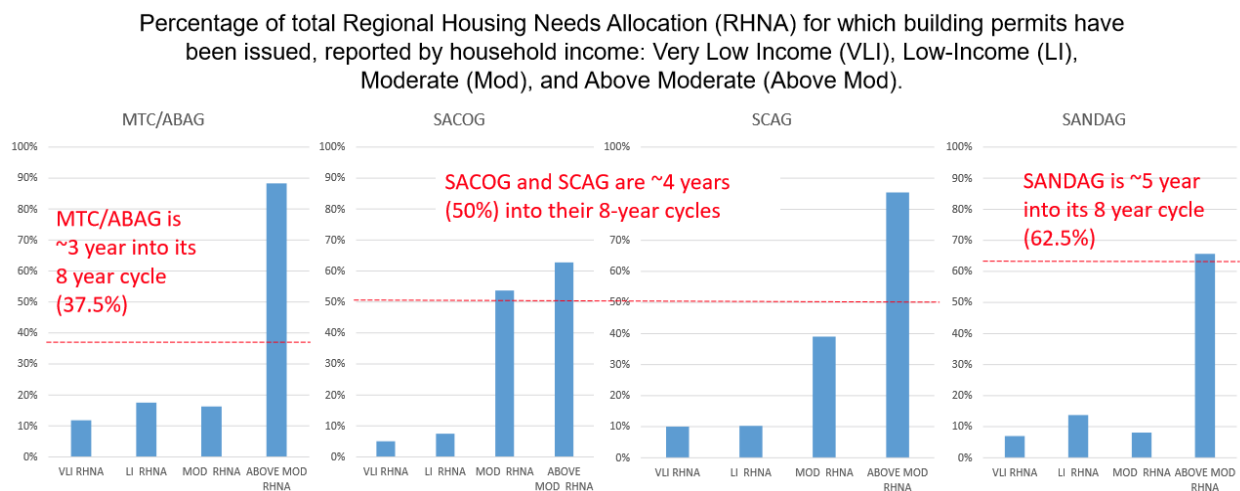
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## WHAT ARE THE IMPACTS OF HOUSING COSTS ON CALIFORNIA HOUSEHOLDS?

**Local Housing Element planning is nearly fully compliant, but actual permits issued are lagging, especially for affordable housing.**

Across California, 89 percent of local jurisdictions have certified Housing Elements with HCD. While creating a Housing Element is an important first step to show how future needs can be accommodated, it does not guarantee that housing will get built. Localities are required to submit Annual Progress Reports showing how many permits for homes they have issued in each income category to developers. However, this data is spotty, as jurisdictions with only 79.6 percent of the housing need have completed all of their Annual Progress Reports for this cycle. In the four largest regions, according to the reports that were submitted, most regions are ahead of schedule in issuing permits for housing for the wealthiest “above-moderate” housing product but are falling short in the three more affordable categories: moderate, low-income, and very low-income. In the San Joaquin Valley, local governments have issued more permits in the moderate income category. The remaining 6 rural regions, especially SLOCOG, are closest to being on track for issuing permits for housing needs at all income levels.

**Figure 7. Housing Need Permitted, By Income Level**



**As housing is becoming less affordable, California’s low-income residents are relocating at greater rates than the rest of the population.**

Housing cost burden is rising in every region, for all income-levels. At the same time, moving trends indicate that low-income persons are relocating at greater rates to inland areas outside of the larger coastal cities of Southern California and the Bay Area compared to other Californians.

- **Housing Cost Burden:** From 2010 to 2016 the percent of rental households that are burdened – defined as paying over 35 percent of their income in rent – rose in almost every income group, as shown in Figure 8. The largest percentage point increase occurred for households in the \$35k-74k categories, which rose by over 10 percentage points, however four out of every five households making less than \$20k were and remain overburdened. The data also shows differences by race and ethnicity, with African American renters the most likely to be over-burdened and with white renters the least likely to be overburdened.

**Figure 8. Statewide Housing Burden by Income**



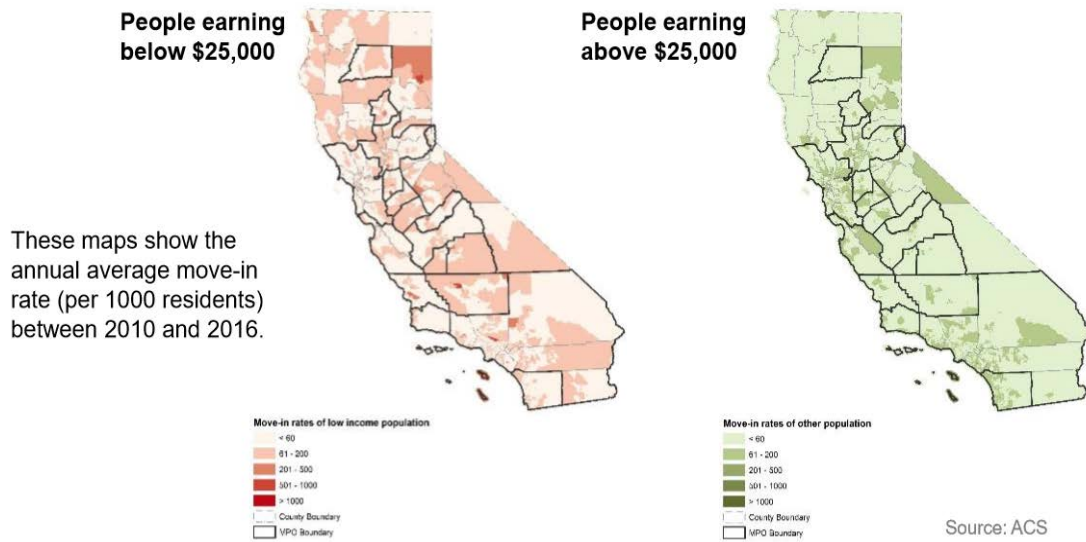
Source: ACS

- Relocation Trends and Displacement Risk: People earning less than \$25,000 per year are moving at a rate of about 18 percent higher than those earning more (71 and 60 people per 1000, respectively). Figure 9 shows where people are moving. Low-income residents are moving at greater rates to inland parts of Southern California and to the San Joaquin Valley, especially near the boundary of the Bay Area. Few are moving into the coastal areas of Southern California and the Bay Area, the latter of which has the highest displacement risk in the state.<sup>38</sup> If individuals are commuting into these job centers and unable to live closer due to housing costs, that could increase VMT and greenhouse gas emissions, as well as exacerbate the health and mental health impacts associated with displacement and long commutes.

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<sup>38</sup> Displacement risk was measured as the percentage of its counties' low-income households living in census tracts that experienced a net loss in low-income population.

**Figure 9. Annual Average Move-In Rate per 1000 Residents (2010-2016)**



## HOUSEHOLDS MOVING AWAY FROM HIGH-QUALITY TRANSIT AREAS ARE MORE LIKELY TO PURCHASE ANOTHER AUTOMOBILE, AND DRIVE MORE

A recent study on falling transit ridership in Los Angeles found possible links between increased auto ownership and displacement of low-income populations from transit areas. CARB undertook a single-year pilot study (2013-2014) to learn more about the travel and auto ownership patterns of households moving to and away from high-quality transit areas (HQTAs) and found that:

- o Statewide, for every 100 car-owning households that moved out of a high-quality transit area, only 95 moved in, possibly replaced by car-free households. Households moving away from transit added cars more than did households who moved to HQTAs.
- o Vehicles in households that had moved out of transit areas accrued 75 million more annual miles in subsequent years than those that moved to transit areas. This was both because there were 5,080 more vehicles owned by households moving from transit with their mileage tracked, and because these vehicles traveled an average of 182 more miles per year.
- o This increase in VMT for households moving from transit areas was greater for older cars: cars less than 5 years old travelled 47 more miles per year on average, those 10 to 15 years old travelled 198 more miles, and those 20 to 25 years old travelled 519 more miles than those moving to HQTAs. Although individual household income data was not available, the longer distances driven by households that drive older and less efficient cars suggests a possible link between income, distances to work and other destinations, and greenhouse gas emissions.

While these findings are preliminary and reflect just one year, they add to a body of research that has found that displacement may be occurring near transit, that lower-income households are commuting longer distances possibly due to a shortfall in affordable housing construction, and that falling public transit ridership may partially stem from displacement.

## BEYOND THE NUMBERS: THE COST OF DISPLACEMENT



*Valoria was born and raised in San Francisco, but when she couldn't afford to raise a family there, she moved across the bay to San Leandro. When her landlord converted her apartment into a condo, the nurse's assistant moved to Vacaville. Valoria still visits her hometown five days per week, when she drives her 21-year-old Honda Accord nearly two hours to her job at Laguna Honda Hospital. "The nurses that I work with — none live in San Francisco," she said. She has 21 years vested in her pension, making it difficult to leave her job. After raising four children largely on her own, she now lives with her parents, who also fled San Francisco's high prices. Both her parents worked in the city for 35 years, her father as a longshoreman, her mother a nurse. With Valoria's earning power plateauing as she reaches retirement age, she may never be able to live in San Francisco again.<sup>39</sup>*

Displacement is a complex topic, and one that is difficult to measure. For example, it is challenging to identify who moved due to a loss of housing versus who moved by choice. What is even more difficult to measure are what stakeholders asked CARB to highlight when consulted during the development of this SB 150 report – the impacts on the communities and people. Those who move are no longer near their former neighbors and friends, and may have to maintain that connection via long drives on the highway. Neighborhoods can become informal networks of mutual assistance when neighbors lend tools to one another, let one another pick fruit from their fruit tree, take care of the children while someone runs a quick errand, and so forth. They also form a cultural milieu – the social environment of life – and offer a sense of belonging. Social connectedness and cohesion is a major determinant of health,<sup>40</sup> mental health,<sup>41</sup> and personal resilience.<sup>42</sup> The loss of these connections hurts both the neighbors who leave and the neighbors who are left behind in a neighborhood they no longer recognize as home. Protecting renters and maintaining an ample supply of affordable housing for people who would like to stay in their current neighborhood not only avoids VMT as people commute back for work and social events, but also preserves neighborhood connections that can be invaluable.

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## WHAT DO WE NOT KNOW YET, AND WHERE IS ADDITIONAL WORK NEEDED?

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**Data on how the balance of affordable housing to job wage levels is changing is not collected or reported on a regular basis.** There is limited regional-level data and tracking on the balance of low-wage jobs and low-cost housing. CARB and Caltrans are jointly working to further develop this information statewide through our SB 375 indicators research project.<sup>43</sup>

**No research-supported method exists for tracking the extent to which housing unaffordability is increasing VMT.** A method is needed to track the extent to which housing costs and lack of housing supply are increasing VMT across income brackets.

