

EVALUATION OF THE ASSOCIATION OF BAY AREA GOVERNMENTS' AND METROPOLITAN TRANSPORTATION COMMISSION'S SB 375 2021 SUSTAINABLE COMMUNITIES STRATEGY

November 2022

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Introduction

The Sustainable Communities and Climate Protection Act of 2008 (SB 375, Steinberg, Chapter 728, Statutes of 2008) is intended to support the State's broader climate goals by encouraging integrated regional transportation and land use planning that reduces greenhouse gas (GHG) emissions from use of passenger vehicles and light trucks. Under the law, California's metropolitan planning organizations (MPO) develop regional sustainable communities strategies (SCS) – as part of their regional transportation plans (RTP) – that contain land use, housing, and transportation strategies that, when implemented, can meet the per capita passenger vehicle GHG emission reductions targets for 2020 and 2035 set by the California Air Resources Board (CARB or Board). Once an MPO adopts an SCS, SB 375 directs CARB to accept or reject an MPO's determination that its SCS, when implemented, would meet the targets for the region.

On October 21, 2021, the Association of Bay Area Governments (ABAG)¹ and the Metropolitan Transportation Commission (MTC), which serves as the MPO for the Bay Area region, adopted its 2021 Regional Transportation Plan/Sustainable Communities Strategy, also known as *Plan Bay Area 2050* (2021 SCS or the plan).² ABAG/MTC provided for CARB staff's review, a complete submittal of the 2021 SCS and all necessary supporting information on March 9, 2022. ABAG/MTC's 2021 SCS determined the SCS achieves the regional targets to reduce GHG emissions from passenger vehicle use by 10 percent in 2020 and 19 percent in 2035, compared to 2005 levels, as adopted by the Board in 2018.³

This report reflects CARB's evaluation of ABAG/MTC's 2021 SCS GHG quantification and proposed actions to meet the 2035 target. This evaluation includes CARB's conclusion on the 2021 SCS target determination. It also includes CARB's concerns about obstacles to implementation of SCS strategies that could prevent the region from supporting the State's climate commitments through its land use and transportation planning efforts. Action from government, businesses, and residents are needed to implement the SCS and reverse this trend. That will allow the Bay Area to

¹ Association of Bay Area Governments and Metropolitan Transportation Commission covers nine counties and 101 cities in the Bay Area region. The Bay Area region includes 20 percent of California's population with about 7.8 million people.

² Association of Bay Area Governments and Metropolitan Transportation Commission. [2021 Regional Transportation Plan/Sustainable Communities Strategy](#).

³ Association of Bay Area Governments and Metropolitan Transportation Commission. [2021 Regional Transportation Plan/Sustainable Communities Strategy](#).

realize its vision for the sustainability of its communities along with all the expected public health, climate, and economic benefits for the region and beyond.

CARB's Evaluation

CARB's evaluation of the SCS consists of two components - the determination and reporting components - and is based on the general method described in CARB staff's [Final Sustainable Communities Strategy Program and Evaluation Guidelines](#) (2019 Evaluation Guidelines).⁴ The determination component covers the analyses conducted by CARB staff to determine whether the SCS would achieve the applicable GHG emission reduction targets when implemented. This component consists of a series of four policy analyses, which evaluate whether the strategies, key actions, and investments from the SCS support its stated GHG emission reductions. These four analyses include the Trend Analysis, Policy Analysis, Investment Analysis, and Plan Adjustment Analysis. CARB staff's evaluation relied on a review of ABAG/MTC's 2021 SCS, additional SCS submittal materials provided by ABAG/MTC further explaining its modeling inputs and assumptions, trends of particular performance indicators, key actions, investments, current trends, and plan adjustments, as well as on information gathered in follow-up conversations with ABAG/MTC staff. For a summary of strategies and quantification methods evaluated as part of ABAG/MTC's 2021 SCS submittal see Appendix A: ABAG/MTC's 2021 SCS Strategy Table.

With respect to the reporting component, the 2019 Evaluation Guidelines includes three elements: tracking implementation, incremental progress, and equity. Tracking implementation reporting captures progress the region has made toward its SCS implementation based on observed data and whether it is on track to meet the GHG reduction targets based on how well the observed data track with what the plan said would happen. Incremental progress reports on whether an MPO's SCS includes more or enhanced strategies compared to its prior SCS that are consistent with the information the MPO shared during the 2018 target-setting process. The equity section identifies the efforts the MPO has undertaken to meet federal and State requirements related to equity. These reporting components are included as Appendix C: MPO Reporting Components and serve to identify the effectiveness of prior SCS implementation efforts and increase overall transparency of the SCS for the public and other stakeholders. They are not used to determine whether the SCS would meet the targets.

⁴ CARB. Final Sustainable Communities Strategy Program and Evaluation Guidelines. (November 2019).

This Evaluation report summarizes CARB staff's evaluation of ABAG/MTC's 2021 RTP/SCS submittal. CARB staff's analysis is organized across the four determination analyses: trend, policy, investment, and plan adjustment. These analyses are followed by discussion of CARB's overall conclusion to accept ABAG/MTC's determination that its 2021 SCS would meet the target of a 19 percent reduction by 2035, compared to 2005 levels, when fully implemented, and CARB staff's concerns and recommendations regarding implementation.

Trend Analysis

This section summarizes CARB's analysis of key plan performance indicators to determine if the data provided by ABAG/MTC support the 2021 SCS's stated GHG and vehicle miles traveled (VMT) reductions. As part of the 2019 Evaluation Guidelines, CARB staff requested data on the following eight performance indicators: 1) household vehicle ownership, 2) mode share, 3) average travel time by mode, 4) daily transit ridership, 5) average trip length by mode, 6) seat utilization, 7) VMT per capita, and 8) GHG per capita. These indicators represent how a region can show changes to its per capita VMT over time through policies and investments undertaken and reflected in its SCS. Staff analyzed how these metrics change over time (i.e., 2005 to 2035) to determine whether these eight SCS performance indicators are trending in a direction that supports the stated GHG/VMT reductions.

ABAG/MTC provided data associated with these metrics from the output of its travel demand model, ABAG/MTC Activity-Based Travel Demand Model 1.5 (ABM). **Table 1** provides a summary of the trend analysis for ABAG/MTC's 2021 SCS.

Table 1. Trend Analysis Results

Performance Indicator	Forecast Change* 2005 to 2035**	Trend Analysis
Average Trip Length By Mode	SOV (-6.3%) HOV (+6.8%) Transit (+16.3%) Bike (+20.0%) Walk (+1.6%)	ABAG/MTC's 2021 RTP/SCS forecasts a decrease in the average daily single-occupancy vehicle (SOV) trip length from 8.0 miles/trip in 2005 to 7.5 miles/trip in 2035. Over the same period, trip lengths for bike/walk increased from 1.0 to 1.2 miles/trip, and transit increased from 9.2 to 10.7 miles/trip. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature, especially in that reducing SOV trip length reduces VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Average Travel Time By Mode	SOV (+14.3%) HOV (+21.2%) Transit (+2.5%) Bike (-0.9%) Walk (-1.8%)	ABAG/MTC's 2021 RTP/SCS forecasts an increase in the average SOV travel time (14.7 minutes per trip in 2005 to 16.8 minutes in 2035) and high-occupancy vehicle (HOV) travel time (11.8 minutes to 14.3 minutes); transit travel time also slightly increased over the same period from 36.1 to 37.0 minute per trip. The travel time and trip length change for driving modes in ABAG/MTC's 2021 SCS are found to be not proportional, suggesting higher congestion and stop-and-go conditions in the region. CARB staff is concerned that this increasing trend in driving travel time may not support reducing GHG emissions. In addition, CARB staff is concerned that the average travel time for transit is more than two times higher than drive-alone travel time. The travel time for transit is a potential deterrent to transit ridership. Please see Appendix B: Data Table for more details.
Mode Share	SOV (-7.3%) HOV (-13.6%) Transit (+71.7%) Bike (+113.6%) Walk (~0.0%)	ABAG/MTC's 2021 RTP/SCS forecasts that mode share for SOV will decrease from 45.0% in 2005 to 41.7% in 2035, while mode share for transit and bike will increase from 5.3% to 9.1%, and 2.2% to 4.7%, respectively, over the same period. The walk mode share, however, will not change. CARB finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that shifting away from SOV to other modes such as transit and biking reduces per capita VMT and GHG emissions. Please see Appendix B: Data Table for more details.
Daily Transit Ridership	+149.8%	ABAG/MTC's 2021 RTP/SCS forecasts daily transit ridership increases from 1,442,000 in 2005 to

Performance Indicator	Forecast Change* 2005 to 2035**	Trend Analysis
		3,602,000 in 2035. CARB staff finds these trends directionally supportive and consistent with the relationship shown in the empirical literature that increasing transit ridership will reduce GHG emissions. However, CARB staff is concerned that decreases in SOV travel time coupled with transit travel time twice that of SOV would not lead to greater transit ridership and lower GHG emissions. Therefore, the transit ridership forecast might be potentially overestimated. Please see Appendix B: Data Table for more details.
Household Vehicle Ownership	~0.0%	ABAG/MTC's 2021 RTP/SCS forecasts no change in household vehicle ownership between 2005 and 2035. CARB staff finds this forecast potentially inconsistent with the decreasing trend in driving mode share and increasing trend in transit ridership and transit ridership per household (i.e., 0.57 in 2005 to 1.03 in 2035). ABAG/MTC's forecasts are contrary to the empirical literature, where households that use more transit and drive less tends to own fewer vehicles. These results are potentially inconsistent and may not support reducing GHG emissions. Please see Appendix B: Data Table for more details.
Seat Utilization	+50% from 2015 to 2035	ABAG/MTC's 2021 RTP/SCS forecasts seat utilization to increase from 0.32, as measured by passenger miles / vehicle miles, in 2015 to 0.48 in 2035. This trend is consistent with ABAG/MTC's mode share and transit ridership trends. CARB staff finds this trend supportive and consistent with the relationship shown in the empirical literature that greater public transit usage will reduce GHG emissions. Please see Appendix B: Data Table for more details.
VMT per Capita	-5.0%***	ABAG/MTC's 2021 RTP/SCS forecasts daily VMT per capita to decrease from 18.3 in 2005 to 17.4 in 2035. CARB staff finds this trend supportive and consistent with the relationship shown in the empirical literature that reducing VMT per capita will reduce GHG emissions. Please see Appendix B: Data Table for more details.
GHG per Capita Reduction	- 20.05%	ABAG/MTC's 2021 RTP/SCS forecasts per capita GHG to decrease from 17.3 lbs/day in 2005 to 13.8 lbs/day in 2035. The GHG per capita reduction forecasted by ABAG/MTC meets the target established by CARB. Please see Appendix B: Data Table for more details.

Notes:

*** (-) decreasing, (+) increasing, (~) no change**

****Year 2020 was not modeled as part of Plan Bay Area 2050 due to 2020 being an anomalous year in terms of economic activity and travel behavior due to the COVID-19 pandemic. For more information about how the Bay Area achieves the 2020 greenhouse gas emissions target, please see the Final Technical Methodology report.**

***** Per capita VMT reductions do not account for reductions from strategies outside MTC's travel demand model, including bike share, car share, vanpool, and target transportation alternatives.**

Under the SCS evaluation process, ABAG/MTC must show how they meet the target for the years 2020 and 2035. However, ABAG/MTC did not model the year 2020 due to the emergence of the COVID-19 pandemic and its impact on passenger driving from the statewide shelter-in-place order. Instead, ABAG/MTC downloaded VMT and GHG estimations from the EMFAC2021 (v1.0.1) web platform to demonstrate that ABAG/MTC met the 2020 target of a 10 percent reduction from the 2005 level. However, it is important to acknowledge that EMFAC data for the calendar year 2020 are not based on the observed data. Therefore, in the future, ABAG/MTC should use other data sources (e.g., Performance Measurement System or locally collected data) to demonstrate and track the progress of achieving the 2020 target. In addition, based on the information provided and CARB's analysis of calculated regional VMT data up to 2019 for the Draft 2022 Progress Report: California's Sustainable Communities and Climate Protection Act⁵, prepared pursuant to SB 150 (Allen, Chapter 646, Statutes of 2017), CARB staff found that the Bay Area region met its 2020 target of 10 percent reduction, however, it would have been unlikely to achieve it but for the pandemic.⁶

The performance indicators for 2035 appear to be trending in the right direction for the region to meet the 2035 target. Therefore, CARB staff finds that taken as a whole, and the 2035 performance indicators used to conduct the Trend Analysis support the GHG reductions projected in ABAG/MTC's SCS. ABAG/MTC will need to do more to ramp up implementation and monitoring of their SCS strategies to ensure that the 2035 emission reduction targets are met, considering ABAG/MTC was not on track to meet its applicable 2020 target, but for the COVID-19 pandemic, and VMT has rebounded since 2020.

⁵ [CARB. Draft 2022 Progress Report California's Sustainable Communities and Climate Protection Act.](#)

⁶ For more information see [CARB's Draft 2022 Progress Report.](#)

Policy Analysis

This section summarizes CARB staff's evaluation of whether ABAG/MTC's 2021 SCS contains key policy, investment, and other actions that support its identified strategies for meeting its 2035 GHG emission reduction targets using the general method described in CARB's 2019 Evaluation Guidelines. This analysis focuses on what policy commitments are contained in the SCS to support implementation and provides CARB with qualitative evidence on whether an MPO's claimed GHG reductions from its SCS strategies are likely, risky, or unlikely. CARB staff's analysis is organized across four broad SCS strategy categories: (1) land use and housing, (2) transportation infrastructure and network, (3) local/regional pricing, and (4) electric vehicle and new mobility. Within each strategy category, CARB staff discusses: the applicable SCS strategies; the planned outcomes that the SCS assumes will occur in 2035 when strategies are fully implemented; and CARB staff's analysis of whether the SCS contains key policy and investment actions that will support the implementation of the SCS strategies and planned outcomes.

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

- Whether the SCS provided policy actions that corresponded to each of its individual strategies.
- Whether the actions were clear with respect to scope, who will be involved, what will be done, and the anticipated implementation timeline.
- Whether the actions were measurable and included specific regional investment commitments in the RTP/SCS project list, policy and/or financial incentives; technical assistance; and if legislative or other entity action is needed, partnership activities to advance needed changes.

Information used for this effort was collected from ABAG/MTC's 2021 SCS, its SCS Implementation Plan, and additional supporting materials provided by ABAG/MTC in its submittal to CARB. Terms from the SCS are used throughout this evaluation.

Land Use and Housing Strategy Commitments

ABAG/MTC's 2021 SCS includes thirteen land use- and housing-related strategies seeking credit toward the achievement of the region's 2035 SCS target, including, by helping to:

1. Further strengthen renter protections beyond State law
2. Preserve existing affordable housing
3. Allow a greater mix of housing densities and types in growth geographies

4. Build adequate affordable housing to ensure homes for all
5. Integrate affordable housing into all major housing projects
6. Transform aging malls and office parks into neighborhoods
7. Accelerate reuse of public and community-owned land for mixed-income housing and essential services
8. Expand job training and incubator programs
9. Allow greater commercial densities in growth geographies
10. Provide incentives to employers to shift jobs to housing-rich areas well served by transit
11. Retain and invest in key industrial lands
12. Adapt to sea level rise
13. Maintain urban growth boundaries

Together, these land use and housing strategies seek to support ABAG/MTC's goals of supporting affordable housing and diverse land uses, sustaining the region's wealth of natural resources and open spaces, and providing residents greater access to transportation and jobs. ABAG/MTC estimates these strategies will contribute to the total 11.27 percent reduction⁷ in its per capita GHG emissions by 2035 from on-model strategies. This reduction will come from its quantification of on-model land use and housing strategies, along with transportation network changes and pricing strategies together. CARB is unable to isolate the emissions reductions associated with ABAG/MTC's land use and housing strategies individually.

ABAG/MTC's 2021 SCS also includes seven other strategies, including that the region will implement a universal basic income, invest in high-speed internet in underserved low-income communities, provide means-based financial support to retrofit existing residential buildings, provide targeted mortgage, rental, and small business assistance to equity priority communities, fund energy upgrades to enable carbon neutrality in all existing commercial and public buildings, protect and manage high-value conservation lands, and modernize and expand parks, trails, and recreation facilities. Many of these strategies are expected to provide climate benefits to the region. ABAG/MTC is not seeking CARB recognize emissions reductions associated with these strategies for purposes of meeting its SB 375 target. This is because they are not associated with reduction in trips from cars and light-duty trucks, which are relevant to SB 375 or because the strategy benefits are not able to be well-captured by the travel demand model or by off-model techniques.

SCS Planned Outcomes

⁷ ABAG/MTC estimates VMT changes from its land use and housing strategies, along with transportation network changes and pricing strategies in aggregate using its activity-based travel demand model.

The SCS includes assumptions about the type and character of new land use and housing development that will take place in the region between 2015 and 2035. **Error! Not a valid bookmark self-reference.** shows the projected growth geographies of the plan. Specifically, the plan assumes the following outcomes:⁸

- Adds 782,000 new housing units and 974,000 new jobs;
- Increases the region’s total net residential density by 30 percent;
- Includes 12,000 new single-family housing units (2 percent of the total new units) and 770,000 (98 percent) multi-family or attached housing;
- Assumes 37 percent of households and 37 percent of jobs to occur in the Big Three Cities (San Francisco, Oakland, and San Jose), 40 percent of households and 50 percent of jobs to occur in Bayside Cities, 19 percent of households and 11 percent of jobs to occur in Inland, Coastal, Delta Cities & Towns, and 5 percent of households and 2 percent of jobs in Unincorporated Areas;^{9, 10}
- Increases growth within priority growth geographies¹¹ (which include priority development areas,¹² priority production areas,¹³ transit-rich areas,¹⁴ high-resources areas),¹⁵ avoids growth in priority conservation areas;¹⁶ and

⁸ This subsection includes information based on the data table and compares socioeconomic and demographic data and land use data from the 2015 base year to 2035.

⁹ This bullet point refers to growth comparison tables provided by ABAG/MTC.

¹⁰ These geographical jurisdictions are based on their proximity to the Bay, with the three largest cities – San Jose, San Francisco and Oakland – grouped separately as the “Big Three.” Cities that ring the Bay are referred to as “Bayside” cities, while the cities beyond this core are classified descriptively as “Inland, Delta and Coastal.” The remainder of Bay Area lands – by far the largest segment in terms of acreage – is classified as “Unincorporated.” For more information refer to the 2021 RTP/SCS.

¹¹ Priority growth geographies are designated areas used to guide where future growth in housing and jobs would be focused under the plan’s strategies over the next 30 years. These geographies are identified for growth either by local judgement or because of their proximity to transit or access to opportunity.

¹² Priority Development Areas (PDA) are generally near existing job centers or frequent transit that are locally identified (i.e., identified by towns, cities, or counties) for housing and job growth.

¹³ Priority Production Areas (PPA) are locally identified places for job growth in middle-wage industries like manufacturing, logistics or other trades. An area must be zoned for industrial use or have a predominantly industrial use to be a PPA.