**Displacement, its effects, and efforts to address it are not monitored by any public entity in California.** From an SB 375 perspective, the relationship of displacement to driving is important, especially as it relates to households moving away from more transit-rich areas. There is a need to track actual displacement and its impacts on access to opportunity through data such as move-out rates or evictions, and community accessibility measures. Similarly, further tracking of local anti-displacement strategies, especially in California's largest urban regions is needed to better evaluate the relative effectiveness of diverse policies.

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<sup>39</sup> Source: <https://www.sfchronicle.com/business/article/Commutes-to-San-Francisco-getting-longer-for-all-6685115.php>

<sup>40</sup> Umberson D, Montez JK. Social relationships and health: a flashpoint for health policy. *J Health Soc Behav.* 2010;51 Suppl(Suppl):S54-66.

<sup>41</sup> Almedom AM. Social capital and mental health: An interdisciplinary review of primary evidence. *Social Science & Medicine.* 2005;61(5):943-964.

<sup>42</sup> Klinenberg, Eric. *Heat wave: A social autopsy of disaster in Chicago.* 2015 (2nd Edition). Chicago: University of Chicago Press.

<sup>43</sup> For more information, see: [https://www.arb.ca.gov/research/single-project.php?row\\_id=65256](https://www.arb.ca.gov/research/single-project.php?row_id=65256).



## Efficient Land Use: Building Compact Neighborhoods That Are Accessible To and Near Daily Needs

Building compact neighborhoods where people of all incomes live within safe walking or cycling distance of daily errands could have significant climate benefits. By increasing physical activity, it could also greatly improve public health by significantly reducing the health burdens of chronic conditions like heart disease, diabetes, obesity, certain cancers, and depression, and preventing premature deaths.<sup>44,45</sup>

The following discussion is focused on data points that explore where and how new development is happening, and whether that has changed since the passage of SB 375. Data is used to look at the regional pattern of growth and conservation, as well as at the evidence available regarding whether growth is happening in healthy, walkable neighborhoods near jobs, public transportation, and daily needs. CARB also identifies where additional data gathering and analysis work in this area would be useful.

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<sup>44</sup> California Department of Public Health. 2013. *The Burden of Chronic Disease and Injury*. Retrieved from: [https://www.cdph.ca.gov/Programs/CCDC/DCDC/DCDCB/CDPH%20Document%20Library/BurdenReport04-04-13\\_ADA.pdf](https://www.cdph.ca.gov/Programs/CCDC/DCDC/DCDCB/CDPH%20Document%20Library/BurdenReport04-04-13_ADA.pdf).

<sup>45</sup> California Department of Public Health. August 2017. *Increasing Walking, Cycling, and Transit: Improving Californians' Health, Saving Costs, and Reducing Greenhouse Gases*. 2017. Retrieved from: <https://www.cdph.ca.gov/Programs/OHE/CDPH%20Document%20Library/Maizlish-2016-Increasing-Walking-Cycling-Transit-Technical-Report-rev8-17-ADA.pdf>.

## IS GROWTH MORE COMPACT?

**Overall, California’s recent growth trend has been more compact, however urban expansion may again be on the rise.**

The pace of urbanization declined significantly during the recession and overall the amount of land used to accommodate new population in California has decreased. Agricultural land loss followed a similar trajectory as that of overall urbanization, while lands preserved for conservation increased in most regions. However, data for the latest period of time for each of these indicators suggest that these trends may not be lasting.

- **Acres Developed:** From 2000 to 2014, approximately 740 square miles of land were developed in California, which is an area approximately twice the size of the city of San Diego. As shown in Figure 10, the majority of that development (75 percent) occurred by 2008, just over halfway through the time period, and then during the recession there was a significant decline. Data for the latest period from 2012-2014 suggests that urban expansion may again be on the rise.

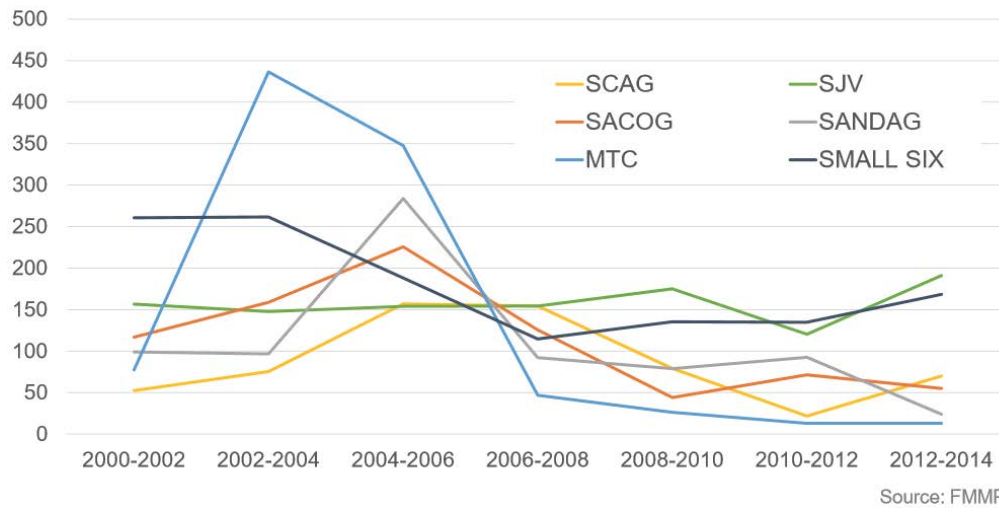
**Figure 10. Newly Developed Land Acres Statewide**



Source: FMMP

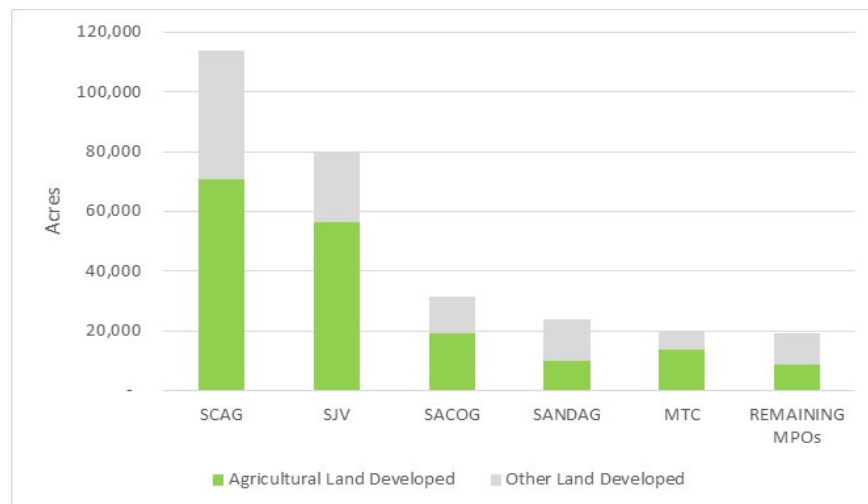
Of the development that occurred post-2008 in California, the rate of land developed per increase in population decreased and overall was more efficient. These changes in development efficiency could mean that more growth was happening as infill on already-urbanized land or at higher densities, but it could also reflect the housing shortage and declining vacancy rates discussed earlier in the report. As shown in Figure 11, variations in land use efficiency can be observed by region with rural regions generally less efficient in the use of land than the more urbanized regions.

**Figure 11. Newly Developed Land Acres (per 1000 new residents)**



- Agricultural Land Loss:** Taking a more specific look at type of land loss over the same period, total farmland and rangeland followed a similar trajectory over time as that of overall developed acres. There were increasing losses prior to the recession and decreasing losses thereafter. Data for the most recent period 2012-2014 suggests that losses of these lands may again be on the rise with total farmland loss outpacing total developed acres, largely through its conversion to other non-urban land, which can include uses such as low density rural developments. As shown in Figure 12, total losses were greatest in Southern California and nearly as high in the San Joaquin Valley.

**Figure 12. Total Acres of Agricultural Land and Total Land Developed by MPO Region (2004-2014)**



- Land Conservation: Between 2014 and 2017 lands conserved have steadily increased, except in Southern California and in Merced, San Joaquin, and Stanislaus Counties. The largest increases occurred in the Tahoe, Bay Area, Kern, and Sacramento regions.

**Assumptions of land consumption in regional SCSs have varied in how well they compare to recent growth patterns.**

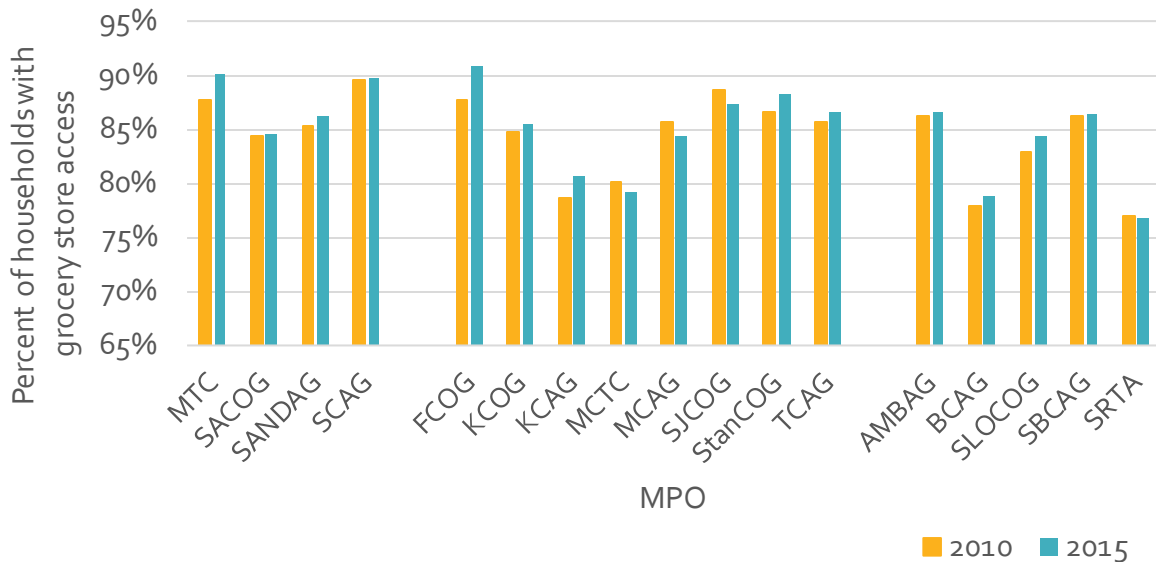
Eleven of 18 MPOs reported information on total developed land acres included in their adopted SCSs for 2020 and 2035. When comparing the reported information for the nearest year 2020 to the observed data gathered through year 2014, CARB found varied results amongst the MPOs. The SCSs for the largest MPOs assumed land consumption that is either in line or above the current trend. However, a number of Valley and smaller MPOs assumed growth patterns would be more compact, especially for the latest period from 2012-2014. If urban expansion is indeed again on the rise and barriers to infill development continue, it may be challenging for those later regions to achieve the land use patterns included in their SCSs.

## ARE WE BUILDING NEIGHBORHOODS THAT ARE ACCESSIBLE TO DAILY NEEDS?

**Some initial indicators show California’s neighborhoods are progressing toward providing daily needs within closer proximity to homes.**

Most driving occurs for non-work travel, such as for shopping, school, and socializing. Increasing proximity of these destinations to people’s homes is one factor in helping to promote walking and cycling for these daily need trips. This report used grocery store access as a proxy for the extent to which neighborhoods provide easy access to daily needs.<sup>46</sup> The good news is that most Californians, approximately 88 percent, have grocery store access within one mile of their home if they live in an urban area or ten miles if they live in a rural area, and proximity is increasing.<sup>47</sup> Access was best in the Bay Area and Southern California regions, and Fresno County. Access generally improved between 2010 and 2015, except in Madera, Merced, San Joaquin, and Shasta counties.

**Figure 13. Change in Grocery Store Access by Region**



Source: USDA Food Environment Atlas

<sup>46</sup> Grocery stores in this project were stores that “reported at least \$2 million in annual sales and contained all the major food departments found in a traditional supermarket, including fresh meat and poultry, dairy, dry and packaged foods, and frozen foods.”

<sup>47</sup> This distance reflects the data available and may or may not be the ideal distance metric to reflect accessibility.

## BEYOND THE NUMBERS: WALKABLE COMMUNITIES



*Amanda lived in Orange County and Los Angeles for her entire adult life and never had a commute to work that was less than an hour. At her last position, she drove 1.5 hours each way in traffic, from Long Beach to Los Angeles, for a total of 3 hours in the car. "I was exhausted by the time I got home. I lived in this great community, but I was too tired to experience it. I said no to friends all the time. I basically came home and went to bed." Amanda's diet consisted of a lot of fast food and little exercise, which started to impact her health and quality of life. Unable to find an affordable apartment closer to her job or a well-paying job closer to her apartment, Amanda decided to accept a position in Sacramento, a smaller and more affordable city, and found an apartment close to work. Her commute went from 1.5 hours one-way, to a 10 minute bike ride. After just a few months, she was able to get rid of her car and saw a major improvement in her mental, emotional, and physical health. "I'm not trapped in the car anymore. In fact, I don't even own one – the battery kept dying because I hardly drove it. I actually get home at a decent hour now, with plenty of energy to cook dinner or meet friends after work. My exercise is my commute. And I don't have to worry about my car, I ended up saving a lot of money not paying for maintenance, gas, or insurance."*

Research is beginning to find ways to measure the health impacts of walkable communities and short commutes. For example, in *Bowling Alone*, Robert Putnam identifies long commutes as a key predictor of social isolation. Research shows that people with long commute times suffer from disproportionate pain, stress, dissatisfaction, and there is a strong correlation with obesity.<sup>48</sup> Sitting in traffic has also been shown to increase the risk for heart attack and stroke.<sup>49</sup> However well-documented these associations are, the numbers alone cannot fully convey the benefits of walkable neighborhoods that allow for short commutes, convenient errands on foot or by bike, and having extra time to devote to hobbies or spend with family and friends. The joy and satisfaction that these can bring to a person's life are ultimately immeasurable, but nonetheless important reasons for policymakers to support the ability of all Californians to access the benefits of living in compact, high-amenity areas.

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## WHAT DO WE NOT KNOW YET, AND WHERE IS ADDITIONAL WORK NEEDED?

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**Statewide public data on transit service and development locations is not available to track progress on implementation of transit-oriented development.**

When exploring whether CARB would be able to independently monitor changes in transit-oriented development, CARB found data shortfalls related to both transit and development. Specifically, this included lack of a statewide public transit data layer, as well as available public information on building permit locations of new development.

**Information on the proximity of retail, park, health care, and other services to communities is not available to track progress on neighborhood accessibility to daily needs.** This report used grocery store access as a proxy due to limited available data sources, but there is a need for data and tracking of changes in other important indicators of neighborhood accessibility, such as neighborhood parks, retail density, health services, and education services. Additional data on neighborhood accessibility would also allow researchers to understand how demographics shift in response to the addition of more amenities, and what policies mitigate displacement of long-time residents.

**Local jurisdictions are beginning to explicitly address equity issues in their planning but no one is tracking how these efforts tie to expanding access to opportunities and promoting transportation equity.** One recent piece of legislation, Senate Bill 1000 (Leyva, Chapter 587, Statutes of 2016), “The Planning for Healthy Communities Act,” could accelerate action in this area. Further specific data on the types of local policies being adopted in General Plans as a result of this bill could be used to track local progress on planning in this area.

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<sup>48</sup> McCormack, G., & Virk, J. September 2014. *Driving towards obesity: A systematized literature review on the association between motor vehicle travel time and distance and weight status in adults.* Preventative Medicine, Volume 66, P. 49-55.

<sup>49</sup> Nawrot, T., Perez, L., Kunzli, N., Munters, E., & Nemery, B. February 2011. *Public health importance of triggers of myocardial infarction: a comparative risk assessment.* The Lancet, Volume 377, Issue 9767, P. 732-740.

## Challenges and Opportunity Areas

The data analysis in this report reveals that California is off-track from hitting its SB 375 targets, and that the state as a whole – at the State, regional, and local levels – is not making the systemic and structural changes to building and investing in communities that are needed to meet the State’s climate goals.

During preparation of this report, CARB interviewed a number of transportation and land use planning planners and stakeholders to understand the challenges that must be overcome to advance progress on SB 375 implementation. One consistent message CARB heard was that there continues to be a pervasive and longstanding disconnect between the factors that shape regional growth and development – such as transportation investment, regulatory and housing market conditions at the local, regional, and state levels – and the state’s environmental, equity, climate, health, and housing goals. While SB 375 focused its efforts on MPOs and initiating change in the way planning for growth and travel occurs, structural changes and additional work by all levels of government are still needed to implement what regions have identified to be needed strategies. Staff and elected officials of local, subregional, regional, and state government bodies all have critical authorities and roles to contribute and could take steps to improve the outcomes now, via robust implementation of existing and emerging tools<sup>50</sup> as well as enacting new policy. But so far, as a whole, all actors responding rationally to the incentives, political forces, and policy restrictions in front of them, have not been able to enact the magnitude of change needed.

As this report’s findings suggest, state, regional, and local policymakers throughout California have a shared responsibility to work with communities to foster a policy environment needed to enhance the way we live and travel. The current structure of policies and lack of incentives will continue to produce and exacerbate the insufficient results outlined in this report, unless shared responsibility, changes in authority or mandates and incentives, and strong, deliberate, collaborative action is taken to change them. CARB finds that this disconnect impedes progress on attaining the SB 375 targets and their co-benefits. In light of this report’s finding that more ambitious and accelerated efforts are needed, CARB has not only included a discussion of these key challenges, as well as regional best practices for helping to address these challenges in response to the statute, but also incorporated suggestions on further opportunities and next steps to help overcome these challenges and get the state back on track.

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<sup>50</sup> One example is Senate Bill 743 (SB 743, Steinberg, Chapter 386, Statutes of 2013), discussed more in the “Growth and the Housing Crisis” section.



To address these entrenched challenges, substantive changes are needed, with increased focus and leadership from the State, regional, and local agencies in close coordination. As a first step in this direction, CARB recommends the following key action:



CARB recommends that an interagency body involving the Secretaries and Chairs of key California agencies and Commissions, and representatives from regional and local governments produce and implement a new “State Mobility Action Plan for Healthy Communities” that responds to this report’s findings on challenges, opportunities, and data gaps.

The State Mobility Action Plan for Healthy Communities (MAP for Healthy Communities) should identify near- and long-term actions to help address the challenges identified in this report to increase and sustain progress toward the SB 375 targets. It should identify (a) responsible parties at the State, regional, and local levels; (b) timelines for work on state policy, investment strategy, data and information collection and distribution; and (c) recommended improvements to state law, including but not limited to any revisions needed to SB 375. The plan should be developed through a collaborative process with appropriate state agencies, regional and local leaders, industry experts, and the public. It should build upon key recent reports including *The Governor’s Environmental Goals and Policy Report*<sup>51</sup> and CARB’s *2030 Scoping Plan Update*.<sup>52</sup> It should also build upon the work of existing state interagency bodies that are equipped to address intersections of housing, transportation, and land use policy.

As a starting point, this section identifies eight challenge and opportunity areas, which can serve as action areas for the recommended MAP for Healthy Communities effort. These include (1) State funding for transportation and development projects; (2) growth and the housing crisis; (3) under-served communities; (4) traveler incentives; (5) transportation pricing; (6) new mobility; (7) data and research needs; and (8) limitations of SB 375. For each challenge and opportunity area, CARB summarizes information gathered through stakeholder discussions during preparation of this report on what actions are already being taken, where there are potential opportunities to address each challenge, and ideas that can be considered for next steps.

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<sup>51</sup> Governor’s Office of Planning and Research. November 2015. *A Strategy for California @ 50 Million: Supporting California’s Climate Change Goals - The Governor’s Environmental Goals and Policy Report*. Retrieved from [http://www.opr.ca.gov/docs/EGPR\\_Nov\\_2015.pdf](http://www.opr.ca.gov/docs/EGPR_Nov_2015.pdf).

<sup>52</sup> In addition to the main body of the Scoping Plan, see also: California Air Resources Board. November 2017. *Appendix C: Vibrant Communities and Landscapes and Potential State-Level Strategies to Advance Sustainable, Equitable Communities and Reduce Vehicle Miles of Travel (VMT)*. Retrieved from [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_appc\\_vmt\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_appc_vmt_final.pdf).

## State Funding For Transportation and Development Projects

**ISSUE:** The State’s role in developing regional and local plan funding guidelines – and in some cases, project selection – for transportation and development projects that utilize State money, offers an opportunity to improve the alignment of the projects that are approved and eventually constructed with the State’s health, equity, economic, conservation, and climate goals.

**OPPORTUNITY AREA:** Identify, review, and revise relevant State transportation, housing, and climate-incentive funding guidelines and plans to: 1) link these funds to encourage equitable growth in housing and transportation that is better aligned with State planning priorities (AB 857);<sup>53</sup> 2) fund clean transportation options such as public transit, active transportation, new mobility innovations, and traveler incentives, particularly for low-income communities, 2) link these funds to housing goals and encourage equitable growth that is better-aligned with 3) prepare for climate change by creating more resilient communities, infrastructure, and natural land; and 4) identify opportunities to require further scrutiny and introduce local decision-support tools when considering funding project types with poor performance on VMT, greenhouse gas emissions, and other health, equity, and conservation goals.

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### KEY CHALLENGES

CARB heard in numerous interviews and workshops that a critical test of SB 375’s progress is whether investments have shifted in ways that improve transportation choices, especially those that make it easy for people to drive less. Improving the alignment of funding, especially transportation funding, with State and regional goals is seen as a necessary strategy for success. Yet aligning funds with climate, health, and other goals can be a challenge.