¹⁴ Transit-Rich Areas are near rail, ferry or frequent bus service that were not already identified as PDAs. Specifically, these are areas where at least 50% of the area is within ½-mile of either an existing rail station or ferry terminal (with bus or rail service), a bus stop with peak service frequency of 15 minutes or less, or a planned rail station or planned ferry terminal (with bus or rail service).

¹⁵ High-Resource Areas (HRA) are State-identified places with well-resourced schools and access to jobs and open space, among other advantages, that may have historically rejected more housing growth. This designation only includes places that meet a baseline transit service threshold of bus service with peak headways of 30 minutes or better. Plan Bay Area 2050’s High-Resource Areas are a subset of the high-opportunity areas identified statewide by the California Department of Housing and Community

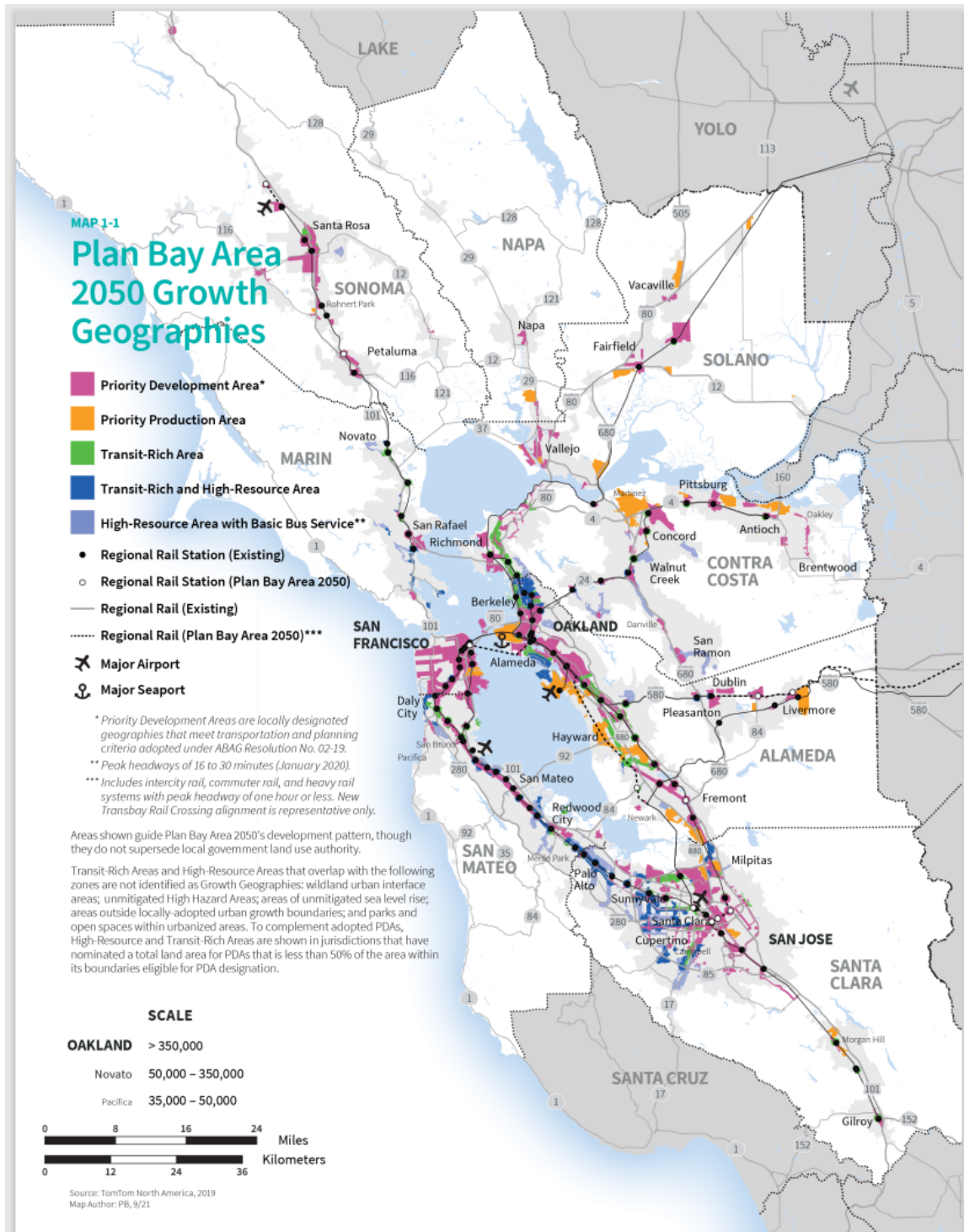
- Assumes 781,000 new housing units and 796,000 new jobs are located within a ½-mile of a transit station or stop (a 30 percent and 21 percent increase, respectively, compared to 2015 levels).

See Figure 1 for locations of priority growth geographies or where development is assumed to occur. See Figure 2 for jobs-to-housing balance. See Figure 3 for priority conservation areas where development should not occur in the region. See Figure 4 for sea level rise resilience investments. Figure 5 shows the locations of mall/office park conversion sites.

Development that meet a minimum transit service threshold and are in the Bay Area. See more at: <https://www.treasurer.ca.gov/ctcac/opportunity.asp>.

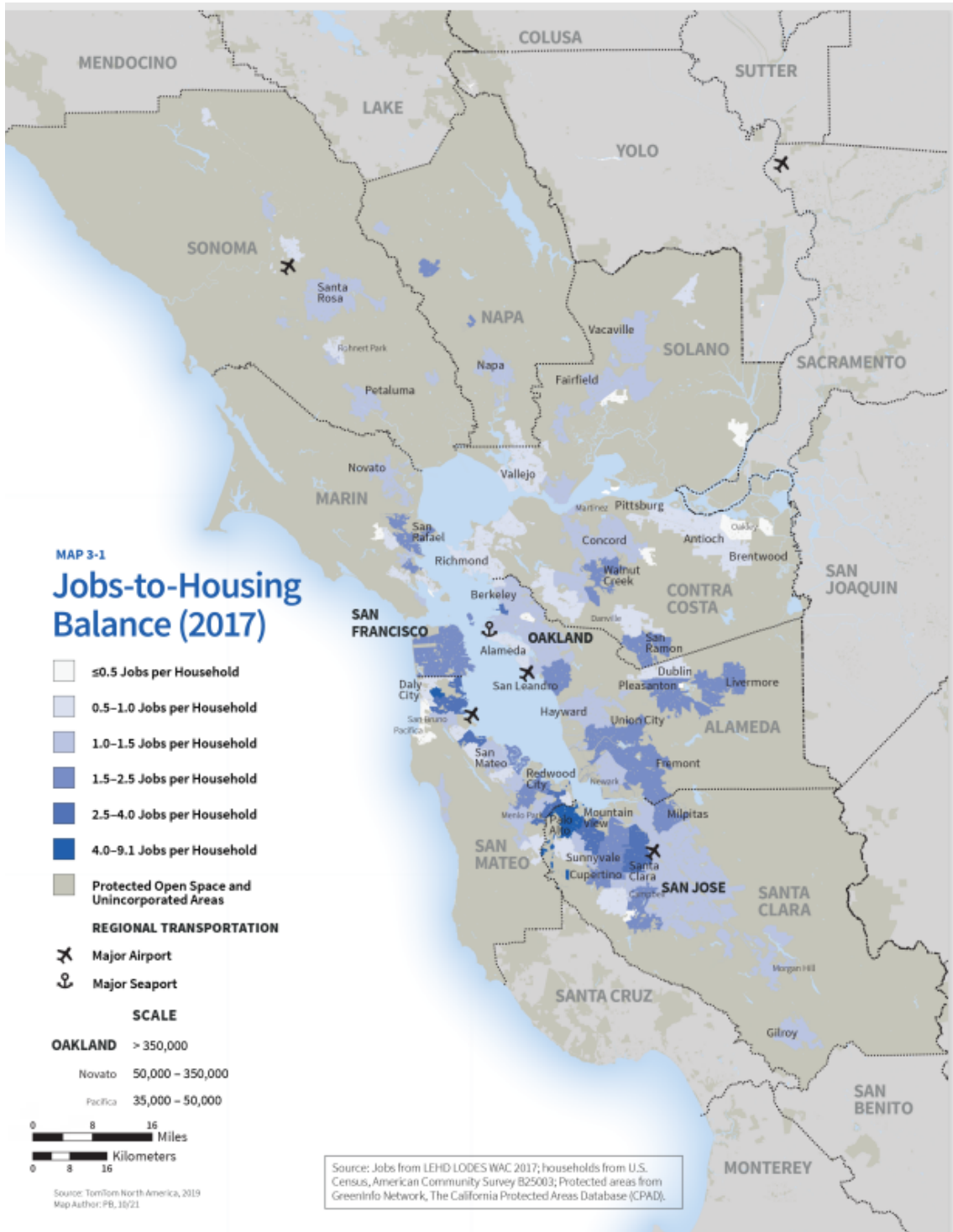
¹⁶ Priority Conservation Areas are locations nominated by local jurisdictions, open space districts or parks districts and designated by ABAG for the protection of natural habitats and the preservation of open space for future generations in the Bay Area. This includes farming, ranching, recreational and resource lands.

Figure 1. Plan Bay Area 2050 Growth Geographies



Source: ABAG/MTC 2021 RTP/SCS

Figure 2. Jobs-to-Housing Balance



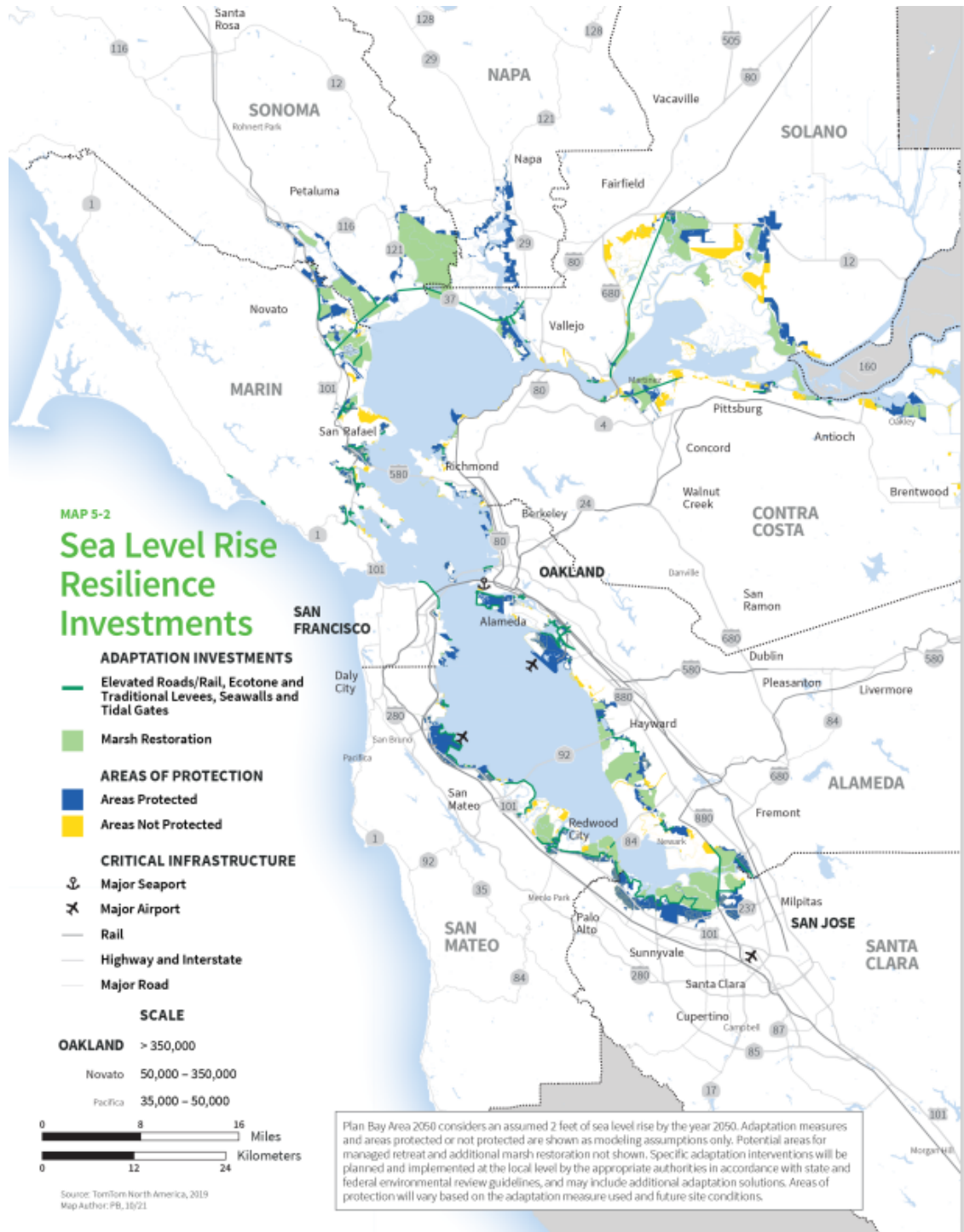
Source: ABAG/MTC 2021 RTP/SCS

Figure 3. Parks and Open Space/Priority Conservation Areas



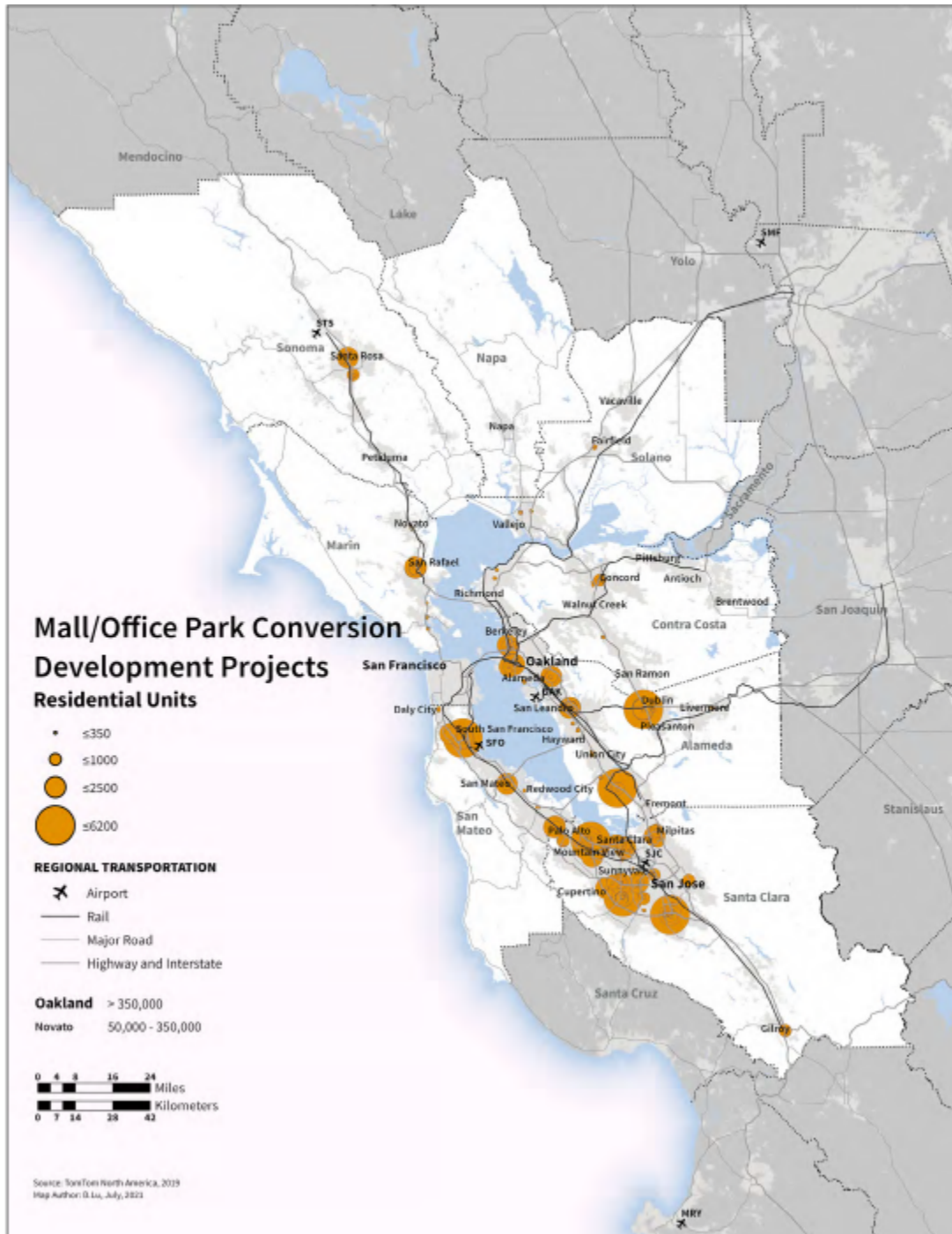
Source: ABAG/MTC 2021 RTP/SCS

Figure 4. Sea Level Rise Resilience Investments



Source: ABAG/MTC 2021 RTP/SCS

Figure 5. Mall/Office Park Conversion Development Project Locations



Source: ABAG/MTC 2021 RTP/SCS Forecasting and Modeling Report

Supporting Actions

Local government staff and elected officials have almost exclusive authority over land use decisions relevant to implementing the SCS. MPOs create SCSs that forecast regional growth patterns and describe the region's sustainability strategies yet are not directly responsible for funding and approving individual projects to implement the SCS. Achieving the plan outcomes discussed above will require local government action. Local actions that do not align with regional goals stifles the Bay Area region's ability to implement the plan. This could include developers seeking, and local governments and ballot initiatives funding and approving, leapfrog development in greenfield areas, and rejecting or not affirmatively supporting increased infill, especially affordable housing, and growth in walkable or transit-oriented areas. CARB reviewed the SCS to consider how it would support needed local action to cause development patterns that align with regional goals.

CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed development pattern in the SCS. In particular, CARB staff considered whether the SCS identified region-specific funding or technical assistance programs that support developers and local governments in prioritizing growth in the SCS's preferred growth areas. In addition, CARB staff checked to see how the SCS's assumptions about future housing unit development within the SCS's preferred growth areas compared against existing local plans, as alignment of regional and local plans is an important first step toward ensuring that future needs can be accommodated.

The 2021 SCS identifies the need to focus on new growth in priority growth geographies. The following section includes CARB staff's summary of ABAG/MTC's 2021 SCS land use and housing strategy commitments and associated supporting actions and investments enumerated above.

Further Strengthen Renter Protections Beyond State Law

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy seeks to build upon the State's emergency rent cap¹⁷ established in 2019 by linking annual rent increases for all types of housing regionwide to the rate of inflation. New units are exempt for a period of 10 years (the timeframe developers and lenders typically use to determine the financial feasibility of a project) to ensure that the strategy does not discourage new housing production. This strategy assumes that the rate at which low-income households relocate will decrease. ABAG/MTC project that this strategy will cost \$2 billion. ABAG/MTC states they would support advocating for renter protections for tenants and low-income communities to prevent unjust evictions and displacement. ABAG/MTC will launch and deliver the Bay Area Housing Financing Authority)¹⁸ pilot projects in partnership with cities and counties. These will include developing standardized best practices for tenant protection programs and scope potential regional-scale anti-displacement programs will support this strategy. Additionally, ABAG/MTC states they will need to complete and implement the Expanded Regional Housing Portfolio and the Bay Area Housing Financing Authority Business Plan.

CARB Staff Analysis:

Actions Identified:¹⁹ Yes. However, CARB staff is concerned that ABAG/MTC has limited authority to implement the strategy as legislative changes and buy-in are uncertain at the assumed level.

Funding in the RTP/SCS Project List:²⁰ N/A.²¹

¹⁷ AB 1482, The California Tenant Protection Act (AB 1482, Chiu, Chapter 597, Statutes of 2019) caps annual rent increases at 5%, plus inflation, for buildings 15 years and older and bans landlords from evicting tenants who have lived in their apartments for a year or more without "just cause."

¹⁸ The [Bay Area Housing Financing Authority](#) is the first regional housing finance authority in California and it is working to address affordable housing and housing stability in the Bay Area.

¹⁹ Actions identified refers to if ABAG/MTC has identified how the SCS strategy will be implemented through actions.

²⁰ Funding in the RTP/SCS Project List refers to if there are projects and investments in the financially constrained project list that support the SCS strategy.

²¹ N/A means not applicable.

ABAG/MTC Other Resources Available:²² Yes, ABAG/MTC has identified some resources to provide funding for pilot projects and technical assistance. However, CARB staff is concerned that ABAG/MTC have limited financial resources in this area to support local implementation at the assumed levels.

Preserve Existing Affordable Housing

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would preserve all existing deed restricted units that are at risk of conversion to market-rate housing. In addition, it seeks to acquire homes currently affordable to low-and middle-income residents for preservation as permanently deed restricted affordable housing. This strategy locates and targets units currently affordably occupied by low-income households and converts them to deed restricted housing locking in both affordability and occupancy by households. Preserving this housing would involve pursuing tax incentives, targeted subsidies, favorable financing, and other methods to transfer ownership of affordable units without deed restriction to individual tenants, housing cooperatives, or public or non-profit housing organizations, including community land trusts. ABAG/MTC project that this strategy will cost \$237 billion. ABAG/MTC states they would lead efforts to seek new revenues for affordable housing preservation, launch and deliver a Bay Area Housing Financing Authority pilot program to pursue new affordable housing preservation strategies, including the restructured Bay Area Preservation Pilot Program²³, complete and implement the Expanded Regional Housing Portfolio and the Bay Area Housing Financing Authority Business Plan, and evaluate changes to federal and state policies to increase incentives for affordable housing preservation strategies.

CARB Staff Analysis:

Actions Identified: Yes.

²² ABAG/MTC Program Funding Available refers to if ABAG/MTC has resources to support the SCS strategy.

²³ The Bay Area Preservation Pilot Fund focuses on the preservation of affordable housing. It assists mission-driven developers and community-based organizations with the acquisition and preservation of homes. For more information visit: Bay Area Preservation Pilot Fund (BAPP) | Metropolitan Transportation Commission (ca.gov).

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some actions and resources to provide funding for pilot projects and technical assistance. However, CARB staff is concerned that this strategy would cost \$237 billion and ABAG/MTC have stated that funding is limited, and additional funding is needed to support implementation and acquire properties for affordable housing preservation. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Allow a Greater Mix of Housing Densities and Types in Growth Geographies

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy supports a variety of housing types at a range of densities to be built in Growth Geographies, including Priority Development Areas (PDAs), High Resource Areas (HRAs), and Transit Rich Areas (TRAs). This strategy assumes up-zoning of dwelling units per acre in selective geographies based upon level of transit service, high resource status, and existing land uses. ABAG/MTC have identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they would partner with local jurisdictions on implementation. ABAG/MTC state they would advocate for legislation that enables a greater mix of housing densities and types in growth geographies. ABAG/MTC will continue to seek greater strategic alignment through the region's existing programs that provide financial resources and technical assistance for local jurisdiction planning (e.g., Regional Housing Technical Assistance (RHTA) Program,²⁴ Priority Development Area (PDA) Planning and Technical Assistance Grant Program), as well as eligible new funding sources. ABAG/MTC will assist local jurisdictions to complete or initiate plans for all remaining PDAs by 2025 and completing and

²⁴ RHTA Program supports local governments in complying with rapidly evolving laws and adopting and implementing compliant Housing Elements. For more information visit: <https://abag.ca.gov/our-work/housing/regional-housing-technical-assistance>.

implementing the Transit-Oriented Development (TOD) Policy Update²⁵ to ensure land use supports transit investments and transit accessibility.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions for implementing this strategy; therefore, local land use changes and buy-in are uncertain. ABAG/MTC has limited authority to implement the strategy. Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB is concerned that ABAG/MTC has not fully accounted for implementation of this strategy as funding in the RTP/SCS is listed as N/A.²⁶ CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Build Adequate Affordable Housing to Ensure Homes for All

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy seeks to build enough deed restricted affordable homes necessary to fill the existing gap in homeless

²⁵ The Transit-Oriented Communities Policy Update is designed to boost the overall housing supply and increase residential densities in transit-rich areas throughout the Bay Area; spur more commercial development near transit hubs served by multiple agencies; promote bus transit, walking, biking and shared mobility in transit-rich areas; and foster partnerships to create transit-oriented communities where people of all income levels, racial and ethnic backgrounds, ages and ability levels can live, work and thrive. For more information visit: [MTC Adopts Landmark Policy to Promote Housing, Commercial Development Near Transit Stations | Metropolitan Transportation Commission](#)

²⁶ Several strategies in the 2021 RTP/SCS costs are listed as not applicable (N/A). ABAG/MTC stated that these strategies would require incremental increases in administrative costs to implement. In these cases, the strategy cost is shown as N/A. Association of Bay Area Governments and Metropolitan Transportation Commission. [2021 Regional Transportation Plan/Sustainable Communities Strategy](#), page 132.

housing and to meet the needs of low-income households, including those currently living in overcrowded or unstable housing. This strategy assumes “almost feasible” residential projects will be built as deed restricted units.²⁷ ABAG/MTC project that this strategy will cost \$219 billion. ABAG/MTC states they would lead implementation by seeking new revenues for affordable housing production and exploring better coordination of existing funding streams. ABAG/MTC will also continue and seek greater strategic alignment of existing programs, including financial resources and technical assistance through the Regional Housing Technical Assistance Program and the PDA Planning and Technical Assistance Grant programs,²⁸ as well as eligible new funding sources, with a goal of supporting jurisdictions with plans and policies to increase the supply of affordable homes. It also includes launching and delivering Bay Area Housing Finance Authority pilot projects to facilitate production and ensure equitable access to affordable housing, including a regional affordable housing application platform known as “Doorway” and an affordable housing pipeline database. This strategy also seeks completing and implementing the Expanded Regional Housing Portfolio and the Bay Area Housing Financing Authority Business Plan evaluating changes to federal and State policies to increase incentives for affordable housing production strategies.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned with the assumption that almost feasible residential projects would be built, which is uncertain.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that this strategy would cost \$219 billion and ABAG/MTC states that funding is limited, and additional funding is needed to support implementation of new affordable housing. CARB staff is concerned that this strategy will not be fully implemented and realize the

²⁷ Potential new housing projects based on locations identified for future growth are assumed to include deed restricted units.

²⁸ PDA Planning and Technical Assistance Program helps local governments create Specific Plans for priority development areas. For more information: Priority Development Area Program Overview | Association of Bay Area Governments (ca.gov).

anticipated emission reductions because the RTP/SCS has not identified full funding.

Integrate Affordable Housing into All Major Housing Projects

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would integrate affordable housing into developments, such as through inclusionary housing policies. This strategy assumes that 10 to 20 percent of new market-rate housing developments of 5 units or more would be permanently deed restricted as affordable housing for low-income households. The percentage level is varied by local real estate market strength, access to opportunity, public transit, and displacement risk. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they would support implementation by continuing and seeking greater strategic alignment of existing programs, including financial resources and technical assistance through the Regional Housing Technical Assistance Program, as well as the PDA Planning and Technical Assistance Grant programs, to enable local governments to develop context-specific inclusionary zoning and affordable housing incentives.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions on implementing this strategy; therefore, local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority to implement the strategy

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Transform Aging Malls and Office Parks into Neighborhoods

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy seeks to permit and promote the reuse of shopping malls and office parks with limited commercial viability as neighborhoods with housing at all income levels, with local and regional services, and public spaces. ABAG/MTC identified and prioritized mall and office park locations and assumed a handful of regional pilot projects would add 1,000+ homes and dedicate land for affordable housing and public institutions such as community colleges and university extensions. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they would partner with local jurisdictions on implementation by continuing and seeking greater strategic alignment of existing programs, including financial resources and technical assistance through the Regional Housing Technical Assistance Program and the PDA Planning and Technical Assistance Grant programs, as well as eligible new funding sources, to promote planning and redevelopment of malls and office parks in PDAs and other growth geographies. This strategy also includes identifying redevelopment opportunities and challenges and partnering with local jurisdictions, community members, property owners, affordable housing developers, and other stakeholders to accelerate the redevelopment of aging malls and office parks.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions on implementing this strategy; therefore, local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority to implement the strategy.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

[Accelerate Reuse of Public and Community-Owned Land for Mixed-Income Housing and Essential Services](#)

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would establish a regional network of land owned by public agencies, community land trusts, and other

non-profit landowners and coordinate its reuse as deed restricted mixed-income affordable housing, essential services, and public spaces. This strategy identified sites owned by public agencies, community land trusts, and other non-profit landowners and assumes they will be opened for housing and mixed-use development. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they would lead implementation by continuing to seek greater strategic alignment of existing programs, including financial resources and technical assistance through the Regional Housing Technical Assistance Program, the PDA Planning Grants and PDA Technical Assistance programs, as well as eligible new funding sources, to plan for public land reuse and to advance residential and mixed-use projects with a large share of affordable housing. ABAG/MTC would also advance an initiative identifying challenges and opportunities for catalyzing the reuse of public- and community-owned land by partnering with local jurisdictions, community members, public landowners, community land trusts and a broad range of other stakeholders.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from public agencies, community land trusts, and non-profit landowners on implementing this strategy; therefore, local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Expand Job Training and Incubator Programs

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would fund technical assistance for establishing a new business, access to workspaces, mentorship, and financing through a series of co-located business incubation and job training centers. ABAG/MTC assumed development of new incubator space, based on 25 jurisdictions' nominations of 34 Priority Production Areas (PPA) around the region. Incubator spaces are represented by adding 450,000 square

feet of industrial development within each PPA. ABAG/MTC project that this strategy will cost \$5 billion. ABAG/MTC states they would support implementation by supporting increased funding for job training programs, including pre-apprenticeships, as well as incubator programs. This strategy includes advocating for the importance of apprenticeships and high road career opportunities, including construction, to improve economic mobility and support the plan's ambitious housing and infrastructure goals, with an emphasis on recruiting women, veterans, formerly incarcerated people, people of color, and residents of Equity Priority Communities. This strategy also supports implementing the recommendations of ABAG/MTC's Regional Governmental Partnership for Local Economic Rebound initiative and partnering with regional economy stakeholders, including labor, business, and education partners on research and modeling of workforce supply challenges facing the region and megaregion.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from businesses, education providers, and other economy stakeholders on implementing this strategy at the assumed levels and buy-in are uncertain and ABAG/MTC has limited authority.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that additional funding is needed to support implementation.

Allow Greater Commercial Densities in Growth Geographies

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy includes supporting greater densities for new commercial development in select Priority Development Areas and Transit-Rich Areas to encourage more jobs to locate near public transit. ABAG/MTC have identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they would partner with local jurisdictions on implementation by advocating for legislation that enables a greater mix of commercial densities as outlined in the plan's Growth Geographies. This strategy seeks to complete and implement the TOD Policy Update to ensure land use supports transit investments. It also supports continuing and seeking greater strategic alignment of existing programs,

including the PDA Planning Grants Program, with expanded emphasis on integrating housing and job growth at transit-supportive densities in transit-rich Growth Geographies.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions on implementing this strategy as local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority. Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Yes, ABAG/MTC has identified some resources and technical assistance. However, CARB staff is concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Provide Incentives to Employers to Shift Jobs to Housing-Rich Areas Well Served by Transit

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes a subsidy from new tax revenues that encourages employers to locate in housing-rich areas near existing transit (e.g., Concord or San Leandro). Subsidies would be used to incentivize development at existing regional rail stations, improve jobs-housing balance and reverse commuting. ABAG/MTC project that this strategy will cost \$10 billion. MTC/ABAG states they will primarily take a support role by coordinating transportation investments with local jurisdictions, advocating for legislation, seeking alignment across existing programs, and evaluating new funding sources. They have identified the need for partnerships between local jurisdictions, the business community, and advocates to help champion this strategy.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions and

businesses on implementing this strategy as subsidies and buy-in are uncertain and ABAG/MTC has limited authority.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Somewhat. ABAG/MTC has identified limited resources and technical assistance. CARB staff is concerned that additional funding is needed to support implementation.

Retain and Invest in Key Industrial Lands

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy supports implementation of local land use policies to retain key industrial lands identified as Priority Production Areas (PPA). This strategy would include the preservation of industrial zoning and an assumed increase in development capacity to enable new development to “pencil out” in these zones, without competition from residential and other commercial uses. This strategy would support retaining businesses and jobs in existing urban areas to shorten commutes. The strategy would also provide limited funding for high-growth PPAs for non-transportation infrastructure improvements including fiber, broadband, and building improvements. ABAG/MTC project that this strategy will cost \$4 billion. ABAG/MTC has identified that a pilot program could support this strategy, but future funding would need to be identified to support PPAs in a similar manner as PDA programs that support local jurisdictions. It is anticipated that ABAG/MTC will take a partner role by supporting investments in select jurisdictions over the next several years.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions and businesses on implementing this strategy as local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority. Additionally, CARB is concerned with the assumption that there will be an increase in development capacity to enable new developments to “pencil out”, which is uncertain.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Somewhat. ABAG/MTC has identified limited resources and technical assistance. CARB staff is concerned that additional funding is needed to support implementation.

Adapt to Sea Level Rise

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would address adaptation needs in locations that are permanently inundated with less than two feet of sea level rise providing protection from king tides and storms. It emphasizes nature-based interventions, such as restoring degraded marshes or implementing ecotone levees — physical structures that protect communities and provide surface area where shoreline vegetation and habitats can slowly migrate up slope over time. It also includes protecting most vulnerable highway and rail infrastructure from inundation and select parcels in high-growth or high-risk areas (and the buildings on them) from inundation. It would protect shoreline communities, prioritizing areas of low costs and high benefits and provide additional support to vulnerable populations. ABAG/MTC project that this strategy will cost \$19 billion. ABAG/MTC anticipate using (\$3 billion) of existing and new revenues (\$16 billion), to fund a suite of protective strategies (e.g., ecotone levees, traditional levees, sea walls), marsh restoration and adaptation, the elevation of critical infrastructure, and it would support some lower density communities with managed retreat. ABAG/MTC mentioned that they will need new revenue to support this strategy. They will also advocate for legislative reforms to better address climate adaptation and resilience goals and support San Francisco Bay Conservation and Development Commission in implementation of the Bay Adapt Joint Platform, a collaborative strategy to adapt to rising sea levels.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that that the RTP/SCS does not include commitments from public agencies, businesses, and the public on implementing this strategy at the assumed levels and buy-in are uncertain and ABAG/MTC has limited authority. Additionally, CARB is unclear how this strategy supports GHG emission reduction for light-duty vehicles.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Somewhat. ABAG/MTC has identified limited resources and technical assistance. CARB staff is concerned that additional funding is needed to support implementation from new revenue sources, which are uncertain.

Maintain Urban Growth Boundaries

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes new development will be confined within areas of existing development or areas otherwise suitable for growth, as established by local jurisdictions. This strategy assumes that all lands outside urban growth boundaries and other existing environmental protections are ineligible for urban and suburban development. This strategy would support regional resilience by limiting new growth in unincorporated areas in the wildland-urban interface and other high-risk areas. ABAG /MTC has identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states they will advocate for the preservation of existing urban growth boundaries, and they will seek new revenues to support land conservation. They will revamp the PCA planning framework using a data-driven approach to better prioritize the most critical areas for conservation. Additionally, they will continue to seek greater strategic alignment of existing programs, including funding and implementation of the Regional Advance Mitigation Program as well as the San Francisco Bay Trail, San Francisco Bay Area Water Trail, and the Priority Conservation Area Program²⁹.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from local jurisdictions and on implementing this strategy; therefore, local land use zoning changes and buy-in are uncertain and ABAG/MTC has limited authority. Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: N/A.

ABAG/MTC Other Resources Available: Somewhat. ABAG/MTC has identified limited resources and technical assistance. CARB staff is

²⁹ Priority Conservation Area Program provides grants to help local governments, park districts, utility districts and other agencies acquire or enhance properties designated as PCAs. For more information visit: Priority Conservation Area (PCA) Grants | Metropolitan Transportation Commission.

concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because the RTP/SCS has not identified full funding.

Analysis Results Summary

CARB staff found that the 2021 SCS land use and housing planned outcomes are supported by region-specific funding and planning program actions. ABAG/MTC has included new programs and commitments to accelerate housing supported by the Bay Area Housing Financing Authority as well as through existing programs such as the RHTA Program and the PDA Planning and Technical Assistance Grant Program.

In addition to CARB staff's evaluation of strategies and supporting actions, CARB staff also looked for general alignment of regional and local planning assumptions around the location of future housing unit development. ABAG/MTC's RTP/SCS RHNA focused on two separate time horizons for housing: the shorter-term RHNA with its eight-year cycle, and the longer-term vision for the next 30 years. These two efforts were coordinated with RHNA's near-term focus setting the stage for early implementation of the RTP/SCS envisioned growth pattern. Implementation of SCS strategies that support a variety of housing types, especially affordable housing, will be critical to furthering RHNA and Housing Element implementation.

While CARB staff's analysis supports a conclusion that ABAG/MTC's 2021 SCS would meet the target, when implemented, CARB staff has significant concerns that the Bay Area region will not implement the land use and housing strategies in the 2021 SCS to achieve its anticipated GHG reduction and planned outcomes at the assumed levels. Taking the production of affordable housing as an example, as shown in CARB's Draft 2022 Progress Report: California's Sustainable Communities and Climate Protection Act, actual permits issued are lagging, especially for affordable housing. According to local jurisdiction reports that were submitted to the California Department of Housing and Development (HCD), most regions are ahead of schedule in issuing permits for housing for the wealthiest "above-moderate-income" households but are falling short in housing that is affordable for households in the three lower-income categories: moderate-income, low-income, and very low-income.