Few transportation-funding sources exist that prioritize climate mitigation or VMT reduction. Some programs, particularly those funded by the Greenhouse Gas

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<sup>53</sup> AB 857 (Wiggins, Chapter 1016, Statutes of 2002) established State planning priorities to promote infill development for people of all incomes, protect natural resources and farmland, and grow efficiently.

Reduction Fund, do focus on greenhouse gas emissions reductions. And recently, the Road Repair and Accountability Act of 2017 (SB 1) made significant and supportive

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*"There is a fundamental disconnect in trying to align transportation policy and climate policy. We receive federal funds that all have specific goals and purposes, which are not climate. Yet we try so hard in California to make it fit, but it is very difficult."*

*- Kome Ajise*

*Director of Planning*

*Southern California Association of Governments*

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shifts away from past transportation packages. These included focusing the majority of funds on fixing existing infrastructure, while including historic increases in transit investments, and doubling active transportation program investments. CARB heard that these funds were absolutely essential for regions and cities. SB 1 also includes statutory provisions that require its competitive multi-modal funding programs in which highway expansion might also be funded to be restricted to only MPOs with an SCS that CARB has determined will meet the greenhouse gas emissions reduction targets. Other

State investments including High Speed Rail and those funded via cap-and-trade have also increased investment in clean transportation solutions.

But looking at State transportation funding in particular, structural factors make it difficult to align SCS planning and transportation funding allocations. Many transportation-spending decisions are not controlled by the MPOs who create the regional plans to achieve the SB 375 climate goals.<sup>54</sup> Caltrans, the California Transportation Commission (CTC), county authorities such as County Transportation Commissions, transit agencies, and local jurisdictions all hold decision-making authority over transportation funds.

Also, twenty-four counties across California have passed local transportation sales tax measures, which comprise a significant portion of many regions' transportation funds.<sup>55</sup> These measures often list specific projects, locking them in for years or decades. Often, these measures do not fully fund their listed projects, and go on to capture a

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<sup>54</sup> As of 2011, only 10 percent of transportation funding was under MPOs' direct control, ranging from 0 percent in SCAG to over 70 percent in Stanislaus. See: Rose, E. May 2011. *Leveraging a New Law: Reducing Greenhouse Gas Emissions under Senate Bill 375*. Center for Resource Efficient Communities: Berkeley, CA. Retrieved from [https://www.ca-ilg.org/sites/main/files/file-attachments/leveraging\\_a\\_new\\_law.pdf](https://www.ca-ilg.org/sites/main/files/file-attachments/leveraging_a_new_law.pdf).

<sup>55</sup> In 2018-2019, almost half of transportation funds in the State were local sources, including sales taxes along with local general funds, transit fares, and other local revenue. See: Legislative Analyst's Office. June 2018. *California's Transportation System*. Retrieved from <https://lao.ca.gov/reports/2018/3860/californias-transportation-060418.pdf>.

region's otherwise-flexible State and Federal funds. In some regions, these measures have been remarkably supportive of SB 375 goals, while not in others. Some of these measures do include explicit methods for making changes to their project lists, but regional and local leaders hesitate to diverge from the original proposal to voters, even if prevailing evidence suggests the project will not perform as originally expected, or that surrounding circumstances have changed (e.g., the emergence of State climate policies) to make another approach better.

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*"We need to more aggressively align our transportation policies and investments with our climate change goals. Focusing on cleaner transportation modes and prioritizing these investments in our most economically disadvantaged communities will help us turn this corner towards achieving climate equity and a healthier California for all."*

*- Assemblymember Eduardo Garcia (D-56)  
California Assembly*

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Some stakeholders wondered whether more of the regional transportation budgets could be used to deliver SB 375 supportive projects.<sup>56</sup> CARB heard from State and regional transportation staff, however, that many transportation funding sources could not shift, either for legal or practical reasons. Specifically, considerations such as requirements for reporting and timing, as well as constitutional limitations such as Article 19 impede use of funds for these purposes. CARB also heard that it will be important to prioritize and set

aside money for strategic projects that can build the transportation system of tomorrow, given that maintenance backlogs may continue to grow despite SB 1's significant strides to address that shortfall.

## **HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?**

A number of MPOs across the State have begun implementing practices to help work around and overcome these challenges. Some of the best practices that individual regions have undertaken, all of which are described in further detail in Appendix C, include:

- Prioritizing certain transportation projects for funding by their performance toward multiple regional goals (e.g., greenhouse gas emissions reductions, health, equity, conservation).

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<sup>56</sup> For example, some advocates point to the regional portion of the State Transportation Improvement Program, which can fund active transportation and some types of public transit investments.

- Frontloading transportation projects that promote VMT reduction.
- Putting policies in place to mitigate highway capacity increases with measures that reduce VMT.
- Creatively engaging the public, such as by providing funding for underserved communities to help identify transportation needs and prioritize projects.

While increased uptake of regional practices identified above can help, further work by State, regional, and local partners is also needed to better align available funding sources (e.g., transportation, housing, and climate-incentive funds) for transportation and development projects with the State’s health, equity, conservation, and climate goals.

### **OPPORTUNITIES AND NEXT STEPS**

In June 2018, per the requirements of AB 179,<sup>57</sup> CTC and CARB held the first of two joint meetings for the year, during which the Commission and Board jointly identified a key area of future joint work to be further aligning State transportation funds with climate goals. The CTC oversees many transportation funding programs across the State, while CARB oversees development and implementation of the State’s climate and air quality programs.

As a next step for productive collaboration on this topic, CTC and CARB – along with other State agencies such as the California State Transportation Agency (CalSTA), Caltrans, SGC, and HCD – should work together through their AB 179 joint meetings, in collaboration with

regional and local partners, to inform and initiate appropriate actions that help better align State funding guidelines and funding decisions with crucial climate, health, equity, and conservation goals by:

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*"It's time to invest our transportation dollars to meet our climate goals. It's time to invest in low income communities and communities of color. We need to make a choice to shape California's future toward the future we want."*

*- Chanell Fletcher  
Director  
ClimatePlan*

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<sup>57</sup> AB 179 (Cervantes, Chapter 737, Statutes of 2017).

- Identifying relevant State transportation, housing, and climate-incentive funding pools, for which the State sets guidelines, plans, and/or establishes performance measures for review.
- Setting forth guiding principles on review and revision of relevant funding pools that help identify opportunities to: 1) link these funds to encourage equitable growth in housing and transportation that is better aligned with State planning priorities (AB 857); 2) fund clean transportation options such as public transit, active transportation, new mobility innovations, and traveler incentives, particularly for low-income communities, 3) prepare for climate change by creating more resilient communities, infrastructure, and natural land; and 4) introduce requirements and local decision-support tools to support further review of projects that do not align with VMT, greenhouse gas emissions, and other health, equity, and conservation goals.
- Initiating work to monitor how identified funding sources are being deployed over time in order to understand how they are changing or not changing to align with the current direction.

## Growth and the Housing Crisis

**ISSUE:** Not enough housing is being built for people at every income level, but especially for lower-income households, driving up costs and lengthening commutes. Furthermore, where housing is being built, it is not well aligned with State planning priorities to promote infill development for people of all incomes, protect natural resources and farmland, and grow efficiently.

**OPPORTUNITY AREA:** Assess what additional incentive (e.g., resources for local planning, funding for enabling infrastructure, financing mechanisms for transit-oriented and transit-ready development, etc.), local decision-support tools, regulatory, and other legal mechanisms can be put in place to increase homes in high-opportunity areas for low-income households, to protect renters, and to make it easier to build homes in places aligned with the State’s planning priorities (AB 857), SCS goals, and Regional Housing Needs Allocation (RHNA) goals.<sup>58</sup>

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### KEY CHALLENGES

Cities and counties hold near-exclusive authority to regulate land use.<sup>59</sup> In discussions about why SB 375 implementation might fall short of goals, interviewees highlighted MPOs’ inability to control land use and pointed to local decisions that do not align with regional goals, such as allowing leapfrog development out in natural or agricultural areas, and failing to allow enough infill, especially affordable housing and growth in walkable or transit-oriented areas.

A particularly strong theme in the interviews was the housing shortage. Many people interviewed identified lack of housing supply in key places as the root cause of many of our transportation challenges.

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<sup>58</sup> Gov. Code § 65584(d) and §65583(c)(5)

<sup>59</sup> SB 375 law states “Nothing in a sustainable communities strategy shall be interpreted as superseding the exercise of the land use authority of cities and counties within the region” (Gov. Code. § 65080(b)(2)(J)). The land use pattern must reflect the most recent planning assumptions considering local general plans and other factors (Gov. Code § 65080(b)(2)(B)). . . . Nothing in this section shall require a city’s or county’s land use policies and regulations, including its general plan, to be consistent with the regional transportation plan or an alternative planning strategy” (Gov. Code § 65080(b)(2)(K)).

The current imbalance in housing supply in California can be attributed to many factors that are prevalent across the US, including the 2008 recession. However, California's housing shortage is particularly acute due to our unique regulatory and taxation structures. Contributing policies include:<sup>60</sup>

- Zoning restrictions that have led to a shortage of sites that allow high densities
- State and local tax and revenue structure that favors large scale retail over housing
- Variable, uncertain, and misaligned impact fee structures for new development
- Poorly calibrated, unenforced, or absent inclusionary housing and tenant-stabilization policies
- Lengthy, costly, and unpredictable review processes fueled at times by neighborhood opposition

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*"Business leaders and Bay Area residents tell us that rising traffic and housing costs are doing serious damage to our quality of life. We have to address them before they start to seriously impact our economy. These problems are intertwined—we cannot solve our transportation problems without addressing our housing problems. We can do it, but it will take bold thinking and decisive action."*

*- Matt Regan  
Senior Vice President, Public Policy  
Bay Area Council*

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AB 857 established State planning priorities: (a) to promote infill development and equity by improving existing infrastructure, particularly underserved areas, (b) to protect environmental and agricultural resources by protecting and enhancing the most valuable resource lands, and (c) to encourage efficient growth.

Builders interviewed for this project told CARB that building within existing communities continues to be more costly and difficult than building on greenfield parcels at the edge of town. Upgrading civic infrastructure in existing communities is more costly and difficult to finance than building new infrastructure. They report that regulatory and

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<sup>60</sup> See: (1) O'Neill, M., Gualco-Nelson, G., & Biber, E. *Getting it Right: Examining the Local Land Use Entitlement Process in California to Inform Policy and Process*. February 2018. Retrieved from [https://www.law.berkeley.edu/wp-content/uploads/2018/02/Getting\\_It\\_Right.pdf](https://www.law.berkeley.edu/wp-content/uploads/2018/02/Getting_It_Right.pdf). (2) Mawhorter, S., Garcia, D., & Raetz, H. March 2018. *It All Adds Up: The Cost of Housing Development Fees in Seven California Cities*. Retrieved from <https://turnercenter.berkeley.edu/development-fees>. (3) California Department of Housing and Community Development. February 2018. *California's Housing Future: Challenges and Opportunities*. Retrieved from [http://www.hcd.ca.gov/policy-research/plans-reports/docs/SHA\\_Final\\_Combined.pdf](http://www.hcd.ca.gov/policy-research/plans-reports/docs/SHA_Final_Combined.pdf).



fiscal reform is needed if a market-driven system like real-estate development is to produce the desired results.