ABAG/MTC's process for implementing the 2021 SCS includes actions to help address observed shortfalls, however implementation of these strategies relies on funding that has yet to be secured and on local actions that may not be realized. ABAG/MTC consistently states that they will need to secure additional funding sources to support numerous land use and housing strategies, which is troubling when these strategies are projected to cost over \$500 billion dollars in total and this funding would need to be secured and used before the 2035 target year. CARB is therefore concerned that strategies are at risk if funding is not obtained. While ABAG/MTC has a track record

for securing federal and State funding sources and using local funds to support implementation of the SCS, full implementation of the SCS land use scenario will require a series of local actions such as plan changes, conservation efforts for natural and working lands, and the shaping of housing and commercial development into more sustainable patterns that today have no definite commitments or guarantees. Therefore, CARB staff has concerns as to whether the SCS will be able to fully achieve its planned outcomes based on the land use and housing strategy commitments identified.

Transportation Infrastructure and Network Strategy Commitments

ABAG/MTC has included eleven transportation-related strategies seeking credit for achieving the region's SCS targets. These transportation strategies seek to complement its land use and housing strategies and focus on increasing non-SOV mode share and reducing driving. The strategies include:

1. Restore, operate, and maintain the existing system
2. Enable a seamless mobility experience
3. Reform regional transit fare policy
4. Improve interchanges and address highway bottlenecks
5. Advance other regional programs and local priorities
6. Build a complete streets network
7. Advance regional vision zero policy through street design and reduced speeds
8. Enhance local transit frequency, capacity, and reliability
9. Expand and modernize the regional rail network
10. Expand commute trip reduction programs at major employers
11. Expand transportation demand management initiatives

These transportation strategies support ABAG/MTC's goals of improving mobility, accessibility, reliability, and travel safety and increasing personal travel and choices within the transportation system. Altogether, ABAG/MTC estimates these strategies will contribute to approximately 15 percent (11.27 percent from on-model³⁰ and 3.73 percent from off-model) out of its total reduction in per capita GHG emissions of 20 percent.

ABAG/MTC's 2021 SCS also includes one other transportation strategy: support community-led transportation enhancements in equity priority communities. ABAG/MTC is not seeking SB 375 credit for this strategy because the strategy benefits

³⁰ Transportation strategies are aggregated with other on-model and off-model strategies. Only a portion of the reduction would come from on-model transportation strategies.

are not able to be well-captured by the travel demand model or by off-model techniques.

SCS Planned Outcomes

These strategies translate into assumptions about the transportation infrastructure and network changes that will serve the region between 2015 and 2035.³¹ Specifically, the plan assumes the following outcomes:

- Increases the region's total transit operational miles by 55 percent compared to 2015 from 324,000 to 502,000 miles.
- Increases the total transit daily vehicle service hours by 42 percent compared to 2015 from 17,900 to 25,400 hours.
- Increases bike and pedestrian lane miles by 5,500 miles from 2005 levels for a total of 8,780 miles.
- Removes freeway/general purpose lanes (57 percent), removes freeway HOV lanes (70 percent), and increases freeway toll lanes from 44 miles in 2015 to 3,610 miles in 2035, and less than half of one percent change in, arterial/expressways and collector lanes compared to 2015.
- Assumes reduced speed limits to between 20 and 35 mph on arterials and local streets in 2025, and 55 mph on freeways in 2030.
- Assumes a 40 percent auto commute mode share target for major employers as part of expanding employer commute trip reduction programs.³² With the integration of this strategy, and the implementation of other complementary strategies, Plan Bay Area 2050 forecasts that telecommuting would increase to 22 percent in 2050.
- Includes transportation demand management initiatives with results such as:
 - A bike share program with 7,000 bikes, where each bike can replace 1.3 to 1.8 miles of vehicle trips per day, and the entire program can reduce 15 tons of daily GHG emissions by 2035.
 - A car share program with 14 percent and 3 percent participation rates in urban and suburban areas, where each member can reduce 1,200 miles of vehicle trips per year while using more fuel-efficient vehicles for the

³¹ This subsection includes information based on the data table and compares transportation indicators from the 2015 base year to 2035. It also includes information from Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.

³² Major employers (those with 50 or more employees) would be responsible for funding incentives and disincentives to shift employee auto commuters to any combination of telecommuting, transit, walking and bicycling.

miles that are driven, and the entire program can reduce 1,920 tons of GHG emissions per day.

- A vanpool program that doubles the current vanpool fleet of 515 vans to 1,030 vans, for a daily reduction of 5,570 car trips, 306,000 VMT, and 131 tons of GHG emissions by 2035.
- A targeted transportation alternatives initiative that includes individual travel consultation, organized events, and distribution of outreach and informational materials to encourage people to shift from driving alone to other modes. ABAG/MTC assumed that 19 percent and 33 of residents/employees receiving program information change behavior, and the reduction in SOV mode share by 9 to 12 percent which results in VMT reduction of about 2 million and GHG reduction of 883 tons per day.

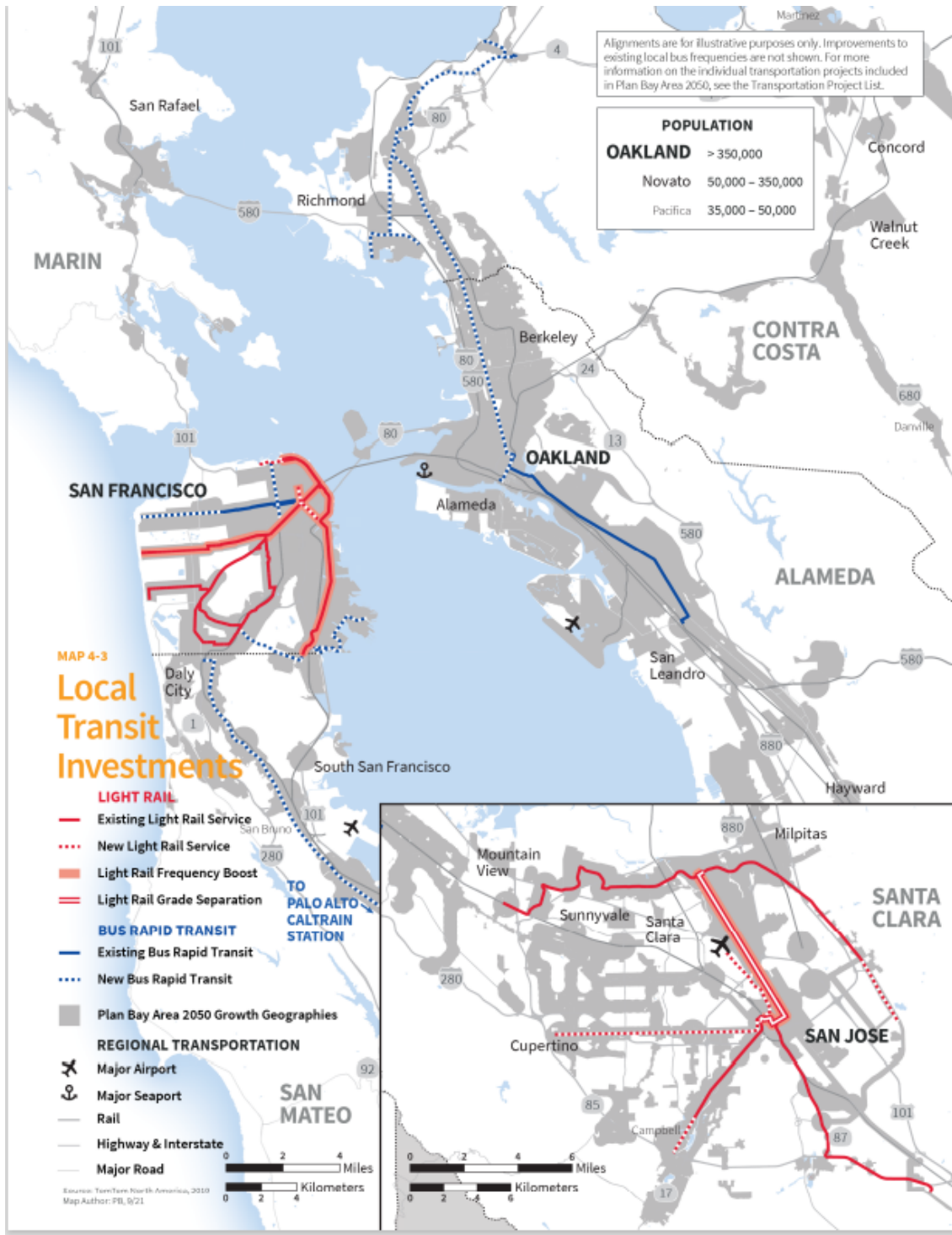
Figure 6 shows the assumed regional transit investments. Figure 7 shows assumed local transit investments. Figure 8 shows assumed express bus investments.

Figure 6. Regional Transit Investments



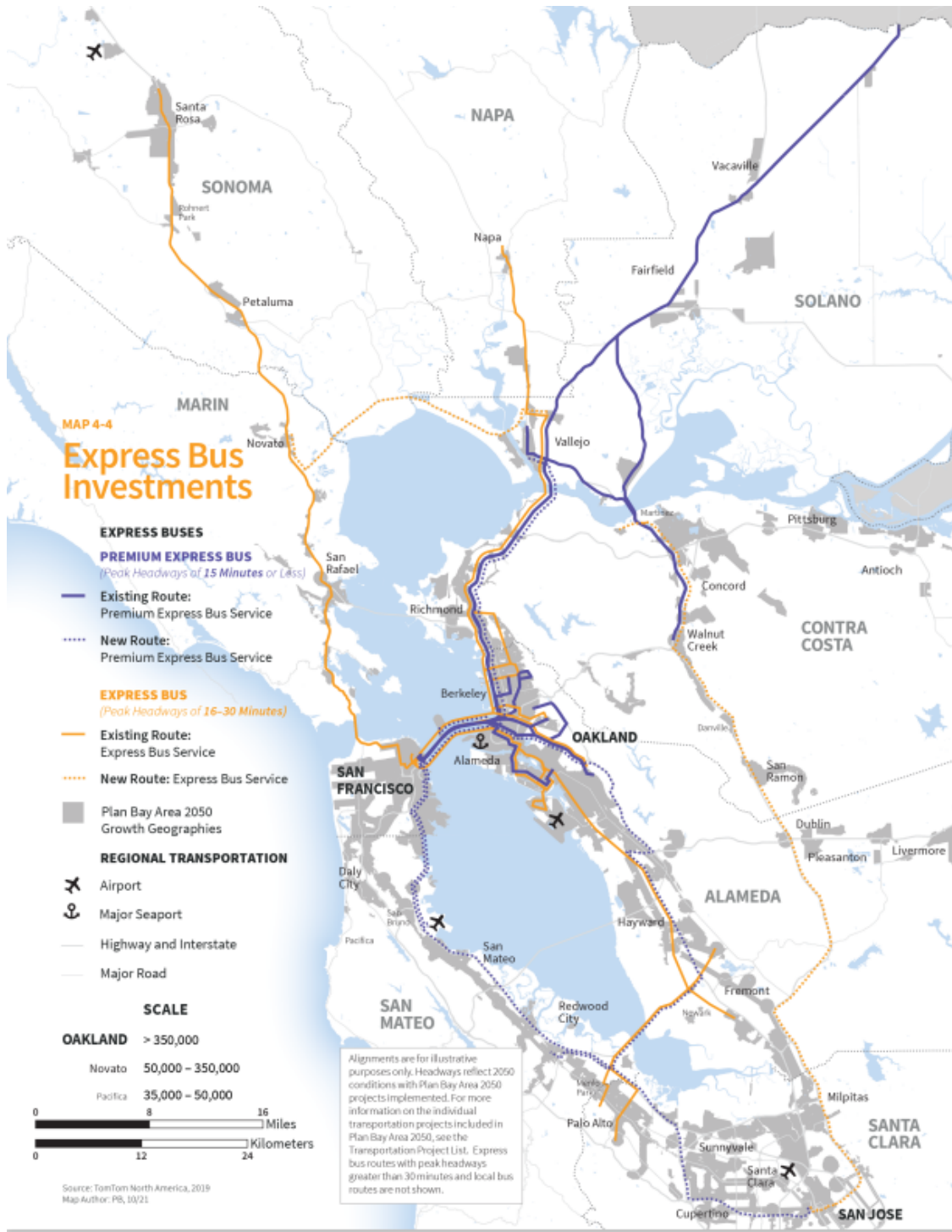
Source: ABAG/MTC 2021 RTP/SCS

Figure 7. Local Transit Investments



Source: ABAG/MTC 2021 RTP/SCS

Figure 8. Express Bus Investments



Source: ABAG/MTC 2021 RTP/SCS

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the development of the transportation network in the SCS. CARB staff looked for alignment against the project list adopted with the 2021 SCS, as well as other supporting documents³³ to see whether the actions are planned and funded within the 2035 target timeframe. CARB staff also considered whether ABAG/MTC identified other region-specific funding or technical assistance programs to support the implementation of its transportation strategies. In addition, CARB staff evaluated the extent to which the projects included in the SCS complement its land use and housing strategies, with a particular focus on capacity-increasing projects that induce travel and therefore increase VMT/GHG emissions.

The following section includes the CARB staff's summary of ABAG/MTC's 2021 SCS transportation strategy commitments and associated supporting actions and investments.

Restore, Operate, and Maintain the Existing System

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would set aside the funding required to maintain existing conditions for freeways, bridges, local streets, and transit assets and to operate the same number of transit service hours that were in operation as of 2019, accelerating the recovery of transit service from reduced service in effect during the COVID-19 pandemic. ABAG/MTC project that this strategy will cost \$389 billion. ABAG/MTC states that they will lead by implementing the bus transit priority recommendations of the Blue Ribbon Transit Recovery Task Force³⁴, including adopting a Transit Priority Policy and Corridor Assessment and delivering near-term transit corridor projects. ABAG/MTC will coordinate the Bay Area's transportation

³³ Other documents include ABAG/MTC's Overall Work Program, the SCS Strategies Tables 2 and 3, and other materials submitted by ABAG/MTC.

³⁴ Blue Ribbon Transit Recovery Task Force approved a set of 27 actions to be taken by MTC and other agencies to guide the future of the Bay Area's public transportation network as the region adjusts to new conditions created by the COVID-19 pandemic. For more information visit: Blue Ribbon Transit Recovery Task Force | Metropolitan Transportation Commission (ca.gov)

pandemic recovery with a focus on fiscal stabilization, system rebuilding, and transit ridership restoration. Additionally, they will seek new revenues and/or increased funding to support transportation operations and maintenance needs.

CARB Staff Analysis:

Actions Identified: Yes.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Somewhat. ABAG/MTC has identified limited resources and technical assistance. CARB staff is concerned that this strategy will not be fully implemented and realize the estimated emission reductions because ABAG/MTC will need additional funding to support this \$389 billion strategy.

Enable a Seamless Mobility Experience

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would support a smartphone app for trip planning, payment, and real-time passenger information, a unified transportation wallet that can be used to pay for all mobility services, cross-operator schedule coordination to reduce transfer wait times at timed transfer locations, and capital improvements ranging from wayfinding signage to station upgrades to make transfers faster and simpler. ABAG/MTC project that this strategy will cost \$3 billion. ABAG/MTC will lead this effort by implementing the fare integration and payment recommendations of the Blue Ribbon Transit Recovery Task Force, including implementing the recommendations of the Fare Coordination and Integration Study and funding related pilot projects, finalizing regional mapping and wayfinding standards, delivering pilot projects, and developing a regional mapping platform. The strategy will also be supported through deploying the Clipper® Mobile app, next-generation Clipper® and a single regional mobility account platform to improve seamless integration of the network.

CARB Staff Analysis:

Actions Identified: Yes.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources and technical assistance to support implementation of this strategy.

Reform Regional Transit Fare Policy

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes streamlined fare structures across the region's 27 transit operators and replaces existing operator-specific discount fare programs with an integrated fare structure across all transit operators and a regional means-based fare discount. The regional integrated fare structure would consist of a flat local fare with free transfers across operators and a distance or zone-based fare for regional trips, with discounts for youth, people with disabilities, and very low-income people. This strategy assumes a 50 percent fare discount for households in the lowest income quintile. ABAG/MTC project that this strategy will cost \$10 billion. ABAG/MTC states they will implement the fare integration and payment recommendations of the Blue Ribbon Transit Recovery Task Force, which include implementing the recommendations of the Fare Coordination and Integration Study, funding related pilot projects, and seeking additional authority for implementation from the State Legislature, if necessary. They will continue to seek greater strategic alignment of existing programs, including Clipper® START, as well as seek new revenues and/or increased funding for fare policy reform, including means-based considerations.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB is concerned that the strategy may not be implemented at the assumed level without addressing historic implementation challenges with establishing consistency across over two dozen independent transit operators, as identified by ABAG/MTC.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources and technical assistance. However, CARB is concerned about this strategy as additional funding is needed to fully implement the assumptions in this strategy. Full implementation of this strategy requires significant subsidies for transit operators, for which financial resources have not yet been identified.

Improve Interchanges and Address Highway Bottlenecks

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would fund a package of projects targeted at reducing congestion, reducing collisions, and improving the operational efficiency of interchanges. ABAG/MTC project that this strategy will cost \$12 billion. ABAG/MTC states they will support strategy implementation, that the State and Caltrans will be partners in delivering highway bottleneck relief and interchange improvement projects, and that county transportation authorities and local jurisdictions will advance local road projects. ABAG/MTC anticipates continuing to seek greater strategic alignment between existing programs to support this strategy.

CARB Staff Analysis:

Actions Identified: Yes. However, this strategy is expected to cost \$12 billion and this strategy includes projects that may be counter to SB 375 goals. Projects to rebuild interchanges and widen key highway bottlenecks to achieve short-to-medium-term congestion relief have been shown to induce additional vehicle travel in the long-term.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources to implement this strategy.

[Advance Other Regional Programs and Local Priorities](#)

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would fund the implementation of complementary programs and minor transportation investments at the regional and local levels. Projects within this strategy that were modeled had their GHG impacts quantified and projects that were non-modellable within this strategy did not have GHG impacts quantified. Examples of regional programs included within this strategy include 511 traveler information services, emergency management, incident management and

Connected Bay Area³⁵. ABAG/MTC project that this strategy will cost \$17 billion. ABAG/MTC's traditional authorities and resources as the region's transportation planner, funder, and coordinator will support this strategy. ABAG/MTC will also continue to seek greater strategic alignment of existing programs.

CARB Staff Analysis:

Actions Identified: Yes.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources and technical assistance to support implementation of this strategy.

Build a Complete Streets Network

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would enhance streets to promote walking, biking, and other forms of micromobility by (1) building out a contiguous regional network of 10,000 miles of bike lanes or multi-use paths, (2) providing support to local jurisdictions to maintain and expand car-free slow streets, and (3) supporting other amenities like improved lighting, safer intersections, and secure bike parking at transit stations. This strategy would emphasize complete streets near transit to improve access and in equity-priority communities to advance equity outcomes. ABAG/MTC project that this strategy will cost \$13 billion. ABAG/MTC states they will support strategy implementation by helping complete and implement the recommendations of the Regional Active Transportation Plan³⁶, as well as continue to seek greater strategic alignment of existing programs, such as the Active Transportation Program and the Quick-Build Technical Assistance program³⁷, and local roadway asset inventory development that support complete streets efforts.

³⁵ Connected Bay Area includes projects aimed at improving transportation system management such as coordinated traffic signals, ramp metering, etc.

³⁶ Regional Active Transportation Plan will guide investments in infrastructure and regional policy development and implementation to support walking and, biking. For more information visit: Regional Active Transportation Plan | Metropolitan Transportation Commission (ca.gov)

³⁷ For more information visit: Quick-Build Materials | Metropolitan Transportation Commission (ca.gov)

Additionally, ABAG/MTC will help seek new revenues and/or increased funding for complete streets priorities.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that ABAG/MTC has limited authority to implement the strategy and local jurisdictions' implementation of this strategy at the assumed level is uncertain.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified some resources. However, CARB staff is concerned about this strategy as ABAG/MTC have identified that additional funding is needed to fully implement the assumptions in this strategy, and funding for active transportation infrastructure is often limited and competitive.

Advance Regional Vision Zero Policy through Street Design and Reduced Speeds

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes reduced speed limits to between 20 and 35 miles per hour on arterials and local streets, depending on the setting, and 55 miles per hour on freeways. The maximum speed reduction for freeways is assumed to be implemented in 2030, while the maximum speed reduction for major arterials is assumed to be implemented in 2025. Enforcement of lower speeds is assumed to occur using design elements like speed bumps, lane narrowing, and intersection bulb-outs on local streets, and automated speed enforcement on freeways and local roads as needed, with a special emphasis on enforcement near schools, community centers, and parks. This strategy has been identified by ABAG/MTC as a high-impact strategy for achieving the GHG reduction target. ABAG/MTC project that this strategy will cost \$4 billion. ABAG/MTC states they will partner and engage with local communities and stakeholders to identify priority locations for enforcement, and reinvest revenues generated from violation fines into

roadway safety initiatives, including education and capital investments. ABAG/MTC will advocate for policy changes that will improve roadway safety, particularly for the most vulnerable users, including but not limited to authorization for automated speed enforcement. They will seek new revenues and/or increased funding for vision zero³⁸ priorities. Additionally, ABAG/MTC will continue and seek greater strategic alignment of existing programs, such as the vision zero shared data initiative, which supports regional safety efforts through completing and implementing roadway and pedestrian improvements, and the recommendations in the Regional Active Transportation Plan.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB is concerned that State authorization for speed reduction and automated speed enforcement is needed at the State and local levels. Governor Gavin Newsom signed AB 43 (Friedman, Chapter 690, Statutes of 2021), which allows greater flexibility for local jurisdictions to set speed limits on streets with high injuries and fatalities by enabling cities to put lower speed limits into law. However, additional authorization and collaboration may be needed to fully implement this strategy. Furthermore, ABAG/MTC's assumptions may have overestimated the benefits from this strategy. Not everyone drives at a constant speed. In practice, the speed reduction might increase emissions due to sharp acceleration, deceleration, and stop-and-go conditions. Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions because additional funding is needed to support this strategy.

Enhance Local Transit Frequency, Capacity, and Reliability

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

³⁸ Vision Zero is a nationwide movement to reduce traffic injuries and fatalities to zero.

Supporting Actions and Investments: This strategy would improve the quality and availability of local bus and light rail service, with new bus rapid transit lines, South Bay light rail extensions, and frequency increases with a focus on projects that meet the transportation needs of the region's lower-income residents. ABAG/MTC project that this strategy will cost \$32 billion. ABAG/MTC states they will seek new revenues and/or increased funding through a future transportation ballot measure for transit to support this strategy. They will also continue to seek greater strategic alignment of existing programs, including the "Forward" Commute Initiatives³⁹ and through the implementation of the transit network recommendations of the Blue Ribbon Transit Recovery Task Force.

CARB Staff Analysis:

Actions Identified: Yes.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that this strategy is expected to cost \$32 billion and would require new funding sources such as from local voter approve transportation ballot measures or other new funding sources that are uncertain. Additionally, existing funding for transit operations is often limited and competitive. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

[Expand and Modernize the Regional Rail Network](#)

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would invest in a coordinated suite of projects that extend the regional rail network and increase frequencies and capacity to address peak-hour crowding. This strategy envisions a new Transbay rail crossing linking Oakland and San Francisco, with complementary rail extensions connecting Caltrain and High-Speed Rail to

³⁹ "Forward" Commute Initiatives are a series of projects designed to improve commuting and to reduce greenhouse gas emissions. For more information visit: Forward Commute Initiatives | Metropolitan Transportation Commission (ca.gov).

Salesforce Transit Center, BART to Diridon Station, and the Central Valley to the Bay Area via Valley Link. Furthermore, this strategy funds capital improvements such as electrification, grade separation, and other modernization projects along the Caltrain corridor, prioritizing dual purpose investments from south to north that help to connect High-Speed Rail to the Bay Area. Service frequency increases on the Altamont Corridor Express, BART, and Caltrain are expected to reduce crowding and wait times for rail passengers. To add redundancy and capacity for regional transit trips, this strategy also includes investments in select water transit enhancements, including ferry service frequency increases and new routes serving Treasure Island, Berkeley, Foster City, and Redwood City. ABAG/MTC project that this strategy will cost \$81 billion. ABAG/MTC will also seek new revenues and/or increased funding through a future transportation ballot measure that would include new funding for regional rail. ABAG/MTC will advocate for major capital projects and position them for success, including sequencing projects to align with funding availability, as well as assessing their existing funding, project readiness and characteristics that support the SCS goals. For example, they will advocate for the next phase of California High-Speed Rail construction to connect the Central Valley to the Bay Area, while partnering with State agencies to seek more federal and State monies for the project. ABAG/MTC will also complete and implement the TOD Policy Update to ensure land use supports transit investments and access to transit. ABAG/MTC will also implement the connected network planning and rail network management reform recommendations of the Blue Ribbon Transit Recovery Task Force, including developing a business case for reform and delivery of the Rail Partnership and Governance Assessment. Additionally, ABAG/MTC will collaborate with local, regional, and megaregion partners on major transportation projects to evaluate regional project delivery paradigms and support improved schedule adherence and reduced costs.

CARB Staff Analysis:

Actions Identified: Yes.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that this strategy is expected to cost \$81 billion and would require new funding sources such as from local voter approve transportation ballot measures or other new funding sources that are uncertain. Additionally, existing funding for transit capital and operations is often limited and competitive. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

[Expand Commute Trip Reduction Programs at Major Employers](#)

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy would set a 40 percent target for employee auto commute mode share for all major employers as part of an expanded Bay Area Commuter Benefits Program. Employers would then be responsible for expanding their commute trip reduction programs, identifying, and funding sufficient incentives and/or disincentives to achieve or exceed the target through a combination of telecommuting, transit, walking and bicycling. By the year 2035, ABAG/MTC assumed that no more than 40 percent of each employer's workforce would be eligible to commute by auto on an average workday. To minimize impacts on small businesses, businesses with fewer than 50 employees would be exempt from this policy. ABAG /MTC has identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC have not projected how much this strategy will cost. ABAG/MTC states that it will seek additional authority from the Legislature to modify or expand the existing Bay Area Commuter Benefits Program in partnership with the Bay Area Air Quality Management District, as needed. ABAG/MTC will convene local governments, TDM partners, transit agencies, and employers to foster relationships, target outreach, support education, develop metrics, share data, and identify shared goals. They will identify the resources and capacities necessary to implement an expanded Bay Area Commuter Benefits Program at both the Bay Area Air Quality Management District and ABAG/MTC, including an effort to improve program data and enhance database functionality, while using existing resources to develop program messaging. Additionally, ABAG/MTC will conduct research such as focus groups, workshops, surveys, polls, and studies to support the development of strategies and approaches that will maximize the viability of this strategy for major employers to implement.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that without additional authority from the Legislature to set commute targets for major employers the region will not be able to fully implement the assumptions in this strategy. Additionally, the RTP/SCS does not include commitments from public agencies, businesses, and TDM partners on implementing this strategy at the assumed levels and buy-in are uncertain. Furthermore, this strategy builds upon other strategies such as transportation demand management initiatives, including targeted transportation alternatives that provide personalized travel advice to expand the use of non-SOV travel modes. CARB is concerned that the benefits of this strategy might be double-counted with the off-model calculations used to estimate the benefit from targeted transportation

alternatives, which does not distinguish between employers with 50 or more employees versus employers with fewer than 50 employees.

Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that ABAG/MTC has not fully accounted for the implementation of this strategy as funding in the RTP/SCS is listed as N/A. While some of the activities could likely be incorporated into the work of existing staff, other activities, such as surveys and focus groups, require specialized skills that could necessitate external contracts, for which the funding was not identified.

Expand Transportation Demand Management Initiatives (Bike Share, Car Share, Vanpools, Targeted Transportation Alternatives)

Estimated GHG Emission Reductions 2035: Strategy contributes -2.43 percent (Car Share); -1.11 percent (Targeted Transportation Alternatives); -.17 percent (Vanpools); and -.02 percent (Bike Share) reduction, as calculated off-model.

Supporting Actions and Investments: This strategy would expand investments in transportation demand management (TDM) programs through ABAG/MTC's Climate Initiatives Program to reduce GHG emissions for multimodal transportation sectors via the use of non-SOV modes. This includes a wide range of programs that discourage SOV trips and support the use of other travel modes, such as bike share, car share, vanpools, and targeted transportation alternatives, which are a set of engagement and behavioral economic approaches to provide residents and workers personalized information on transportation alternatives to driving alone and trigger sustained behavior change that reduces the amount of vehicle driving across the region. ABAG/MTC has identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC project that this strategy will cost \$1 billion. ABAG/MTC states they will seek new revenues and/or increased funding for climate and travel demand management needs. They will restructure ABAG/MTC's Climate Initiatives Program to ensure it can effectively scale over the next five years, while advancing existing initiatives including local parking policies, curb management, targeted transportation alternatives, mobility hubs, vanpooling, car sharing, and bikeshare and e-bike incentive programs. TDM is relatively fragmented across the region so ABAG/MTC will convene local governments, TDM partners, and employers to expand and foster relationships, target outreach, develop metrics, share data, and identify shared goals and will coordinate an agency-wide, cross-sectional approach for

operational TDM programs to increase equity, efficiency and effectiveness and support a shared regional vision for TDM.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that the RTP/SCS does not include commitments from public agencies, businesses, and TDM partners on implementing this strategy at the assumed levels and buy-in are uncertain. Additionally, ABAG/MTC's assumptions may have overestimated the benefits. For example, the car sharing strategy assumes a high 14 percent participation rate in the urban areas (i.e., areas with at least ten people per residential acre) . 3 percent participation rate in suburban areas (i.e., areas with less than ten people per residential acre), and 7 miles VMT reduction per member per day. These assumptions are based on a study of willingness to join a carsharing program in Texas, which is not applicable to the Bay Area region

Another example is the targeted transportation alternatives in which the benefits might be double counted toward its 2035 GHG target with expanded commute trip reduction programs at major employers. The high 33 percent penetration rate for employees may not be achieved because the value of time for people living in the ABAG/MTC region is significantly higher than the \$4.34 per person outreach. Further, these assumptions are based on studies conducted outside of California. In addition, ABAG/MTC should revisit the assumption that behavioral changes will persist for 5 years and whether multiplying VMT benefits by 5 is appropriate.

Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that new revenues or expanded funding is needed to support strategy implementation at the assumed levels, which is uncertain.

Analysis Results Summary

CARB staff found that the 2021 SCS transportation strategies are supported by region-specific funding and planning program actions, as well as through direct planned investments in the project list adopted with the 2021 SCS. In particular, the 2021 SCS includes several positive project commitments that align with the Bay Area

region's SCS land use strategy and help advance GHG emission reductions. As part of the project list adopted with ABAG/MTC's 2021 SCS, CARB staff found multi-modal projects that are intended to improve transit, bike, and walk options in the region by the 2035 target year. Examples include:

- Improvements to regional transit systems such as BART through frequency upgrades (\$5.3 billion) and rail service expansions to Santa Clara "Silicon Valley Phase II" (\$10.1 billion), as well as Caltrain through improvements and modernizations to the system (\$5.76 billion).
- Seamless mobility enhancements through the deployment of a smartphone app for trip planning, payment, and real-time passenger information (\$3.4 billion) and a streamlined regional transit fare structure (\$10 billion).
- Regional complete streets network investments such as new and extended bike and pedestrian facilities; bicycle and/or pedestrian facility gap closures; road diets; ADA compliance; landscaping; lighting; streetscape improvements; secure bike parking at transit stations; and support to local jurisdictions to maintain and expand car-free, slow streets. Example projects include the Bay Trail (MUL), Bay Skyway (SF), Better Market Street (SF), East Bay Greenway (ALA), and Urban Greenways and Trails (ALA) (\$12.7 billion).
- Regional vision zero active transportation safety project investments such as railroad/highway crossing improvements; warning devices; shoulder improvements; traffic control devices other than signalization; guardrails, median barriers and crash cushions; pavement markings; fencing; skid treatments; lighting improvements; widening narrow pavements with no added capacity; changes in vertical and horizontal alignment; transit safety, communications and surveillance systems; truck climbing lanes outside urban areas; and emergency truck pullovers (\$4.2 billion).
- Regional transportation demand management initiatives such as the Bay Area Commuter Benefits Program, vanpool programs, bikeshare and carshare services, targeted transportation alternatives programs, and a regional parking fee program that discourages single-occupancy vehicle trips and supports the use of other travel modes (\$1 billion).

In addition to CARB staff's evaluation of the strategies and supporting actions, CARB staff also evaluated the extent to which the SCS includes capacity-increasing projects that induce travel⁴⁰ and therefore increase VMT/GHG emissions. CARB staff found that

⁴⁰ Induced travel is a phenomenon caused by roadway expansion that increases VMT when drivers reroute from congested roads to longer, uncongested roads, shift from alternative modes to driving, or make more frequent trips. Road expansion projects can also lead to long-term induced travel in the region if households and businesses move to more distant locations or if development patterns become

the 2021 SCS includes billions of dollars in funding for road capital projects, including new general purpose, high-occupancy vehicle, auxiliary lanes, and interchange expansion projects. Road capital projects increase capacity, especially those that counter the SCS's long-term vision for accommodating new growth, increasing VMT, and working against achieving the State's climate and air quality goals.⁴¹ Even managed lanes that are intended to offer priority access to people using transit, carpooling, or vanpooling, risk inducing additional VMT without firm commitments to limit use by SOV drivers for the facility's life.

As part of the SCS submittal, ABAG/MTC analyzed the anticipated short-term and long-term effects on VMT due to the roadway capacity expansion projects within the SCS using the integrated land use and travel demand model. This approach uses the feedback mechanism between land use and transportation system in the region. The land use model forecasts where people live and work (household locations and businesses) and feeds into the travel demand model to determine the accessibility of those locations through the transportation system. This process estimates the long-term and short-term impact of new roadway facilities and/or land development that influences location choices, vehicle ownership, and changes such as the number of trips, mode choice, and travel routes.

ABAG/MTC's final SCS envisions a network of managed lanes produced through a mix of high-occupancy vehicle lane conversions, general-purpose lane conversions, and widenings where conversions are deemed infeasible. Based on ABAG/MTC's induced travel analysis, the region's VMT from all roadway changes may have increased up to 2 percent. However, the level of detail provided in the analysis was insufficient; hence, CARB staff could not provide the induced travel impact by roadway type.

CARB staff reviewed ABAG/MTC's approach to capturing the short-and long-term VMT/GHG impacts of its 2021 SCS roadway capacity expansion projects and found the approach to be reasonable for quantifying the aggregate effects on SCS performance. However, for the next SCS, ABAG/MTC should evaluate and discuss the VMT impacts of individual capacity projects in comparison with the aggregate analysis used for the SCS. The results of this effort could be used to further refine how ABAG/MTC assesses the VMT impacts of capacity projects on its SCS.

While CARB staff's analysis supports a conclusion that ABAG/MTC's 2021 SCS would meet the target, when implemented, CARB staff has significant concerns that ABAG/MTC's SCS transportation strategies may not be realized at the assumed levels

more dispersed in response to the capacity increase. Induced travel is critical to analyze as it can affect VMT and GHG emissions.

⁴¹ CARB. Highway Capacity and Induced Travel Brief. (September 2014).

or within the timeframe anticipated. CARB staff is especially concerned about the region's ability to fund and deliver the transit and active transportation projects that are needed to support the 2021 SCS planned outcomes, as ABAG/MTC repeatedly acknowledges the need to secure new funding to support these strategies. Support for transit and active transportation projects is important given the fact that the region wants to overcome recent declines in transit ridership and increase transit ridership in the region by 114 percent and increase bike and pedestrian lane miles by 2,220 miles compared to its 2015 level. Delays or removals of transit and active transportation projects will prevent ABAG/MTC from meeting its regional targets, especially given the inclusion of roadway capacity-increasing projects that are expected to increase VMT and GHGs. ABAG/MTC will need to be vigilant about monitoring implementation and deployment levels of strategies, including how projects are prioritized, through 2035 to ensure planned reductions and SB 375 goals are achieved.

Local and Regional Pricing Strategy Commitments

ABAG/MTC has included two pricing strategies in the 2021 SCS. These strategies include implementing per-mile tolling on congested freeways with transit alternatives and building an integrated regional express lane and express bus network. These strategies seek to put a price on driving in the region in the following ways:

- Charging a fee based on use of express toll lanes.
- Charging a per-mile fee to operate vehicles in designated freeway corridors.
- Charging a fee to park in job centers (This is a subcomponent of the Expand Transportation Demand Management Initiatives strategy described in the transportation strategies section).

These strategies are projected to decrease driving and congestion, increase transit, walking, and biking, and improve road/highway conditions. These strategies also generate revenue that can be used to invest in transportation strategies in the SCS. ABAG/MTC estimates these strategies will contribute to approximately 11.27 percent⁴² of its total per capita GHG emission reductions.

SCS Planned Outcomes

These strategies translate into assumptions about changes to the cost of transportation options, specifically, the cost to drivers for the use of the roadway

⁴² Pricing strategies are aggregated with other on-model strategies. Only a portion of the reduction would come from pricing strategies.

network in the region by 2035.⁴³ Specifically, the plan assumes the following outcomes:

- Starting in 2021, there is a projected decrease in congestion through tolling on express lanes. Tolls are envisioned to range between 3 cents to \$1.32 dollars per mile, varying by time of day for passenger vehicles with one or two passengers that choose to utilize express lanes. By 2035, the number of toll lanes will increase to 3,610 lane miles from 44 lane miles in 2015. The RTP/SCS assumes 600 of those miles will be express lanes.
- Starting in 2030, there is a projected decrease in congestion and increase in transit, walking, and biking through a per-mile fee on select freeway corridors shown in Figure 9. The per-mile fee is envisioned to range between 5 and 15 cents per mile, varying by vehicle occupancy and time of day, with a 50 percent discount on travel for drivers with incomes under the regional median.
- Starting in 2035, there is a projected decrease in driving and increase in transit use, walking, and biking by increasing parking fees that would range from 25 to 50 cents per hour in all growth geographies.