The issues listed above are primarily State and local issues. While MPOs do create SCSs that forecast regional growth patterns, local staff and elected officials have almost exclusive authority over land use decisions. Local agency staff told CARB that SCSs' impact on local planning decisions to date are minor, echoing other studies.<sup>61</sup> But interviewees did cite the importance of MPOs' RHNA allocations. One recent study documented how the Bay Area successfully increased affordable housing in jobs-rich locations following a change to its RHNA.<sup>62</sup>

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*"As a developer, I know first-hand that there are too few of my colleagues who are doing their projects in a sustainable way. They are simply trying to get good infill projects approved and financed and trying not to get sued under CEQA. They're not asking MPOs for anything. They're asking the cities who control land use decisions. If the State helped cities update their plans to be in alignment with the SCS, then elected officials could say to builders, 'this is what we're requiring.' The builder might check with the next town, but if the next town said that also, then you'd see a serious change in development in the state. But you need critical mass among cities to see real sustainable design from most developers."*

*- Curt Johansen  
Board of Directors President  
Council of Infill Builders*

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Local agencies cite the cost of planning and infrastructure as key challenges. While updating general plans and creating specific plans for areas such as near transit can make the development process more efficient, such work can cost millions of dollars, which local agencies often do not have. These plans can then be difficult to implement,

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<sup>61</sup> In a 2017 survey, a majority of county and city planning managers report that SB 375 had little to no influence on their adoption of the eight smart growth zoning strategies studied. But it also found that local government participation in developing an SCS and local understanding of the SCS "appear to increase the likelihood of smart growth oriented zoning" in those jurisdictions. See: Sciara, G.C. & Strand, S. August 2017. *When Do Local Governments Regulate Land Use to Serve Regional Goals?: Results of a Survey Tracking Land Use Changes that Support Sustainable Mobility*. National Center for Sustainable Transportation and UC Davis Institute of Transportation Studies. Retrieved from [https://ncst.ucdavis.edu/wp-content/uploads/2015/10/NCST-TO-025-Sciara-Tracking-Land-Use-Changes\\_FINAL-August-2017-1.pdf](https://ncst.ucdavis.edu/wp-content/uploads/2015/10/NCST-TO-025-Sciara-Tracking-Land-Use-Changes_FINAL-August-2017-1.pdf)

<sup>62</sup> When the Bay Area shifted its approach to allocating more growth to jobs-rich areas, local jobs-housing balance improved by 104 percent, affordable housing outpaced market-rate housing in jobs-rich places, and more affordable housing was built in jobs-rich areas there than in San Diego or LA. The Bay Area has also adopted several ambitious strategies that likely helped yield this result. See: Palm, M. & Niemeier, D. 2017. Achieving Regional Housing Planning Objectives: Directing Affordable Housing to Jobs-Rich Neighborhoods in the San Francisco Bay Area. *Journal of the American Planning Association*, 83:4, 377-388, DOI: 10.1080/01944363.2017.1368410

in part due to a lack of funding for civic infrastructure, especially since the costs of infill development are often higher than the costs of greenfield development.

The State does provide some planning and infrastructure funds:

- SB 1 increased funding available via Caltrans' Sustainable Transportation Planning Grant program. On top of the approximately \$9.5 million already available annually, approximately \$25 million was added to support and implement SCSs and achieve the State's greenhouse gas reduction targets.

- SB 2 provides a permanent source of funding intended to increase the affordable housing stock in California. In the first year (2019), 50 percent of the revenue will be used to establish a program that provides financial and technical assistance to local governments to update planning documents and zoning ordinances in order to streamline housing production, including, but not limited to, general plans; community plans; specific plans; implementation of SCSs; and local coastal programs.

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*"Climate change, California's housing crisis, and our growing infrastructure deficit are interconnected. We must invest our limited resources in integrated strategies that address these challenges together. We can grow in ways that advance economic development, improve public health, reduce climate emissions, and contribute to the vibrancy and equity of our diverse communities. Integrated solutions—like supporting growth in walkable, transit-served areas—should be at the core of our state's strategy moving forward."*

*- Kate Meis*

*Executive Director*

*Local Government Commission*

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- Cap-and-trade dollars through the California's Climate Investment (CCI) Program provides funding primarily for community infrastructure and affordable housing largely via Strategic Growth Council administered programs including the Affordable Housing and Sustainable Communities (AHSC), Transformative Climate Communities (TCC) and the Sustainable Agricultural Land Conservation (SALC).

Views shared during interviews identified that the process of applying for some funds can be cumbersome and expensive, with uncertain benefits. Twenty-five to 35 percent

of local jurisdictions surveyed in 2017 were not aware of key State funding programs.<sup>63</sup> The California State Library is now working to develop a clearinghouse of state funding programs that can help address this information gap pursuant to Assembly Bill 2252.<sup>64</sup>

Some MPOs report that one State decision, the elimination of redevelopment agencies in 2012, continues to have a major impact. Redevelopment agencies facilitated tax-increment financing for new development and also allowed cities to assemble parcels and fund infrastructure. One-fifth of their financing was required to subsidize affordable housing. While legislation has restored certain powers of redevelopment, agencies reported continued implementation challenges.

In 2017, the Legislature passed and Governor Brown signed a package of 15 housing bills designed to address the housing shortage and affordability crisis. In particular, interviewed stakeholders highlighted SB 35<sup>65</sup>, which requires certain localities to offer developers a new ministerial approval process for developments that meet certain requirements. It is too soon to know what net effect these new tools will have on the backlog of affordable housing need. But given the magnitude of current housing shortfalls and the limitations of streamlining policies, such as requirements that raise construction costs beyond what some markets may support, more tools that directly address California's biggest housing challenges will almost certainly be needed.

Interviewees also told CARB that SB 743<sup>66</sup> may ease one barrier to transit-oriented and infill development and push development in high-VMT areas to reduce its VMT with mitigation measures. It will change CEQA analysis of transportation impacts to better align with the goals of SB 375, removing measures of auto delay such as "level of service" to determine significant environmental impacts, and replacing them with analysis of VMT.

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<sup>63</sup> Sciara, G.C. & Strand, S., 2017.

<sup>64</sup> AB 2252 (Limón, Chapter 318, Statutes of 2018).

<sup>65</sup> SB 35 (Wiener, Chapter 366, Statutes of 2017).

<sup>66</sup> SB 743 (Steinberg, Chapter 386, Statutes of 2013).

## HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?

Some regions have developed effective approaches to influence local policymaking, and to help fund planning, community infrastructure, and affordable housing. These include the following best practices, which are detailed more in Appendix C:

- Building regional consensus on key topics, such as where growth should and should not go, or on new policy tools to address the affordable housing crisis.
- Allocating certain transportation funds in ways that support or incentivize key efforts via competitive grants that reward performance, eligibility requirements, and directly funding or establishing a revolving loan fund for key activities.

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*"I think MPOs, with help from ARB and CTC, could encourage cities to do the right thing by providing them funding. And I think we have done that in the past, and it works. I think many cities, if you incentivize them, will be willing to do the right thing."*

*- Hasan Ikhata*

*Outgoing Executive Director*

*Southern California Association of Governments*

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- Assisting local agencies in utilizing SB 375's CEQA streamlining provisions.
- Creating regional structures for funding land conservation and restoration.
- Educating local jurisdictions about the health, economic, equity, and conservation benefits of RTP scenarios and particular growth strategies.
- Forecasting and tracking displacement risk.

## OPPORTUNITIES AND NEXT STEPS

To address the critical housing shortage additional effort is needed to improve regulatory, incentive, and other legal mechanisms for projects that provide more affordable housing choices near jobs, transit, and other high-opportunity locations. Some next steps to consider in this area include:

- Assessing what additional support could be offered at the regional and local levels to jumpstart development in areas where development has been identified

as supporting the State’s planning priorities and SCS goals (e.g., support for local planning, development of local decision-support tools, funding for enabling infrastructure, financing mechanisms for transit-oriented and transit-ready development, etc.).

- Building upon work that CARB and the Governor’s Office of Planning and Research (OPR) began this year (2018) to provide guidance and evidence that developers and local jurisdictions can use to show how well-designed, transportation-efficient, and affordable projects comply with CEQA and State greenhouse gas emissions reduction goals for housing development in California.
- Developing and maintaining a catalogue tracking current State regulations and incentives impacting the growth decisions of local agencies and builders, with particular attention to how they relate to providing strategic growth and affordable homes and preventing displacement.

## Under-Served Communities

**ISSUE:** Regional SCS planning offers an opportunity to redress a range of important issues of social and transportation justice, rural mobility, public health, and quality of life for people of all incomes. State bodies can improve their ability to monitor and promote regional equity across the issues that an RTP/SCS addresses.

**OPPORTUNITY AREA:** Develop a state vision for increasing travel choices, economic development and access to jobs and other opportunities, as well as affordable housing for under-served communities – and by doing so, accelerate progress on state climate, infill, health, and equity benefits.

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### KEY CHALLENGES

SB 375, as a law, focuses on the reduction of greenhouse gas emissions. Many SCS plans forecast that their implementation will also promote public health and more livable communities, improve access to opportunity, and reduce households' housing and/or transportation costs.

However, this report found that positive change is occurring slowly in greenhouse gas emission reductions and other areas. Meanwhile, concerns about the cost of housing and transportation rise, and the gap between income groups continues to grow rapidly. Without efforts to monitor and improve implementation, regions may not succeed at meeting these important goals. As outlined above, data gaps often existed for these issues.

Questions of regional equity are particularly important given the unresolved history of racism, discrimination, and segregation in land use and transportation policy. Fifty years after redlining became illegal, its impacts can still be seen in neighborhood demographics and wealth disparities.<sup>67</sup> Highway construction, “slum clearance,” and white flight resulting from federal laws from the 1950s and beyond have contributed to the regional land use patterns and fiscal inequalities that exist today. Alarm bells have been raised about the “suburbanization of poverty,”<sup>68</sup> as some evidence shows there

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<sup>67</sup> National Community Reinvestment Coalition. March 2018. “HOLC ‘Redlining’ Maps: The Persistent Structure of Segregation and Economic Inequality.” <https://ncrc.org/holc/>

<sup>68</sup> Urban Habitat. November 2016. “Race, Inequality, and the Resegregation of the Bay Area.” <https://urbanhabitat.org/sites/default/files/UH%20Policy%20Brief2016.pdf> Link to Urban Habitat report here

has been a significant increase nationally in poverty in suburban areas and that, as of 2015, more there were more poor residents living in suburbs than in cities.<sup>69</sup>

The disparities between communities in California remain vast. One study by the Joint Center for Political and Economic Studies and Fresno State’s Central Valley Health Policy Institute found that life expectancy in the San Joaquin Valley varies by zip code by 21 years, with the rate of premature death in some zip codes nearly double that of others.<sup>70</sup> Rural communities

throughout the state continue to lack access to transportation options, healthy drinking water, sewer and other civic infrastructure, even as infrastructure services are extended elsewhere.

SB 375 regional SCS development and implementation can affect equity in a number of ways. Below, CARB poses questions about how and whether various features of transportation and housing planning might affect equity.

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*"A lot of these programs tend to have urban centers in mind when they're created, not the needs of rural areas where walking, biking, and transit are not very realistic. Greenhouse gas reductions cannot come at the expense of disadvantaged rural communities losing options and mobility."*

*- Mariah Thompson  
Staff Attorney, Community Equity Initiative  
California Rural Legal Assistance, Inc.*

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- Transportation projects: Are transportation project investments in the RTP/SCSs harming vulnerable communities, as the highway expansions of the 1950s did? Do they reflect an equitable distribution of benefits to under-served communities? Are the identified projects for low-income and under-served areas ones that community residents have identified as helpful in meeting their needs?
- Neighborhood improvements: As localities engage in SB 375 supportive place-making and revitalization efforts, are these efforts benefiting low-income communities and communities of color? How does a focus on urban strategies such as infill, pedestrian, and transit-oriented development affect low-income rural communities? Are residents being given meaningful opportunities to engage in decision making around the future of their communities?

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<sup>69</sup> "The Changing Geography of US Poverty, Elizabeth Kneebone, Senior Fellow at Brookings Institution, congressional testimony, Feb. 15, 2017 <https://www.brookings.edu/testimonies/the-changing-geography-of-us-poverty/>.

<sup>70</sup> Joint Center for Political and Economic Studies; Fresno State’s Central Valley Health Policy Institute. 2012. *Place Matters for Health in the San Joaquin Valley: Ensuring Opportunities for Good Health for All*. Retrieved from <https://jointcenter.org/sites/default/files/PM%20English.pdf>.

- Secure, affordable housing: Is market-rate and affordable housing being planned and built in neighborhoods with access to opportunities like jobs, high-quality education, and transportation? As investments improve existing communities, are current residents able to benefit, or do rising rents push them out?
- Air quality: As transportation investments shift travel patterns and hopefully reduce VMT, will air quality improve or worsen in the communities that are already most burdened by pollution?

Recent legislation has improved the State’s ability to engage in these issues to improve regional equity. In 2018, legislation amended both the RHNA and housing element requirements. Assembly Bill 686<sup>71</sup> requires public agencies to administer programs and activities related to housing and community development in a manner to affirmatively further fair housing, and to not take any action that is inconsistent with this obligation., and Assembly Bill 1771<sup>72</sup> amended the methodology for RHNA to give greater consideration to equity factors and how distribution may affect the opportunity for low- and very-low income households.

## HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?

Many MPOs have conducted environmental justice and social equity analyses in their SCSs. Under federal regulation and State laws, regions must analyze, plan, and implement transportation system improvements that will provide a fair share of benefits to all residents, regardless of race, ethnicity or income level. The 2017 RTP Guidelines for MPOs<sup>73</sup> update by the CTC include Title VI Rights Act and other environmental justice considerations in RTP/SCS development.

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*"All Californians deserve cleaner air and shorter commutes. As we plan for climate resilience and sustainability we need to ensure clean air and better transportation alternatives in communities most affected by climate change. For California to strengthen its climate leadership, we must keep the needs of low-income communities at the center of our work."*

- Senator Ricardo Lara (D-33)  
California Senate

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<sup>71</sup> AB 686 (Santiago, Chapter 958, Statutes of 2018).

<sup>72</sup> AB 1771 (Bloom, Chapter 989, Statutes of 2018).

<sup>73</sup> [http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index\\_files/2017FINALDraft\\_MPORTPGuidelines.pdf](http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/index_files/2017FINALDraft_MPORTPGuidelines.pdf).



Furthermore, the statutory goals of the Regional Housing Needs Allocation (RHNA) process were amended in 2018 to require every jurisdiction to “promote housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, familial status, or disability.”<sup>74</sup>

Best practices in this area thread throughout the sections above and provide a foundation upon which to build. They seek to ensure that transportation investments improve public health, engage under-served communities in identifying projects to meet their unique transportation needs and then funding them, promote affordable housing and tenant-protection policies, improve air quality and access to services, and meet the needs of rural residents. SANDAG has recently been leading a process to develop a Social Equity Analysis Methodology and Tool (SEAM / SEAT) including a standard set of performance measures that other MPOs can use. See Appendix C for more detail.

## **OPPORTUNITIES AND NEXT STEPS**

Currently, each region addresses these issues differently and in varying depth. In order to increase travel choices, economic development, access to jobs and other opportunities, affordable housing for under-served communities, and to reverse historic and systemic injustices, including health inequities that result in significant health disparities between populations,<sup>75,76</sup> development of a State vision and strategy for advancing equity through State transportation, housing, and climate and air quality outreach, planning, and funding activities is needed.

Development of a state equity strategy for the areas identified above should balance state planning priorities for growth<sup>77</sup> and public health considerations, incorporate considerations from a review of best practices and cutting-edge efforts nationwide, as well as the input of communities directly. The strategy should outline ways to monitor

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<sup>74</sup> AB 1397 (Low, Chapter 375, Statutes of 2018)

<sup>75</sup> Life expectancy in the San Joaquin Valley varies by zip code by 21 years. See: Joint Center for Political and Economic Studies; Fresno State’s Central Valley Health Policy Institute. 2012.

<sup>76</sup> “Health equity” is defined as efforts to ensure that all people have full and equal access to opportunities that enable them to lead healthy lives. “Health disparities” are the differences in health and mental health status among distinct segments of the population, including differences that occur by gender, age, race or ethnicity, sexual orientation, gender identity, education or income, disability or functional impairment, or geographic location, or the combination of any of these factors. “Health inequities” are defined as disparities in health or mental health, or the factors that shape health, that are systemic and avoidable and, therefore, considered unjust or unfair. Source: *Portrait of Promise: The California Statewide Plan to Promote Health and Mental Health Equity. A Report to the Legislature and the People of California by the Office of Health Equity*. Sacramento, CA: California Department of Public Health, Office of Health Equity; August 2015. Retrieved from [http://www.ochealthierthogether.org/content/sites/ochca/CDPH\\_Portrait\\_of\\_Promise\\_Aug\\_2015.pdf](http://www.ochealthierthogether.org/content/sites/ochca/CDPH_Portrait_of_Promise_Aug_2015.pdf).

<sup>77</sup> AB 857 (Wiggins, Chapter 1016, Statutes of 2002).

progress and advance state climate goals, as well as identify where development of local decision-support tools would be useful. Finally, special attention should be paid to strategies that help prevent the displacement of low-income communities and communities of color.

As a next step for productive collaboration on this topic, CTC and CARB – along with other State agencies such as CalSTA, Caltrans, OPR, SGC, and HCD – should continue to work together in collaboration with regional and local partners to inform and initiate appropriate actions related to their respective outreach, planning and funding activities by:

- Initiating development of best practice evaluation method/s, regular tracking, and statewide reporting mechanisms to monitor and inform planning on how transportation, housing and climate-incentive investments are expected to affect low-income residents' access to clean transportation and health in the most burdened places. As a starting point, begin developing best practices that agencies can use to assess community transportation needs based directly on community input and agreement on how to have these priorities rise to the top of near-term investment plans and transportation grant-making.

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*"When residents can envision a real opportunity to affect outcomes in the near term, in the form of investments or policies that address their priorities, they are much more likely to make time to engage, and in doing so bring forward solutions that benefit everyone."*

*- Richard Marcantonio  
Managing Attorney  
Public Advocates Inc.*

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- Building on and continue to actively pursue existing State efforts to promote low-income communities' access to clean transportation and mobility options (SB 350) and to reduce exposure to air pollution in disproportionately-burdened communities (AB 617) and further integrate them with work on SB 375.
- Initiating research that assesses the costs and benefits of different SCS-type growth and transportation strategies on low-income residents for future potential use in program implementation and reporting. For example, comparing multi-family or compact infill development with supportive transit, walk/bike, and road repair investments (in urban and rural settings), to single-family urban expansion with supportive highway and road-capacity investments.

- Working with the California Workforce Development Board to identify appropriate connections with their forthcoming work pursuant to AB 398,<sup>78</sup> to identify the need for increased education, career technical education, job training, and workforce development resources or capacity to help industry, workers, and communities transition to economic and labor-market changes related to state greenhouse gas emissions reduction goals.

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<sup>78</sup> AB 398 (Garcia, Chapter 135, Statutes of 2017).

## Traveler Incentives

**ISSUE:** Many efforts are underway to improve transportation networks and land use patterns, but some of these will take years to show results. In the near term, valuable gains could result from a focus on the traveler experience and providing incentives for consumers to walk, cycle, take public transit, or carpool now.

**OPPORTUNITY AREA:** Pilot test innovative ideas to speed the adoption of clean, efficient transportation solutions across the State (e.g., new traveler-oriented approaches to encourage behavior change, options for increasing funding to enhance transit operations for providers willing to support transit integration, contests between regions or transit providers).

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### KEY CHALLENGES

The data presented in this report show that in general, consumers are not changing their travel choices away from driving alone and toward walking, cycling, public transit, carpooling, and other options. Alongside long-term efforts to build infrastructure that makes alternatives to driving more accessible, reliable, safe, and convenient to navigate, a focus on what it will take to encourage more people to try these alternatives could accelerate progress toward State climate goals.

A number of simple and relatively low-cost solutions could improve non-auto travelers' experience. For instance, dedicated bike lanes and easy-to-access secure cycle parking can make cycling more safe and convenient. Transit stops could include weather shelters and amenities like water-filling stations. Clearly-marked pedestrian crosswalks can have count-down signals and mid-span safety features.

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*"There is not enough sense of urgency now, because 2035 feels so far away. We need to be asking – what strategies will deliver impacts in the next five years? How can we change travel behavior in the very near term?"*

*- Amanda Eaken  
Director, Transportation & Climate  
Natural Resources Defense Council*

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General consumer education, incentives, and offering support for those who would like to try alternatives to driving are areas ripe for innovation and learning from successful examples in other sectors. For instance, just as water and electricity districts have taken creative approaches to managing tight supply, such as providing small rebates for

the purchase of a water-efficient appliances or providing educational material on billing, transportation agencies could try new approaches to managing limited road capacity.