The planned express lanes and per-mile tolls throughout the region are shown in Figure 9.

⁴³ This subsection includes information based on the data table and compares transportation indicators from the 2015 base year to 2035. Fee information and timeframe assumptions were taken from the ABAG/MTC's Final Technical Methodology, and the 2021 RTP/SCS Technical Assumptions Report.

Figure 9. Highway and Pricing Investments



Source: ABAG/MTC, 2021 RTP/SCS

Supporting Actions

Per the 2019 Evaluation Guidelines, CARB staff checked for evidence that appropriate funding, other incentives, technical assistance, or other key actions were present to support the assumed local and regional pricing strategies in the SCS. In particular, CARB staff looked for alignment against the project list adopted with the 2021 SCS to see whether the actions are planned and funded within the target timeframe. CARB staff also considered whether ABAG/MTC identified other region-specific funding or programs to support the implementation of its pricing strategies. In addition, CARB staff looked for whether and how ABAG/MTC considered equity, which is a key implementation concern for pricing strategies.

The following section includes CARB staff's summary of ABAG/MTC's 2021 SCS local and regional pricing strategy commitments and associated supporting action and investments.

Build an Integrated Regional Express Lanes and Express Bus Network

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes the complete buildout of the express lanes network to provide uncongested freeway lanes for new and improved express bus services, carpools, and toll-paying solo drivers. Where possible, this strategy would convert existing carpool or general-purpose lanes to express lanes. ABAG/MTC project that this strategy will cost \$9 billion. An estimated \$4.3 billion in new revenue is assumed to be generated from this strategy through 2050. ABAG/MTC states they will advocate for changes to state law and federal regulations that will expand opportunities to convert general-purpose and part-time travel lanes to priced facilities. They will also continue and seek greater strategic alignment of existing programs, including the express lanes network expansion, and follow the recommendations of the Bay Area Express Lanes Strategic Plan⁴⁴, which will guide future network investments, priorities, and policies. They will also implement the bus transit priority and connected network planning recommendations of the Blue Ribbon Transit Recovery Task Force that align with the goals of an expanded express bus network. ABAG/MTC states that they only have authority for a portion of the express lanes network, so a

⁴⁴ MTC adopted the Bay Area Express Lanes Strategic Plan in April 2021, For more information visit: [Connecting the Bay Area \(ca.gov\)](https://www.ca.gov).

partnership with county transportation authorities and transit operators will be essential to the success of integrated regional express lanes and express bus network. Although not all financial resources are secure, the express lanes are projected to generate a limited amount of net revenue.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that this program will not be implemented within the identified timeframe or at the assumed levels, because this strategy as ABAG/MTC's RTP/SCS acknowledges, requires State enabling legislation to repurpose general-purpose lanes to priced facilities. Additionally, CARB is concerned that because this strategy requires local support and buy-in from public agencies, non-profit stakeholders, and the public regarding pricing, it is unclear whether implementation would reach assumed levels.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources and technical assistance. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

Implement Per-Mile Tolling on Congested Freeways with Transit Alternatives

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy assumes a per-mile charge starting in 2030 on auto travel on select congested freeway corridors where transit alternatives exist, with discounts for carpoolers, low-income residents, and off-peak travel, and it reinvests excess revenues into transit alternatives in the corridor. Toll rates are estimated 15 cents per mile for solo travel in peak periods and 5 cents per mile for travelers in discount categories above. On corridors where per-mile tolling is proposed, existing express lanes would convert to per-mile tolling facilities. ABAG/MTC project that this strategy will cost \$1 billion. Between 2030 and 2050, the RTP/SCS horizon year, an estimated \$25 billion in new revenue is assumed from this strategy. ABAG/MTC has identified this strategy as having a high impact on achieving the GHG

reduction target. To support this strategy, ABAG/MTC mentions the need to continue implementation of existing programs, including FasTrak® START, HOV occupancy verification pilots, and express lanes, while considering strategic implications of all-lane tolling. ABAG/MTC has received a grant from Caltrans to lead the Next-Generation Freeways Study⁴⁵ to advance the freeway all-lane tolling concept. To support this strategy, they also want to identify strategies to equitably advance roadway pricing on congested freeways through technical analysis and deep engagement with key partners, stakeholders, and the public. ABAG/MTC states that they do not currently have the authority to implement this strategy, that state legislation would be required, and federal regulations would need to be updated as well. ABAG/MTC states that there is also an opportunity to learn from existing work led by partners. In addition to Caltrans' Road Charge program, the City and County of San Francisco are leading multiple relevant initiatives, including the Treasure Island and Yerba Buena Island Mobility Management (Tolling) Program, as well as the Downtown Congestion Pricing Study.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that this program will not be implemented within the identified timeframe or at the assumed levels, because this strategy requires congressional and State enabling legislation. Additionally, CARB is concerned that because this strategy requires local support and buy-in from public agencies, non-profit stakeholders, and the public regarding pricing, it is unclear whether implementation would reach assumed levels.

Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy on reducing GHG emissions.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

⁴⁵ The Next Generation Bay Area Freeways Study will explore how pricing and other strategies could transform the Bay Area's freeway network into a modern network with reliable transportation options. For more information visit: [Next Generation Bay Area Freeways Study | Metropolitan Transportation Commission \(ca.gov\)](#).

Parking Pricing (Component of Expand Transportation Demand Management Initiatives)

Estimated GHG Emission Reductions 2035: Strategy contributes an unknown amount to the total -11.27 percent reduction from all on-model strategies as ABAG/MTC did not provide a specific proportion for this particular strategy.

Supporting Actions and Investments: This strategy is a component of the Expand Transportation Demand Management Initiative strategy. This strategy assumes a regional parking pricing program where employers cease to subsidize parking at the workplace and that parking costs are increased in all Growth Geographies ranging from 25 cents to 50 cents per hour; where parking costs are currently nonzero and in transit-rich areas, parking rates are assumed to increase by 25 percent. ABAG/MTC project that this strategy will cost \$1 billion. Between 2035 and 2050, an estimated \$13 billion in new revenues is assumed from this strategy. ABAG/MTC has identified this strategy as having a high impact on achieving the GHG reduction target. ABAG/MTC will lead an evaluation of authority and implementation options for a regional parking pricing program, which they say may present unique and specific challenges related to overall public and political support. ABAG/MTC will also restructure MTC's Climate Initiatives Program to ensure it can effectively scale over the next five years, while advancing existing initiatives including local parking policies and curb management.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that because this strategy requires local support and buy-in from public agencies, businesses, and the public regarding removal of pricing subsidies and parking pricing. The RTP/SCS does not include commitments from those responsible for implementing this strategy and the MPO does not have authority. I, it is unclear whether implementation would reach assumed levels.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources. However, CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

CARB staff found that the 2021 SCS local and regional pricing assumptions are supported by some region-specific funding and planning program actions, as well as through some direct investments in the project list adopted with the 2021 SCS. In particular, the 2021 SCS project list includes some express lane corridor projects for funding by 2035 that ABAG/MTC assumed when quantifying the SCS's GHG benefits in 2035.

The SCS also identifies several initial supporting actions to support its pricing strategies further. For example, ABAG/MTC has received a grant from Caltrans to lead the Next-Generation Freeways Study to advance the per-mile fee freeway all-lane tolling concept, including a significant outreach and engagement component with county and city officials and a wide range of other stakeholders. The study is expected to explore how road pricing can benefit travelers by addressing the inequities built into the current system and by decreasing traffic congestion. The study will also look at how to pair the strategy with complementary investments, as well as how the strategy may affect the viability of other ABAG/MTC projects, such as express lanes and toll bridges. However, ABAG/MTC acknowledges they require enabling legislation, which is not guaranteed, and it is not clear that ABAG/MTC is sponsoring legislation at this time. As a result, CARB is concerned that this strategy may not be fully implemented.

In addition to its evaluation of the strategies and supporting actions, CARB staff also looked for whether and how ABAG/MTC considered equity when developing its pricing strategies. CARB staff found that ABAG/MTC's work to implement pricing strategies will include efforts to address and advance equity through pricing discounts for low-income residents and through reinvesting revenues generated from pricing toward improving transit, which supports low-income residents, seniors, youth, and people with disabilities. ABAG/MTC will also continue engagement with stakeholders and the public around pricing strategies.

While CARB staff's analysis supports a conclusion that ABAG/MTC's 2021 SCS would meet the target, when implemented, CARB staff has significant concerns that some pricing strategies will not be implemented as planned through the 2035 timeframe and will not achieve its planned outcome benefits such as around encouraging the use of more sustainable travel options, managing congestion, as well as generating revenue to expand travel options and achieving its GHG reductions. CARB staff acknowledges the significant leadership and partnership work needed to realize the 2021 SCS pricing strategies and is concerned because the SCS does not include commitments from those responsible for implementing these strategies (e.g., county transportation authorities, transit agencies, local jurisdictions, and private companies) and the MPO does not have the authority. Furthermore, for some of the pricing strategies, ABAG/MTC acknowledges they require enabling legislation for implementation, which is not guaranteed, and it is not clear that ABAG/MTC is sponsoring legislation at this time. Supporting actions that more squarely address these implementation steps need to be identified and implemented to achieve the

emission reductions assumed in the 2021 SCS. ABAG/MTC will need to demonstrate further progress to implement these strategies by its next plan cycle for ABAG/MTC to continue receiving the full amount of GHG emission reductions assumed.

Electric Vehicle Strategy Commitments

ABAG/MTC has included one strategy related to electric vehicles (EV): expand clean vehicle initiatives. This strategy seeks to accelerate the penetration of EVs in the region by providing infrastructure and incentives to help drivers switch to using EVs. This strategy will result in a total of 5.05 percent reduction in per capita GHG emissions.

SCS Planned Outcomes

These strategies translate into assumptions about the availability of EV-supportive infrastructure and incentives that will serve the region by 2035.⁴⁶ Specifically, the plan assumes the following outcomes:

- Funding for subsidies and rebates for 630,000 purchases of new EVs (both PHEVs and BEVs) .
- Funding for installation of 42,692 public EV chargers for plug-in electric vehicles. Each charger has two charging plugs (only PHEVs).

Supporting Actions

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

The following section includes CARB staff's summary of ABAG/MTC's 2021 SCS EV and new mobility strategy commitments and associated supporting actions and investments.

⁴⁶ This subsection includes information-based assumptions from ABAG/MTC's Technical Methodology, Strategies Table 2, Off-Model Calculations, and Off-Model Trip and Emissions Data documentation.

Expand Clean Vehicle Initiatives (Regional Electric Vehicle Chargers and Vehicle Buyback & Electric Vehicle Incentives)

Estimated GHG Emission Reductions 2035: Strategy contributes -4.12 percent reduction for the Vehicle Buyback and Electric Vehicle Incentives and -0.93 percent reduction for the Regional Electric Vehicle Chargers, as calculated off-model.

Supporting Actions and Investments: This strategy includes investments in clean vehicles, including more fuel-efficient vehicles and electric vehicle subsidies and chargers. It supports expanding the adoption of clean vehicles through purchase incentives and deployment of charging and fueling infrastructure in partnership with the Bay Area Air Quality Management District and the State. ABAG/MTC have identified this strategy as having a high impact on achieving the GHG reduction target. Investments would expand existing strategies in ABAG/MTC's Climate Initiatives Program, which include investing in a vehicle buyback and electric vehicle incentives initiative and a regional electric vehicle charger initiative. ABAG/MTC project that this strategy will cost \$5 billion. ABAG/MTC states that they will seek new revenues and/or increased funding to support climate and electrification needs. They will also restructure ABAG/MTC's climate initiatives program to ensure it can effectively scale over the next five years, while advancing existing initiatives to support electric vehicle incentives and electric vehicle charger programs. ABAG/MTC states they have partial authority, resources, and capacity to implement this strategy.

CARB Staff Analysis:

Actions Identified: Yes. However, CARB staff is concerned that this strategy is expected to cost \$5 billion and would require new or increased funding sources that are uncertain. The RTP/SCS does not include commitments from public agencies, property owners, and non-profit partners for implementing EV incentives and EV chargers at the assumed levels. Additionally, ABAG/MTC's assumptions may overestimate the GHG reductions from the EV chargers sub-strategy. It is assumed that a) from 2023, the majority of new chargers will become operational; and b) all EVs in the region could operate at maximum eVMT percentage (80 percent eVMT) with access to adequate supportive charging infrastructure. These key assumptions should be justified by funding and data. ABAG/MTC provided limited EV infrastructure location information and travel behavior data in the SCS. ABAG/MTC should provide details about regional incentive programs, including the available number of charging stations, who implements the programs, the rebate amounts, and who can receive these rebates/incentives.

Implementation of this strategy will be critical to achieving the target, as ABAG/MTC has identified this as a high-impact strategy for reducing GHG emissions.

Funding in the RTP/SCS Project List: Yes.

ABAG/MTC Other Resources Available: Yes. ABAG/MTC has identified resources and technical assistance. However, CARB staff is concerned that this strategy will not be fully implemented and realize the anticipated emission reductions.

Analysis Results Summary

CARB staff found that ABAG/MTC'S 2021 SCS EV strategy assumptions are supported by some region-specific funding and planning program actions, as well as through some planned investments in the project list adopted with the 2021 SCS.

While, CARB staff's analysis in this section supports a conclusion that ABAG/MTC's 2021 SCS would meet the target, when implemented CARB staff is concerned that the strategy will not be fully implemented and realize the anticipated emission reductions because the SCS does not include commitments from those responsible for implementing this strategy a, and has not identified full funding to support implementation at the assumed level. ABAG/MTC will need to be vigilant about monitoring and implementing the electric vehicle subsidies and chargers through 2035 and adjusting as necessary to ensure planned reductions and SB 375 goals are achieved.

Looking across all four policy analysis categories, CARB staff's analysis found that ABAG/MTC's 2021 SCS includes evidence of policy commitments for its strategies, that when implemented would meet the target. However, areas of concern for CARB staff are that many strategies still require funding sources, legislative authority, and program development to be implemented.

Investment Analysis

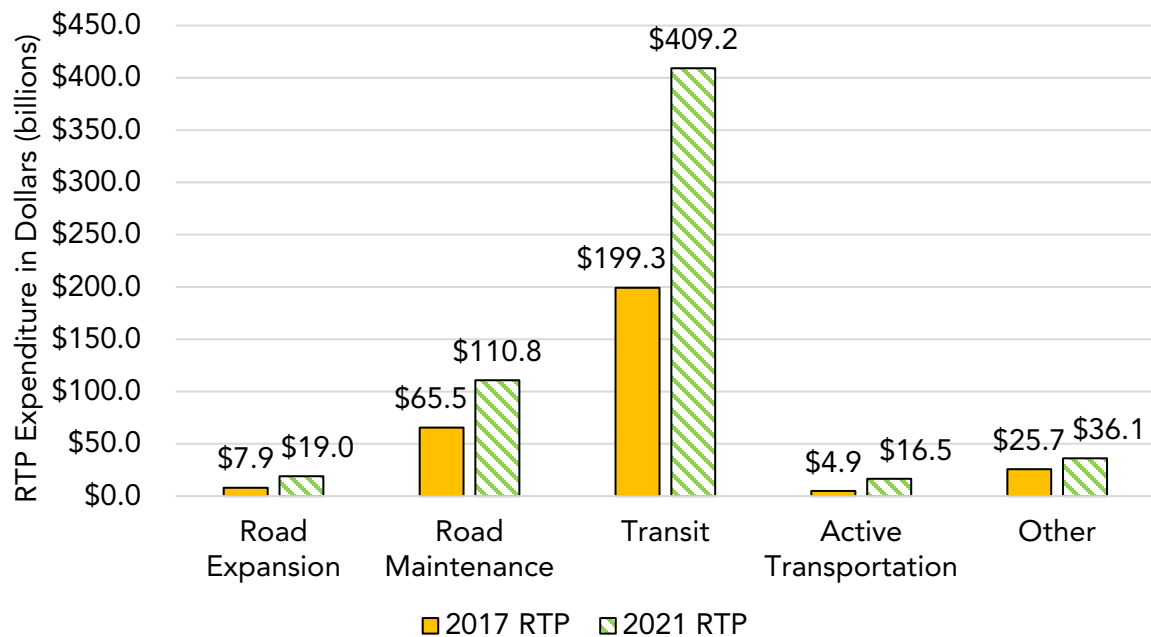
CARB staff evaluated whether the 2021 investments support the expected GHG emission reductions, by looking for evidence within the project list adopted with the 2021 RTP/SCS for commitments to funding SCS-consistent projects by 2035. CARB staff also qualitatively assessed the risk of delay to delivering projects that advance SCS goals based on assumed available funding sources.

Based on CARB staff's review of ABAG/MTC's project list, CARB staff found that the 2021 SCS includes several projects in the project list for funding that would advance implementation of the RTP/SCS, as discussed in the "Policy Analysis" section of this

report. For example, ABAG/MTC is increasing funding for transit and active transportation modes.

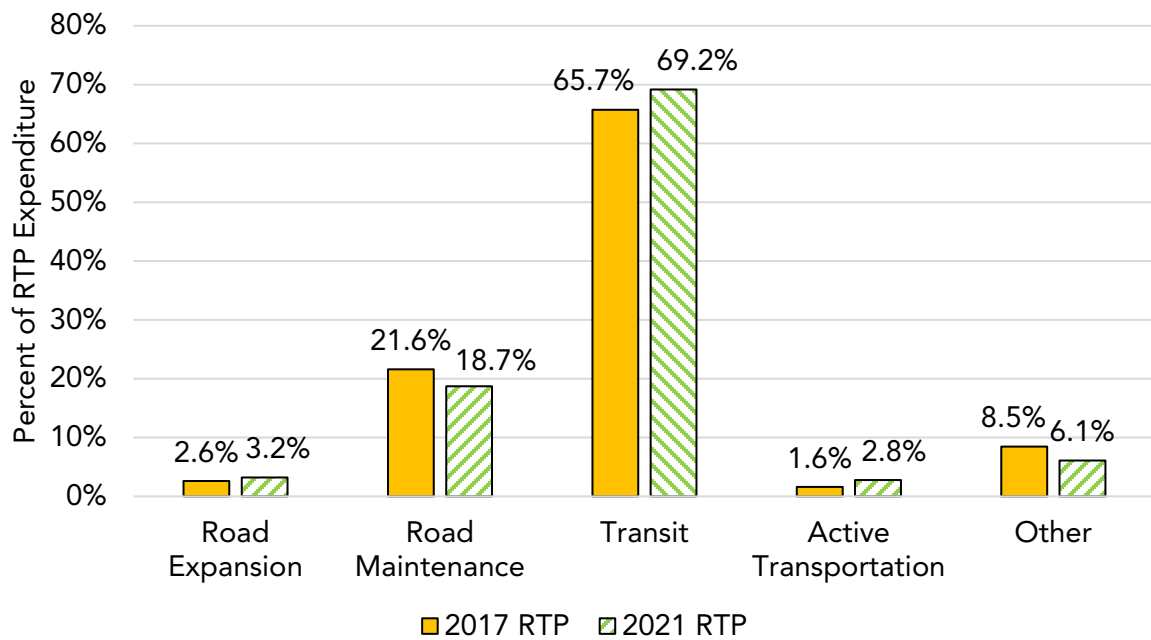
A comparison between the 2017 and 2021 RTP/SCS investments by mode are shown in Figure 10 and Figure 11. Total spending increases sharply by nearly 95 percent, to approximately \$591.5 billion compared to approximately \$303.3 billion in the 2017 RTP/SCS. Of the total budget, approximately 22 percent is dedicated to road expansion, operations, and maintenance; 69 percent is for capital, operations, and maintenance for transit; 3 percent is dedicated to active transportation; and the remaining 6 percent is for transportation demand management, transportation systems management / intelligent transportation systems, and other investments such as grants to support focused growth, EV chargers, etc. Approximately 19 percent (\$110.8 billion) is dedicated to operations and maintenance, which increases from \$65.5 billion in the 2017 RTP/SCS. The budget for transit (capital projects and operation and maintenance) increases 105 percent to \$409.2 billion from \$199.3 billion between the 2021 and 2017 SCSs, respectively. Lastly, planned investments for active transportation increases 240 percent to \$16.5 billion dollars from \$4.9 billion in the last RTP/SCS.