Transportation agencies could also learn from private-sector marketing, where new product promotions involve efforts like sales, free samples, peer-referral rewards, loyalty benefits, and more. Transportation solutions might explore deploying strategies developed following the mobile revolution for rewarding consumers, gamifying daily life, and exerting positive peer pressure. Smartphones could allow consumers to opt in to receive alerts and small rewards. Transportation investments might be used to subsidize commuter bike purchases, provide thank-you points to commuters who shift to transit or to consistently travel at off-peak periods, and offer other forms of social and material encouragement.

### ***HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?***

MPOs have demonstrated success in testing new approaches for encouraging consumers to try alternative modes. Some of the best practices undertaken by various individual regions, all of which are described in further detail in Appendix C, include:

- Providing grants and toolbox resources to local agencies and individuals to encourage use of innovative transportation demand management strategies, such as Guaranteed Ride Home programs, parking management, new technology, and marketing.
- Partnering with TNC companies to provide free carpool ride experiences.
- Aligning transit services around a single payment system, thereby easing travel and facilitating employer subsidies and other incentive programs.
- Partnering with builders to provide car-share and other alternative travel choices especially at affordable housing developments.

### ***OPPORTUNITIES AND NEXT STEPS***

CARB heard from a number of MPOs and other stakeholders that much more remains to be done in this area, with needs in the near-term for additional pilot-testing to advance policy. Providing funding for regions and localities to explore and quantify the benefits of targeted consumer-based VMT-reduction incentives and provide education to local residents could accelerate progress in this area. In addition, increasing transit operations funding, the lack of which was repeatedly highlighted as a limiting factor, could also be valuable.

## Transportation Pricing

**ISSUE:** As cars become more fuel-efficient and the use of zero emission vehicles increase, California’s fuel-based transportation system will receive declining revenues, with costs falling more heavily on lower-income drivers who own older vehicles. Adjusting price signals in ways that make it cheaper to travel via carpool, public transit, and active transportation than to drive alone can provide a powerful incentive to shift travel patterns, reduce congestion, and more equitably and sustainably fund the transportation system as a whole.

**OPPORTUNITY AREA:** Develop fiscally-sustainable and equitable methods of funding the transportation system, in ways that increase climate-friendly travel choices for everyone and incentivize shifts in travel behavior by building upon the findings of the California Road Charge Pilot Program, enabling further pilot-testing of alternatives to the gas tax, and examining other fee structures that touch on the broad set of costs people incur to access the transportation system (e.g., lower-cost transit passes, parking, per-mile car insurance, and TNC pricing that encourages pooling).

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### KEY CHALLENGES

Traditionally, California has funded the construction and maintenance of its extensive system of highways, local roadways, and bridges in large part through taxes on the fuel that drivers purchase to use this infrastructure, also known as a gas tax. Until the passage of SB 1, the gas tax had not been updated for inflation since 1994.<sup>79</sup> SB 1 made valuable strides toward more sustainable funding for road and bridge repair by adjusting the fuel tax for past inflation, returning it to its historic levels, and tying it to inflation going forward.

However, as part of California’s work to address climate change, the State has required automobiles to become more fuel-efficient and required an increasing number of zero emission vehicles (ZEVs) in California. The *2030 Scoping Plan Update* also sets a goal of having 1.5 million ZEVs on the road by 2025 and 4.2 million ZEVs by 2030. Because ZEVs and fuel-efficient vehicles require less gasoline fuel, per-capita revenues will decline over time, threatening the State with future shortfalls for road and bridge maintenance and other important transportation investments.

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<sup>79</sup> CalSTA and Caltrans. 2017. *California Road Charge Pilot Program 2017 Highlights*. Retrieved from [http://www.dot.ca.gov/road\\_charge/resources/final-report/docs/highlights.pdf](http://www.dot.ca.gov/road_charge/resources/final-report/docs/highlights.pdf).

The funding system may also grow less equitable. As more affluent residents buy newer, more fuel-efficient vehicles, the costs of funding the transportation system could fall more heavily on low-income residents, compared to a system in which drivers pay in proportion to their use of the roadways.

Recognizing these challenges, the Legislature passed SB 1077<sup>80</sup> directing the CalSTA, with support from the CTC, to conduct a road-usage charge pilot study, exploring a road-usage charge in which users pay per mile that they drive, instead of per gallon of fuel used. This pilot study was a clear success, with 81 percent of participants feeling that a road-usage charge should continue to be researched.<sup>81</sup>

Alternative pricing techniques can also be an important tool for cities or regions seeking to address congestion. When too many cars get on the roadway, traffic comes to a standstill and all drivers suffer. Even a small charge can cause a traveler to think twice about whether they need to drive, or if they could walk, cycle, take transit, or wait until after rush hour to travel, which can have a substantial impact on reducing congestion. Instituting a price for using certain lanes, driving into certain areas, parking in prime locations, or driving at peak times, can make scarce road resources available for those who have little option but to drive, and can generate resources to fund an array of other options for those who could use them.

In particular, some larger California cities have begun to discuss the possibility of seeking to improve traffic flow in key zones in their downtown by vastly increasing the alternatives for traveling to and from those areas, and funding those via a toll on automobiles entering or leaving the zone. Cordons have been successfully used in London and Stockholm in conjunction with efforts to provide an array of alternatives.<sup>82</sup> These might include increased bus service, vanpools, bike- and scooter-share, as well as expanded sidewalks and cycling lanes. By keeping buses and drivers alike from having to sit in traffic, such an approach could make travel faster and easier for everyone. In California, legislation would be needed to allow local agencies to use this approach on their streets and roads.

Other pricing tools can also provide a financial incentive to support people who would like to travel in more sustainable ways, thereby also helping to reduce congestion for

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<sup>80</sup> SB 1077 (de Saulnier, Chapter 835, Statutes of 2014).

<sup>81</sup> CalSTA and Caltrans. 2017. *California Road Charge Pilot Program 2017 Final Report*. Retrieved from [http://www.dot.ca.gov/road\\_charge/resources/final-report/docs/final.pdf](http://www.dot.ca.gov/road_charge/resources/final-report/docs/final.pdf).

<sup>82</sup> For case studies on London and Stockholm's efforts, including their economic and health benefits, please see: San Francisco County Transportation Authority. December 2010. *San Francisco: Mobility, Access, and Pricing Study*. Retrieved from [https://www.sfcta.org/sites/default/files/content/Planning/CongestionPricingFeasibilityStudy/PDFs/MAPS\\_study\\_final\\_lo\\_res.pdf](https://www.sfcta.org/sites/default/files/content/Planning/CongestionPricingFeasibilityStudy/PDFs/MAPS_study_final_lo_res.pdf).

those who need to drive. For example, reducing the cost of transit via transit passes provided or partially subsidized by property management companies, universities, and employers makes it cheaper for residents and employees to travel by bus or light rail. Cities and employers can institute parking charges in high-demand areas and/or provide lower cost or reserved parking spaces for carpools. Educating the public about the availability of per-mile car insurance pricing options can reduce costs on those who drive less. Finally, TNCs that utilize ridehailing services can continue or expand the use of surge pricing and lower costs for pooled service, and to encourage travel at times when the roads are less congested.

A key challenge is the need to structure any pricing efforts to avoid hurting low-income residents, many of whom work traditional shifts and are unable to telecommute or change their hours. Strategies can include low-income waiver programs, structuring any charges to fall at times and places when users are more likely to be moderate- and upper-income, and prioritizing low-income communities in the use of funds. The policies discussed in the “Growth and the Housing Crisis” section to ensure that affordable housing is built, and that low-income renters are protected, in locations convenient to transit and other transportation choices will also be important to avoid per-mile road charges from falling most heavily on them.

## HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?

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*"In the long-term, California cannot rely primarily on the gas tax to fund the maintenance and operations of our vital transportation system, which directly impacts the overall quality of life for Californians."*

*- California Road Charge Pilot Program  
Final Report*

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While further progress on pricing strategies would require State action, many MPOs around the State have demonstrated success in testing new approaches for funding travel choices. Five regions report that they have already adopted or are beginning to consider pricing techniques, including some rural regions with heavy tourist traffic or heavy traffic passing through their region. Some leading practices, outlined further in Appendix C, include:

- Implementing congestion-based bridge tolls that vary the cost of the toll based on whether or not the driving occurs during peak commute hours.
- Creating networks of Express Lanes that are free to transit, carpools, vanpools, and motorcycles and that are available to single-occupant vehicles for a toll.



- Educating the public about the high costs of traffic congestion and the possibility of creating mobility zones via congestion pricing.
- Evaluating means-based pricing strategies for public transit.

## *OPPORTUNITIES AND NEXT STEPS*

A variety of options exist for promoting alternative funding techniques, including:

- Building upon the findings identified in the Road Charge Pilot Program carried out by the California State Transportation Agency, the California Transportation Commission, and Caltrans. Next steps that were identified include further exploring technology and revenue-collection methods, as well as developing a phasing strategy and gathering public input.
- Authorizing design and implementation of further pilot projects that test the potential of alternatives to the gas tax for financing the transportation system (i.e., variable rate tolls, cordon tolling, distance charging) in conjunction with funding a suite of public transit, active transportation, carpooling, and other travel choices.
- Promoting the use of other strategies such as lower-cost transit passes, parking pricing, per-mile car insurance pricing options, and pricing structures for TNCs that encourage carpooling and traveling at lower-demand times.
- Identifying best practices for promoting benefits and minimizing negative impacts to low-income and disadvantaged communities of different pricing strategies. To the extent possible, seek community input and engage with communities in developing pricing strategies.

## New Mobility

**ISSUE:** New technologies facilitated by the mobile revolution—such as car-sharing, bike-sharing, TNCs that utilize ridehailing services, and eventually fully-automated vehicles (AV)—offer the opportunity to transform our transportation system in ways that boost mobility and help meet State climate goals. But without additional State policy, they also risk increasing VMT and leaving low-income people behind.

**OPPORTUNITY AREA:** Convene a transportation system think tank to provide insight into the demands on the future transportation system and then identify the transformative technologies, solutions, partnerships, and critical steps to meet those demands, in a way that provides clear environmental benefits and fosters greater livability, access to destinations, and compact infill development rather than accelerating sprawl.

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### KEY CHALLENGES

The rise of new mobility solutions is rapidly transforming how people use transportation systems. Car-sharing, bike- and scooter-sharing, and TNCs that utilize ridehailing services may all play a critical role in a transition to a more low-carbon transportation system. They are already providing new options for some riders that need them and may also be slowing growth in auto ownership.

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*"The future has never been more uncertain, and we want to embrace that. We are funding experiments with microtransit, mobile apps, and more. Here in the "front yard" of the state capitol, we want to be a testbed and advance innovative pilot projects. We are ready to try new things, see what works and what fails, and grow the successful pilots into full-blown projects."*

*- James Corless*

*Chief Executive Officer  
Sacramento Area Council of Governments*

In particular, TNCs and other on-demand transportation providers offer great promise that is still largely untapped. Optimizing the linkages between ridesharing, ridehailing, and transit services could reduce VMT by offering better travel choices to those without cars or who do not drive, address first mile / last mile concerns for public transit, as well as helping to facilitate pooling.