Figure 10. Investment by Mode in ABAG/MTC’s 2021 RTP/SCS Compared to the 2017 SCS (\$ millions year of expenditure)



Source: Plan Bay Area 2050/ Plan Bay Area 2050: Final Plan Submittal, Table 1.

Figure 11. Investments by Mode in ABAG/MTC’s 2021 RTP/SCS Compared to the 2017 SCS (Percent of Total Investment)



Source: Plan Bay Area 2050/ Plan Bay Area 2050: Final Plan Submittal, Table 1.

CARB staff appreciates the increase in planned expenditure for transit, which is well aligned with ABAG/MTC’s assumptions around increased transit ridership and forecasted declines in VMT and GHG emissions. However, CARB staff is concerned with the risk of delivering SCS-supportive projects on the project list by 2035, due to the need for new revenues or increased funding for numerous SCS strategies as identified by ABAG/MTC. As shown in Table 2, the majority of investments are going toward transit, which is supportive of SCS implementation. However, planned expenditures for transit and active transportation projects prior to 2035 (i.e., 2021-2035) are not necessarily associated with any firm funding sources, and fully funding these strategies would rely in part on revenue from sources yet to be secured.

Table 2. ABAG/MTC SCS Investment Breakdown by Expenditure Category and Fiscal Year⁴⁷.

Expenditure Category	FY 2021-2035 (B\$)	FY 2036-2050 (B\$)	Total (B\$)
Road Expansion	\$8,530 (4%)	\$5,941 (2%)	\$14,471
Road Maintenance	\$44,300 (6%)	\$66,450 (19%)	\$110,750
Transit	\$153,434 (66%)	\$255,718 (71%)	\$409,152
Active Transportation	\$6,592 (3%)	\$9,889 (3%)	\$16,481
Other	\$19,959 (9%)	\$20,682 (6%)	\$40,641

Source: ABAG/MTC Response to CARB Final Plan Submittal Review

The whole 2021 RTP/SCS is expected to cost \$1.4 trillion. The plan relies on approximately \$780 billion in new revenues⁴⁸. As a result, a focus on new revenues and generating revenues is needed to support the plan’s strategies. ABAG/MTC state they will collaborate with partners to advocate for financial resources, whether from federal, state, regional or local sources.

The 2021 RTP/SCS does include new revenue assumptions from pricing strategies. Of the new revenue assumed,⁴⁹ \$25 billion from 2030 to 2050 is from the per-mile fee of select freeway corridors strategy. The transportation demand management initiatives strategy parking pricing component would generate \$13 billion from 2035 to 2050. Additionally, revenue generated from express lanes is approximately \$21 billion⁵⁰ from 2021 to 2050 (\$4.6 billion would be generated exclusively from new express lanes). Investment of these funds is not yet programmed toward specific projects, but ABAG/MTC anticipates these to support some of the SCS transportation and EV strategies.⁵¹ While commitment of these potential funds toward SCS-supportive projects is helpful, CARB staff remains concerned that if the SCS pricing strategies are delayed or not implemented, and other funding sources do not become available, transit and active transportation projects envisioned to be constructed between 2021 and 2035 will not be delivered on time or at all.

⁴⁷ Notes: \$ amounts in billions. Figures may not sum to 100% due to rounding. Other includes managed express lanes.

⁴⁸ ABAG/MTC, 2021 RTP/SCS, pdf page 158.

⁴⁹ This section refers to investment information provided in ABAG/MTC’s 2021 RTP/SCS Technical Assumptions Report.

⁵⁰ This includes regional express lane network revenue from BAIFA, service authority for freeway and expressways revenue, county managed express lane revenue, and new express lane revenue.

⁵¹ ABAG/MTC, 2021 RTP/SCS.

In addition, ABAG/MTC includes revenue assumptions around the Cap-and-Trade Program auction proceeds. Specifically, ABAG/MTC assumes the region will get \$11.7 billion from Cap-and-Trade proceeds.⁵² This forecast is based on current funding levels. ABAG/MTC assumes annual growth to be flat or slightly increasing for FY 2036-2050. CARB staff is concerned with these assumptions, as these dollars would be applied to support SCS implementation but are also not firm funding amounts, as some program dollars are competitive, and total amounts available vary by time period.

Overall, CARB staff finds that the 2021 RTP/SCS project investments support the implementation of the 2021 SCS strategies and achievement of the SCS's estimated GHG reduction benefits, if implemented. However, CARB staff have identified considerable risk to delivery of SCS-supportive projects on the project list by 2035, as they are not associated with any firm funding, particularly due to reliance on new funding sources.

Plan Adjustment Analysis

The plan adjustment analysis evaluates whether and what measures are being taken, as necessary, to correct course to meet an MPO's target if the region is falling behind on the implementation of its SCS strategies. CARB staff reviewed the implementation of ABAG/MTC's previous RTP/SCS to date using observed land use and transportation system data.⁵³ CARB staff found that ABAG/MTC is not on track to achieve its previous 2017 RTP/SCS planned outcomes for 2020 and 2035. Observed land use and travel data for the region shows declines in transit ridership even before the pandemic and significant unrealized new development within infill areas in the region, which are inconsistent with the trends and values assumed in the 2017 RTP/SCS to meet the region's GHG reduction targets. In addition, the 2021 RTP/SCS assumes that transit ridership will be 17.7 percent higher than the 2017 RTP/SCS did, increasing the challenge. Given this, CARB staff looked for evidence that ABAG/MTC's 2021 RTP/SCS considered these challenges and either changed its SCS strategies or put additional measures in place to accelerate the implementation of its SCS strategies to stay on track to meet its GHG reduction target.⁵⁴

⁵² ABAG/MTC, 2021 RTP/SCS Technical Assumptions Report. This includes funding assumptions for Affordable Housing and Sustainable Communities, Cap and Trade Goods Movement, Low Carbon Transit Operations, and Transit and Intercity Rail.

⁵³ See "Tracking Implementation" section of Appendix C: MPO Reporting.

⁵⁴ See "Incremental Progress" section of Appendix C: MPO Reporting for ABAG/MTC's assessment of how changes to its SCS strategies between the 2017 SCS and 2022 SCS contributed to achievement of its 2035 target.

ABAG/MTC has made substantial changes to its strategies between its 2017 and 2021 RTP/SCSs, with wide-ranging strategy additions and revisions compared to prior iterations. ABAG/MTC added new strategies, modified strategy assumptions, and refined transportation investments. CARB staff's review of the 2021 RTP/SCS found that ABAG/MTC builds upon and expands land use and transportation strategies established over several planning cycles. ABAG/MTC also included several new strategies in the plan, such as preserving existing affordable housing, further strengthening renter protections beyond state law, building adequate, affordable housing to ensure homes for all, transforming aging malls and office parks into neighborhoods, reforming regional transit fare policies, enabling a seamless mobility experience, implementing per-mile tolling on congested freeways with transit alternatives, advancing a regional vision zero policy through street design, reduced speeds, and more. These new strategies are intended to help ABAG/MTC address climate change and racial inequity.

While observed trends since the 2017 RTP/SCS show transit ridership decreasing, ABAG/MTC adjusted the plan's transit ridership assumptions to be more aggressive and added supporting actions focused on investments in new transit service, including major investments in new and improved regional rail and express bus lines. The 2021 RTP/SCS reflects adjustments to the land use and transportation network that directionally align with updated growth forecasts sufficient to house the region's 6th cycle RHNA plan allocations paired with new strategies in the 2021 RTP/SCS to implement shorter trips, more travel options, enhanced TDM strategies, regional EV incentive and charger programs, and pricing strategies that are anticipated to also support the region's GHG reductions. Taken as a whole, these adjustments suggest that the region is further diversifying the strategies it plans to use to help meet the region's more aggressive 2035 target. Specifically, CARB observed the following policy changes and adjustments to ABAG/MTC's 2021 RTP/SCS compared to its 2017 RTP/SCS.

Land Use and Development

- The 2021 RTP/SCS made major changes to its housing and land use strategies integrating significant new affordable housing strategies aligned with the creation of the Bay Area Housing Financing Authority recent years. These strategies help to make headway on the region's housing crisis, which also contributes to long commutes and higher greenhouse gas emissions. Strategies to intensify Priority Development Areas from the 2017 RTP/SCS were expanded to include additional Growth Geographies namely, state-identified Transit-Rich and High-Resource Areas necessary to achieve the GHG target without further contributing to displacement pressures.

Transportation

- Transportation investments in transit, bicycle, and pedestrian infrastructure were significantly increased compared to the 2017 RTP/SCS.
- The 2021 RTP/SCS made significant changes to its transportation strategies, both in terms of new strategies and refined transportation investments. New strategies included all-lane tolling on freeways with complementary transit, speed limit reductions (e.g., 55 mph regional maximum for smoother, lower GHG traffic flows), and new strategies for transit fares and timed transfers, among others.
- Transit assumptions were adjusted for the 2035 target year. Transit ridership increased from 3,059,500 to 3,602,000 average daily boardings (17.7 percent) between the 2017 RTP/SCS and 2021 RTP/SCS. Justification for this increase is attributed to the significant focus on transit improvements
- Transit operational miles in 2035 increase from about 430,000 to 502,000 (% 16.7 percent) between the 2017 RTP/SCS and 2021 RTP/SCS.
- Bike and pedestrian lane miles were not modeled explicitly in the 2017 RTP/SCS but have been modeled in the 2021 RTP/SCS. Bike and pedestrian lane miles are expected to increase by 5,500 miles compared to 2005 levels of 3,280 miles for a total of 8,780 miles for the 2035 target year.

Pricing

- ABAG/MTC added one new pricing strategy and carried over two pricing strategies to generate revenue, reflect the true cost of driving, and help support VMT reduction by motivating drivers to consider more sustainable options.
- To support its new road pricing strategy, ABAG/MTC is working on a Next-Generation Bay Area Freeways Study, a multi-pronged effort to explore freeway pricing mechanisms and complementary strategies through robust public engagement, simulation modeling, and financial analysis. The study is slated to conclude in 2023.

Electric Vehicles and New Mobility

- The 2021 RTP/SCS carries forward some EV strategies from its 2017 RTP/SCS related to electric vehicle initiatives.
- A new electric vehicle incentive program supported by \$5.09 billion through 2035 is included to incentivize an estimated 630,000 PHEV and BEV through 2035.
- A regional electric vehicle charging program of \$173.7 million through 2035 has been expanded, compared to the 2017 RTP/SCS, which included only \$76 million for this program through 2035. This investment would incentivize approximately 42,692 chargers and 85,384 charging plugs by 2035.

CARB staff finds that the 2021 RTP/SCS shows evidence of changes and adjustments made that are intended to help meet the region's more aggressive targets and are based on lessons learned from the previous RTP/SCS.

CARB's Determination

ACCEPT

(WITH SIGNIFICANT CONCERNS REGARDING IMPLEMENTATION)

Based on a review of all available evidence and in consideration of CARB's 2019 Evaluation Guidelines, CARB staff accepts ABAG/MTC's determination that its 2021 SCS would meet the target of a 19 percent reduction by 2035, compared to 2005 levels, when fully implemented. CARB staff's policy evaluation of the 2021 SCS concludes that the plan includes: sufficiently supportive indicator trends; near-term policy support actions; active transportation, transit, and other SCS-supportive project investments; and adjustments in response to observed implementation challenges that when fully implemented, will lead the Bay Area region to achieve its 2035 GHG reduction target.

CARB staff commends ABAG/MTC and its member jurisdictions for continuing its innovative thinking and leadership in adopting new pathways for the region to address smart growth and increase mobility choices in its 2021 SCS. The region's addition of new programs and commitments to accelerate housing, per mile tolling on congested freeways tied to transit alternatives, and transportation demand management initiatives like parking fees in the 2021 SCS, demonstrates leadership on strategies that can help provide mobility benefits to residents and achieve the region's GHG target. In addition, CARB staff commend the region's inclusion of an implementation plan within the RTP/SCS, which represents an effort to advance the complete suite of strategies included in the plan by beginning to identify for the region needed implementation actions, timelines, implementation vehicles, and partnerships by strategy area.

As ABAG/MTC's implementation plan appropriately points out, the 2021 SCS puts forward policy ideas and investment proposals that could bring about the needed transformation of the region into a more climate-friendly and equitable place to live, work and play, but none of the plan's strategies can be implemented by ABAG/MTC alone. Partnership and collaboration with policy makers at all levels of government and the public will be needed to realize the timely achievement of the plan's assumptions. In other words, while ABAG/MTC's plan forecasts bold changes to how the region will travel by 2035, there is a high amount of uncertainty that the strategies can or will be implemented as described.

For example, ABAG/MTC lacks authority and financial resources to carry out many SCS strategies related to land use and housing and pricing. Many of these are highly ambitious. For instance, by assuming that all jurisdictions will adopt rent caps and inclusionary housing measures, and that local planning efforts to intensify growth occur by 2035 in all PDAs, the SCS does not leave a margin of error to account for a

certain number of challenges that will inevitably arise. Additionally, the Implementation Plan makes clear that substantial new revenue is needed to support implementation of the plan's strategies. Furthermore, it is evident that strategies and projects needed to support GHG emission reductions are expected to be implemented close to the 2035 target year, meaning that delays or unexpected challenges to securing the funding and or legislative authority to implement them could lead to missing the target.

While ABAG/MTC identifies near-term and on-going actions that support the successful implementation of the SCS to achieve the GHG reduction benefits for the Bay Area region and, ultimately, successful achievement of SB 375's goals to ensure California can meet its statewide climate commitments, ABAG/MTC and its local members will need to undertake additional actions in the long-term to deliver and monitor its SCS strategies, as well as quickly adjust its strategies if some actions are not fully realized. To address these concerns, CARB staff has the following recommendations and requests ABAG/MTC set up regular monitoring of the implementation actions associated with its SCS strategies in consultation with CARB and other relevant agencies.

Recommendations

Prioritize Funding for Transportation Projects that Advance SCS Implementation and Goals

CARB staff applauds the region for its significant investment in transit and increased investment in active transportation. ABAG/MTC's investment and revenue plan is ambitious. In implementing this plan, we recommend that the Bay Area region prioritize funding projects that strongly advance SCS goals immediately and in the next few years, and delay or re-imagine projects that no longer fit the region's SCS strategies. ABAG/MTC could build on its existing project selection process to support local projects that are critical to implementing high impact strategies that reduce VMT and GHG in seeking early funding that can accelerate their implementation whenever possible. For example, when applying to programs that have criteria designed to support SCS implementation, such as the Solutions for Congested Corridors Program (SCCP) and the Trade Corridor Enhancement Program (TCEP) under SB 1, ABAG/MTC could apply for funding that will support growth in priority growth geographies (which include priority development areas, priority production areas, transit-rich areas, and high-resource areas) that foster lower VMT.

The Bay Area region could also build on its track record of using its local sales tax funds to advance the region's SCS implementation and help to support both the region's and the State's ability to meet their respective climate and air quality targets. Future local sales tax measures in the region could consider how to continue building on this momentum, as well as limit funding for road capital projects that risk increasing

VMT. Over the past decades, Bay Area cities and counties have enacted various local transportation sales taxes to help themselves, and voters have approved three regional measures to generate billions of dollars for a much-needed transportation project. These measures list specific projects, locking them in for years or decades. Often, these measures do not fully fund their listed projects and go on to capture a region's otherwise-flexible State and federal funds. Within the Bay Area region, some of these measures have been supportive of SB 375 goals, while other projects have not. Prioritizing projects that decrease VMT is more important than ever to achieve the region's GHG reduction targets and SB 375's goals. From now on, CARB recommends that investments focus on, and fund in the near term, transit, active transportation, transportation electrification, and increasing mobility options that discourage solo driving and increase multimodal options to reduce VMT. Because of their greater flexibility, sales tax measures offer unique opportunities to tailor funding sources to the region's SCS strategies.

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

CARB staff appreciates ABAG/MTC's Vital Signs⁵⁵ initiative that tracks data and monitors trends related to land use, transportation, the economy, the environment, and social equity to identify successes and where the region is falling short. ABAG/MTC should continue to track and report to CARB on implementation of all strategies in its SCS, including off-model strategies, and provide data-supported metrics to assess them. CARB staff encourages ABAG/MTC to track the implementation of new and existing programs and actions to help inform ABAG/MTC, its member agencies, and the public on what strategies are performing well, what strategies could be adjusted, or if strategies could be removed and what additional actions or resources are needed. This will also help inform what types of projects and investments the region could consider making to achieve the SB 375 GHG emission reduction targets. Vital Signs performance metrics should be more closely tied to SCS strategy outcome assumptions. For example, as the 2021 SCS includes many SCS strategies related to housing affordability, ABAG/MTC could use Vital Signs to monitor what programs local jurisdictions are implementing to preserve affordable housing and provide rental protections (e.g., track how many existing affordable units are retained or at risk of being lost and what type of rental protections jurisdictions are implementing). Additionally, ABAG/MTC could use Vital Signs to monitor development permits in key growth geographies (e.g., track housing permits, where rezonings to higher densities are occurring, and where affordable housing units are

⁵⁵ For more information see: [Vital Signs | Association of Bay Area Governments \(ca.gov\)](#)

constructed in priority growth areas, major projects, public and community-owned lands, and aging malls and office parks) to understand if these SCS strategies are being realized.

ABAG/MTC will need to be vigilant about monitoring the balance of transportation projects through 2035 to ensure planned reductions are achieved. Delays or removals of VMT-reducing transportation projects could prevent ABAG/MTC from meeting its GHG emission reduction target. CARB staff recommends that amendments to the project list be accompanied by recalculation and discussion of whether and how SCS target achievement can be maintained.