However, TNC's and other on-demand transportation providers may also be putting former transit riders and cyclists back into automobiles and increasing

congestion on city streets. There is evidence that TNC trips are replacing walk and bike

trips to a lesser extent. One study found that 49 to 60 percent of TNC trips would have not been made or would have otherwise been made on foot, by bike, or by public transit.<sup>83</sup> Unfortunately, this may already be having an impact on VMT. Carefully crafted policy will be needed to ensure TNCs help, rather than undermine, state goals for climate, health, and environment, particularly in light of the coming arrival of automated vehicles, with which they could play a pivotal and helpful role.

Fully-automated vehicles may be the next step. While fully automated vehicles are not yet deployed in California, numerous interviewees emphasized the need for State and regional planning and policy work on this issue. If AVs are part of a shared fleet, sized appropriately, fueled via low-carbon electricity, used to facilitate pooling, and priced appropriately and in a manner that act to achieve the preceding objectives, they could simultaneously provide better access to destinations, and reduce driving and air pollution. However, academic research using various approaches are converging on the finding that, deployed without the appropriate policy framework ahead of their arrival, AVs are likely to significantly increase driving—particularly if they are personally owned.<sup>84</sup>

California's four largest MPOs have launched a Future Mobility Research Program (FMRP) to collaboratively study the transportation and social equity impacts of innovative technologies, including ride-hailing, and to begin developing policy frameworks.<sup>85</sup> But because TNCs' data is proprietary and AVs have not yet been deployed, to begin educating policymakers on the potential impacts and about possible policy responses is difficult. Another central challenge is that many of the tools for managing travel patterns of these services are under local control or include multiple jurisdictions. Policy development will be needed at all levels of government, including local, regional, and state. For example, local governments can change curb-use regulations to encourage pickups in certain locations and discourage them in others.

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<sup>83</sup> Clewlow, R. & Mishra, G. 2017. *Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States*. Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-RR-17-07. Retrieved from [https://itspubs.ucdavis.edu/wp-content/themes/ucdavis/pubs/download\\_pdf.php?id=2752](https://itspubs.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=2752).

<sup>84</sup> See: (1) Rodier, Caroline. April 2018. "Travel Effects and Associated Greenhouse Gas Emissions of Automated Vehicles." National Center for Sustainable Transportation; University of California, Davis, Institute of Transportation Studies. (2) Harb, M., Xiao, Y., Circella, G., Mokhtarian, P., & Walker, J. January 2018 (draft November 2017). *Projecting Travelers into a World of Self-Driving Vehicles: Estimating Travel Behavior Implications via a Naturalistic Experiment*. Presented at the Transportation Research Board 97th Annual Meeting (January 2018).

<sup>85</sup> See: MTC Planning Committee Memo dated 10/27/17. Retrieved from [https://mtc.ca.gov/sites/default/files/5a\\_Future%20Mobility%20Research%20Program%20%E2%80%93%20Update.pdf](https://mtc.ca.gov/sites/default/files/5a_Future%20Mobility%20Research%20Program%20%E2%80%93%20Update.pdf).

MPOs and other transportation agencies can provide educational materials or grants or fund deployment of new approaches to public transit to assist with this work.

### *HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?*

Given the wide range of possible futures, early action to shape the market and development of these new technologies is important. Many of the largest regions are demonstrating leadership in implementing practices intended to help address new mobility issues, which are described in further detail in Appendix C. Efforts that some regions have adopted include:

- Funding pilot testing of new mobility strategies to support traditional public transit and transportation demand management strategies.
- Designing mobility hubs near transit and other key locations that bring together transit, active transportation, technology, car- and bike-share locations, and other first- and last-mile connections.

### *OPPORTUNITIES AND NEXT STEPS*

CARB heard from a number of MPOs and other stakeholders that much more remains to be done, with the largest challenge being a lack of data and authority or jurisdiction over new service providers and land use allocation. As a next step on this topic, CARB should work together with the CPUC and other State, regional, and local agencies to advance research and policy-making in this area. A task force should be convened that can identify the demands of the future transportation system (e.g., further system electrification; new mobility options and technologies, such as ride-hailing and automated vehicles) and then outline the technologies, solutions, partnerships, and next steps for meeting those demands in a way that aligns with our greenhouse gas emissions reduction goals, provides clear environmental benefits, and fosters greater livability, access to destinations, and compact infill development rather than sprawl. Some efforts to build on include:

- SB 1014<sup>86</sup> directs CARB, the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) to foster the use of cleaner cars and more carpooling in ride-hailing trips and directs CARB to set goals for reducing the greenhouse gas emissions per passenger-mile traveled, including targets for the use of ZEVs.

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<sup>86</sup> SB 1014 (Skinner, Chapter 369, Statutes of 2018).

- CARB also began work this year (2018) to assess possible regulatory approaches to ensure greater inclusion of ZEVs in public and private light- and heavy-duty vehicle fleets, including emerging new mobility services such as ridehailing fleets with emphasis on pooling and connections to transit.
- The State has also initiated a State Multi-agency Workgroup on Automated Vehicles to address deployment of connected and automated vehicles in California.

## Data and Research Needs

**ISSUE:** Many gaps in data and research inhibit State, regional, and local agencies from monitoring their progress in advancing public health, equity, accessibility, and sustainability. Going forward, to address the State's goals more holistically, the State is going to need more and different types of data than what has historically been tracked.

**OPPORTUNITY AREA:** Develop a research and monitoring plan to fill data gaps and allow more comprehensive tracking of progress in each of the efforts identified in this report.

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### **KEY CHALLENGES**

This report set out to measure the strategies that are being utilized throughout California to advance health, equity, accessibility, and sustainability. Staff identified a number of gaps where the report would not be able to do so, due to limitations in the available data or the need for research to better define the issue and establish a monitoring method. These data gaps are outlined on pages 37, 48, and 55. They include important questions such as:

#### **Transportation:**

- Does current transportation spending match the investments outlined in long-term plans?
- Are investments that benefit health, equity, and sustainability being accelerated or deferred?
- Are investments benefiting under-served groups?
- Is auto-related pollution declining in overburdened communities?
- How much is active transportation infrastructure improving?
- How are TNCs impacting travel behavior?
- How are people traveling for non-work trips, such as for errands and recreation?

#### **Housing:**

- What is the jobs-housing fit: the balance between low-wage jobs and low-cost housing?
- To what degree is housing unaffordability increasing miles driven?
- How extensive is the displacement problem and what have its impacts been, and where are local jurisdictions working to address it? What local policies are most effective in minimizing displacement?

### **Efficient Land Use:**

- Are homes and jobs being built near transit?
- Are daily needs near where people are living, and who is able to live in these convenient neighborhoods?
- Are jurisdictions' plans better addressing environmental justice (e.g., as a result of SB 1000)?

These are important questions to address. Identifying research, data collection, and data sharing methods to provide this information could greatly expand planning practice in California.

### ***HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?***

This report focused on regions' efforts to create and implement their SCSs under SB 375, and did not survey MPOs about their techniques to expand data collection. However, Appendix C does include several highlights that can inform state efforts to address data gaps, such as different regions' efforts to:

- Creating web portals with up-to-date tracking metrics on key regional goals.
- Collecting data from local agencies through a local-input survey.
- Sharing data on vehicle miles driven directly with localities and making funds available to those local jurisdictions whose progress is falling behind.
- Leading multi-MPO efforts to assess equity impacts in a consistent way.

### ***OPPORTUNITIES AND NEXT STEPS***

A number of State agencies, including CARB, Caltrans, and SGC have funds that are available for research. These agencies could work together to develop a research and monitoring plan to fill data gaps and allow more comprehensive tracking of progress in each of the efforts identified in this report.

## Limitations of SB 375

**ISSUE:** The current law connecting regional planning to State climate goals, SB 375, has greatly expanded the regional planning conversation. While amending SB 375 alone will not solve the challenges outlined in this report, doing so can strengthen and make greater use of efforts underway in this area.

**OPPORTUNITY AREA:** Develop recommendations to update SB 375 that better connect State goals with regional and local planning and implementation.

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### **KEY CHALLENGES**

Since its passage in 2008, SB 375 has led MPOs to expand the regional planning conversation beyond transportation. Regions must identify a forecasted growth pattern for the region after considering the best available information on resource areas and farmland and identifying areas sufficient to house the region's population, including people from every economic segment. Many regions have also estimated the health benefits of regional planning from reductions in chronic diseases such as asthma and heart disease due to addressing air pollution, promoting more active transportation, and more. As noted in the "Under-Served Communities" and "Growth and the Housing Crisis" sections above, some regions have also expanded their efforts to address transportation justice, housing affordability, environmental justice, and displacement.

However, as this report shows, many of the forecasted results have been slow to occur, and California is not on track to meet its SB 375 greenhouse gas emissions reduction targets for 2020. Many interviewees pointed out to CARB that current SB 375 law itself presents challenges to advancing better planning and local implementation. These included: (1) that the current law focuses on providing regional climate planning targets only, with no systematic mechanism for promoting other related and important co-benefits such as VMT reduction, health, equity, and conservation at the regional level; (2) the law does not adequately align State and regional planning horizons.

### **HOW ARE REGIONS WORKING TO ADDRESS THE CHALLENGE?**

While regions do not have the power to expand or strengthen the SB 375 law, individual regions are demonstrating the power of regional planning to address important issues such as equity, regional planning, and conservation, as outlined in Appendix C:



- Identifying priority landscapes for conservation utilizing conservation data and by working with local agencies and conservation experts, and using that to shape the regional growth forecast, then utilizing sales tax or mitigation funds to conserve identified landscapes.
- Providing local tools for conserving key natural and working lands, such as providing information about farmland’s value to the local economy and hosting a transfer-of-development-rights marketplace.
- Analyzing the health, equity, and conservation impacts of SCS scenarios and setting targets for the plan’s projected performance across a range of goals.
- Providing planning and implementation funds to local agencies, placing a priority on projects that benefit areas with environmental justice communities and high health needs and that promote focused growth in existing communities rather than natural lands.

For more information on how regions are promoting equity and health equity, additional information is available in the “Under-Served Communities” section above.

### ***OPPORTUNITIES AND NEXT STEPS***

As work progresses to address the challenges in this report, the conversation should also include possible State action to strengthen SB 375. While amending SB 375 alone will not solve the challenges outlined in this report, doing so can strengthen and make greater use of efforts underway in this area. These improvements could start by:

- Identifying and aligning State targets for climate and transportation, health, equity, and conservation, including those from documents such as the Scoping Plan and the California Transportation Plan, to regional plans.
- Assessing and recommending changes to the law that better align State and regional planning horizon years.