Accelerating Infill to Further SCS Implementation and Goals

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

There are many State funding opportunities available for local jurisdictions in support of actions that will further SCS implementation. Examples of funding sources include Regional Early Action Planning (REAP) Grants of 2021,⁵⁶ Affordable Housing and Sustainable Communities (AHSC), Transformative Climate Communities (TCC), Infill Infrastructure Grant Program (IIG), and Permanent Local Housing Allocation under SB 2. In addition, ABAG/MTC could partner with HCD to provide technical assistance to members around implementation of Affirmatively Furthering Fair Housing⁵⁷ and Annual Progress Reports,⁵⁸ and support keeping growth out of sensitive areas, for

⁵⁶ For information about REAP visit <https://www.hcd.ca.gov/regional-early-action-planning-2021>.

⁵⁷ For more information about AFFH visit: [Affirmatively Furthering Fair Housing | California Department of Housing and Community Development](#)

⁵⁸ For more information about APRS visit: [Annual Progress Reports | California Department of Housing and Community Development](#)

example, by encouraging local members to pursue Sustainable Agricultural Lands Conservation Program funding to protect agricultural lands.⁵⁹

State and Regional Partnership on Pricing Strategies

ABAG/MTC has shown leadership in putting forward a mix of pricing strategies that when integrated with the region's transportation and land use vision, will support the achievement of the 2021 SCS goals. To succeed with these strategies, ABAG/MTC will need to collaborate closely with State partners at Caltrans and CalSTA, local partners, non-profits and the public to ensure the successful implementation of the pricing mechanisms. However, CARB staff remains concerned that if the SCS pricing strategies are delayed, amended in a way that reduces anticipated benefits, or not implemented, transportation projects envisioned to be constructed between 2030 and 2035 will not be delivered as anticipated, on time, or at all. CARB expects ABAG/MTC to show progress on implementation of these strategies in its next SCS to continue receiving credit for the full GHG emission reductions assumed in this 2021 SCS.

Improve Modeling and Data

ABAG/MTC's activity-based travel demand model is an integrated land use and transportation model that has a feedback mechanism. It is one of the first integrated travel demand models used by California MPOs to understand the long-term impacts of land use and transportation changes in the region. Therefore, it requires continuous improvements as a new transportation system and behavioral change data emerge. CARB staff recommends that ABAG/MTC improve the model capacity to incorporate the impacts of autonomous vehicles on network performance, travel demand, and vehicle-sharing systems. CARB also recommends that ABAG/MTC expands its model capabilities to understand the long-term impacts of telecommuting on housing and job locations, vehicle choices, and travel behavior change.

Improve GHG Benefit Estimates for Off-model Strategies

ABAG/MTC states that it has used conservative assumptions to quantify GHG emission reductions from the off-model strategies. However, it may have overestimated by double counting the benefits of strategies such as expanding transportation demand management initiatives (e.g., car share and targeted transportation alternatives) and expanding clean vehicle initiatives (e.g., regional electric vehicle incentives and chargers) by using assumptions not supported by local data. While the degree to

⁵⁹ For more information about SALC visit: [Sustainable Agricultural Lands Conservation Program \(SALC\) \(ca.gov\)](https://www.sustainableaglandscap.org/)

which this may be overestimated is not large enough to make CARB staff believe the GHG emission reduction estimates would not meet the targets, the accuracy of these estimates should be improved in the next SCS. CARB staff recommends that ABAG/MTC use assumptions supported by evidence through local data for all strategies. Strategy development should consider the existing level of participation and implementation status and be tracked for future implementation. ABAG/MTC should be more specific in the next SCS about how strategies such as targeted transportation initiatives and vehicle buyback/electric vehicle purchase incentives can secure the necessary funding sources and how its policy commitments align with its quantification assumptions and plan outcomes. CARB staff expects ABAG/MTC to provide more details on how supporting actions are consistent with and reflected through strategy deployment assumptions in the next SCS to continue to fully support the GHG benefits claimed for these strategies by ABAG/MTC. For more information, refer to the “Policy Analysis” section.

EV Benefits

CARB recently adopted the Advanced Clean Cars II Regulations, which requires all new passenger cars, light-duty trucks, and SUVs sold in California to be zero emissions.⁶⁰ SB 375 law excludes counting of emissions reductions from State programs that improve vehicle emissions standards, changes in fuel composition, and other State measures that reduce GHG emissions toward demonstration of regional target achievement. Therefore, as ABAG/MTC prepares its next SCS, it should work with CARB to appropriately account for any emission reductions associated with clean vehicle strategies in the region.

Analyze Induced Travel Demand

ABAG/MTC has included several road expansion projects in its 2021 SCS and applied an integrated land use and travel demand modeling approach to assess the long-term effect of induced travel. While this approach is among the most advanced travel demand modeling techniques in California, CARB staff recommends that ABAG/MTC continue to explore the modeling processes and further improve the long-term induced travel demand analysis. For example, ABAG/MTC may want to clearly allocate the spatial areas of induced and reduced VMT due to individual expansion projects in a map and/or provide high-resolution performance metrics to better describe the changes brought by the expansion projects. Further, this will improve the capability to analyze the impact of land use policies such as smart growth strategies, transit-oriented development, and bike/pedestrian-friendly developments on travel demand.

⁶⁰ <https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program>

Appendix A: ABAG/MTC's 2021 SCS Strategy Table

This is a summary table based on ABAG/MTC's submittal that compares the key land use and transportation strategies between the 2017 and 2021 SCSs. This table also illustrates how GHG emissions were estimated for each strategy.

Category: 2021 SCS Strategy Name	Analysis Type	Estimated GHG Emission Reduction in 2035
<p><i>Land Use & Housing:</i></p> <p><u>New Strategy in 2021 SCS</u></p> <ul style="list-style-type: none"> • Further Strengthen Renter Protections Beyond State Law • Preserve Existing Affordable Housing • Build Adequate Affordable Housing to Ensure Homes for All • Transform Aging Malls and Office Parks into Neighborhoods • Accelerate Reuse of Public and Community-Owned Land for Mixed-Income Housing and Essential Services • Expand Job Training and Incubator Programs • Provide Incentives to Employers to Shift Jobs to Housing-Rick Areas Well Served by Transit • Retain and Invest in Key Industrial Lands* • Adapt to Sea Level Rise <p><u>Carryover Strategy from 2017 SCS</u></p> <ul style="list-style-type: none"> • Allow a Greater Mix of Housing Densities and Types in Growth Geographies • Integrate Affordable Housing into All Major Housing Projects • Allow Greater Commercial Densities in Growth Geographies • Maintain Urban Growth Boundaries <p><i>Transportation:</i></p> <p><u>New Strategy in 2021 SCS</u></p> <ul style="list-style-type: none"> • Enable a seamless Mobility Experience • Reform Regional Transit Fare Policy 	<p>On-Model</p>	<p>-11.27%</p>

Category: 2021 SCS Strategy Name	Analysis Type	Estimated GHG Emission Reduction in 2035
<ul style="list-style-type: none"> • Advance Regional Vision Zero Policy through Street Design and Reduced Speeds • Expand Commute Trip Reduction Programs at Major Employers <p><u>Carryover Strategy from 2017 SCS</u></p> <ul style="list-style-type: none"> • Restore Operate and Maintain the Existing System • Improve Interchanges and Address Highway Bottlenecks • Advance Other Regional Program and Local Priorities • Build a Complete Streets Network • Enhance Local Transit Frequency, Capacity, and Reliability • Expand and Modernize the Regional Rail Network • Expand Transportation Demand Management Initiatives <p><i>Local & Regional Pricing:</i></p> <p><u>New Strategy in 2021 SCS</u></p> <ul style="list-style-type: none"> • Implement Per-Mile Tolling on Congested Freeways with Transit Alternatives <p><u>Carryover Strategy from 2017 SCS</u></p> <ul style="list-style-type: none"> • Build an Integrated Regional Express Lanes and Express Bus Network • Parking Pricing (Component of Expand Transportation Demand Management Initiatives) 		
<p><i>EV & New Mobility:</i> <u>Carryover Strategy from 2017 SCS</u></p> <p>Expand Clean Vehicle Initiatives</p>	Off-Model	-5.05%
<p><i>Transportation:</i> <u>Carryover Strategy from 2017 SCS</u></p> <p>Expand Transportation Demand Management Initiatives</p>	Off-Model	-3.73%
Total Reduction	N/A	20%

Notes:
N/A means not available.

Appendix B: Data Table

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Modeled Population ⁽²⁾	6,979,000	7,581,000	N/A	9,167,000	10,368,000	Travel Demand Model Input
Vehicle Operating Costs (year 2000 \$/mile)	\$0.1487	\$0.1373	N/A	\$0.1585	\$0.1744	Travel Demand Model Input
Average Toll Price (year 2000 \$/mile) Total tolls ⁽³⁾ paid/VMT, autos only	\$0.6090	\$0.9489	N/A	\$1.3439	\$1.3025	Travel Demand Model Input
Average Median Household Income (year 2000 \$/year)	\$74,200	\$80,200	N/A	\$83,700	\$84,300	Travel Demand Model Input
Total Number of Households	2,499,000	2,701,000	N/A	3,495,000	4,043,000	Travel Demand Model Input
Total Number of Jobs	3,576,000	3,861,000	N/A	4,835,000	5,409,000	Travel Demand Model Input
Total Developed Acres	Not modeled	1,302,000	N/A	1,327,000	1,333,000	Travel Demand Model Input/ GIS
Total Housing Units	2,583,000	2,862,000	N/A	3,644,000	4,220,000	Travel Demand Model Input
Total Single-Family Housing Units (du)	1,637,000	1,849,000	N/A	1,861,000	1,927,000	Travel Demand Model Input
Total Multi-Family Housing Units (du)	946,000	1,013,000	N/A	1,783,000	2,293,000	Travel Demand Model Input

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Net Residential Density (dwelling units/acre) Regional Total	Not modeled	0.60	N/A	0.78	0.91	Travel Demand Model Input
Net Residential Density (dwelling units/acre) Place Type 1: Big Three Cities	Not modeled	4.69	N/A	6.38	7.97	Travel Demand Model Input
Net Residential Density (dwelling units/acre) Place Type 2: Bayside, Cities & Towns	Not modeled	2.46	N/A	3.32	3.70	Travel Demand Model Input
Net Residential Density (dwelling units/acre) Place Type 3: Inland, Coastal, Delta Cities & Towns	Not modeled	1.73	N/A	2.15	2.40	Travel Demand Model Input
Net Residential Density (dwelling units/acre) Place Type 4: Unincorporated Areas	Not modeled	0.08	N/A	0.09	0.09	Travel Demand Model Input/GIS
Total Housing Units Within ½-Mile of a Transit Station or Stop	Not modeled	2,576,000	N/A	3,357,000	3,888,216	Travel Demand Model Input/GIS
Total Employment Within ½-Mile of a Transit Station or Stop	Not modeled	3,787,000	N/A	4,583,000	5,078,444	Travel Demand Model Input/GIS
Freeway and General	5,020	5,110	N/A	2,190	2,220	Travel Demand Model Input

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Purpose Lanes, Mixed-Flow, auxiliary, etc., (lane miles)						
Freeway Toll Lanes (lanes miles)	3	44	N/A	3,610	3,660	Travel Demand Model Input
Freeway HOV Lanes (lane miles)	390	470	N/A	120	130	Travel Demand Model Input
Arterial/Expressway (lane miles)	9,580	9,750	N/A	9,780	9,810	Travel Demand Model Input
Collector (lane miles)	5,490	5,500	N/A	5,520	5,520	Travel Demand Model Input
Average Transit Headway (minutes) (i.e., weighted (by time period length) of transit line headways)	59.2	76.6	N/A	62.7	60.7	Travel Demand Model Input
Total Transit (Operation) miles (i.e., transit vehicle miles)	346,000	324,000	N/A	502,000	557,000	Travel Demand Model Input
Transit Total Daily Vehicles Service Hours (i.e., transit vehicle hours)	19,100	17,900	N/A	25,400	27,100	Travel Demand Model Input
Bike and Pedestrian Lane (Class I, II, & IV) miles	3,280	Not modeled	N/A	Base year + 5,500	Base Year + 11,500	Travel Demand Model Input
Average Household Vehicle Ownership	1.73	1.82	N/A	1.73	1.66	Travel Demand Model Output
Average Trip Length	6.2	6.3	N/A	6.3	5.9	Travel Demand Model Output

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
(Miles/trip)						
Drive Alone Trip Length (miles/trip)	8.0	8.0	N/A	7.5	7.2	Travel Demand Model Output
Shared Ride Trip Length (miles/trip)	5.9	6.0	N/A	6.3	6.0	Travel Demand Model Output
Public Transit Trip Length (miles/trip)	9.2	8.9	N/A	10.7	10.6	Travel Demand Model Output
Bike & Walk Trip Length (miles/trip)	1.0	1.0	N/A	1.2	1.3	Travel Demand Model Output
Commute Trip Travel Time (Minute)	20.0	20.0	N/A	23.0	23.0	Travel Demand Model Output
Non-Commute Trip Travel Time (Minute)	13.0	13.0	N/A	14.0	14.0	Travel Demand Model Output
Drive Alone Travel Time (Minute)	14.7	15.0	N/A	16.8	16.7	Travel Demand Model Output
Drive Alone (TNC) (includes taxi) Travel Time (Minute)	16.5	15.3	N/A	15.4	15.7	Travel Demand Model Output
Shared Ride Travel Time (Minute)	11.8	12.2	N/A	14.3	14.4	Travel Demand Model Output
Shared Ride (pooled TNC)	N/A	19.1	N/A	19.0	19.0	Travel Demand Model Output
Public Transit Travel Time (Minute)	36.1	35.9	N/A	37.0	36.8	Travel Demand Model Output
Bike Travel Time (Minute)	11.0	11.0	N/A	10.9	10.5	Travel Demand Model Output
Walk Travel Time (Minute)	17.0	17.0	N/A	16.7	16.5	Travel Demand Model Output
Average Travel Time for Low-income (<\$60K in \$2000 household income)	15.1	15.5	N/A	17.6	17.5	Travel Demand Model Output

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Populations (minutes)						
Drive Alone Mode Share (%)	45.0%	45.8%	N/A	41.7%	40.2%	Travel Demand Model Output
Drive Alone (TNC) Mode Share (%)	0.7%	1.5%		1.6%	1.8%	Travel Demand Model Input
Shared Ride Mode Share (%)	33.7%	31.6%	N/A	29.1%	27.1%	Travel Demand Model Input
Shared Ride (pooled TNC) Mode Share (%)	N/A	0.6%	N/A	0.7%	0.9%	Travel Demand Model Input
Public Transit Mode Share (%)	5.3%	5.6%	N/A	9.1%	9.4%	Travel Demand Model Output
Bike Mode Share (%)	2.2%	2.2%	N/A	4.7%	7.0%	Travel Demand Model Output
Walk Mode Share (%)	13.1%	12.7%	N/A	13.1%	13.6%	Travel Demand Model Output
Transit Seat Utilization (passenger miles/ seat miles)	N/A ⁽⁴⁾	0.32	N/A	0.48	0.43	Travel Demand Model Output
Transit Ridership (Average daily boardings)	1,442,000	1,687,000	N/A	3,602,000	4,128,000	Travel Demand Model Output
Total VMT per weekday (all vehicle classes) (miles)	141,211,000	156,834,000	N/A	169,769,000	188,864,000	Travel Demand Model Output
Total VMT per weekday for passenger vehicles (CARB vehicle classes LDA, LDT1, LDT2, and MDV) (miles)	128,505,000	143,815,000	N/A	156,083,000	172,745,000	Travel Demand Model Output

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Total II VMT per weekday for passenger vehicles (miles)	108,323,000	122,129,000	N/A	132,077,000	146,498,000	Travel Demand Model Output
Total IX/XI VMT per weekday for passenger vehicles (miles)	20,124,000	21,623,000	N/A	23,938,000	26,176,000	Travel Demand Model Output
Total XX VMT per weekday for passenger vehicles (miles)	57,400	63,600	N/A	67,300	71,100	Travel Demand Model Output
SB 375 VMT per capita	18.3	18.8	N/A	17.4	17.1	Calculated: (II + IX/XI passenger VMT)/population
Total CO2 emissions per weekday (all vehicle class) (tons/day)	74,787	78,995	N/A	54,146	59,107	EMFAC Model Output
Total SB375 CO ₂ emissions per weekday for passenger vehicles (CARB vehicle classes LDA, LDT1, LDT2, and MDV) (tons/day)	60,430	65,295	N/A	70,436	78,602	EMFAC Model Output
Total II CO ₂ emissions per weekday for passenger vehicles (tons/day)	50,940	55,449	N/A	59,603	66,659	EMFAC Model Output
Total IX/XI CO ₂	9,470	9,817	N/A	10,803	11,910	EMFAC Model Output

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
emissions per weekday for passenger vehicles (tons/day)						
Total XX CO ₂ emissions per weekday for passenger vehicles (tons/day)	20	29	N/A	30	32	EMFAC Model Output
SB 375 CO ₂ per capita (lbs./day)	17.3	17.2	N/A	15.4	15.2	Calculated: (II + IX/XI CO ₂)/population/ 2000 lbs./ton
EMFAC Adjustment Factor	N/A	N/A	N/A	N/A	N/A	CARB Methodology for Estimating CO ₂ Adjustment
Plan Strategy EN8 Initiative EN8a: Regional Electric Vehicle Chargers	N/A	N/A	N/A	-0.93%	-0.88%	MPO Estimated
Plan Strategy EN8 EN8b: Vehicle Buyback & Electric Vehicle Incentives	N/A	N/A	N/A	-4.12%	-0.56%	MPO Estimated
Plan Strategy EN9 Initiative EN9a: Bike Share	N/A	N/A	N/A	-0.02%	-0.02%	MPO Estimated
Plan Strategy EN9 Initiative EN9b: Car Share	N/A	N/A	N/A	-2.43%	-2.42%	MPO Estimated
Plan Strategy EN9 Initiative EN9c: Targeted Transportation	N/A	N/A	N/A	-1.11%	-0.96%	MPO Estimated

Modeling Parameters	2005	2015 (Base Year)	2020 ⁽¹⁾	2035	2050 (Horizon Year)	Data Source
Alternatives						
Plan Strategy EN9 Initiative EN9d: Vanpools	N/A	N/A	N/A	-0.17%	-0.14%	MPO Estimated

- (1) Please note that 2020 was not modeled as part of Plan Bay Area 2050 due to 2020 being an anomalous year in terms of economic activity and travel behavior due to the COVID-19 pandemic. For more information about how the Bay Area achieves the 2020 greenhouse gas emissions target, please see the Final Technical Methodology report.
- (2) Synthesized population is generally consistent with the Plan Bay Area 2050 Regional Growth Forecast.
- (3) Tolls include bridges, cordon pricing, and all-lane tolling on congested freeways with transit alternatives.
- (4) Transit vehicles not configured for 2005 run, so seat capacity is unknown.

Appendix C: MPO Reporting Components

This section will focus on discussing the three reporting components of the 2019 Evaluation Guidelines: tracking implementation, incremental progress, and equity. The three reporting components are included to identify the effectiveness of prior SCS implementation and increase overall transparency of the SCS for the public and other stakeholders. These reporting components will demonstrate the efforts put forward by MPOs and the progress made towards meeting their SB 375 GHG targets but are not used for purpose of the SCS determination.

Tracking Implementation

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

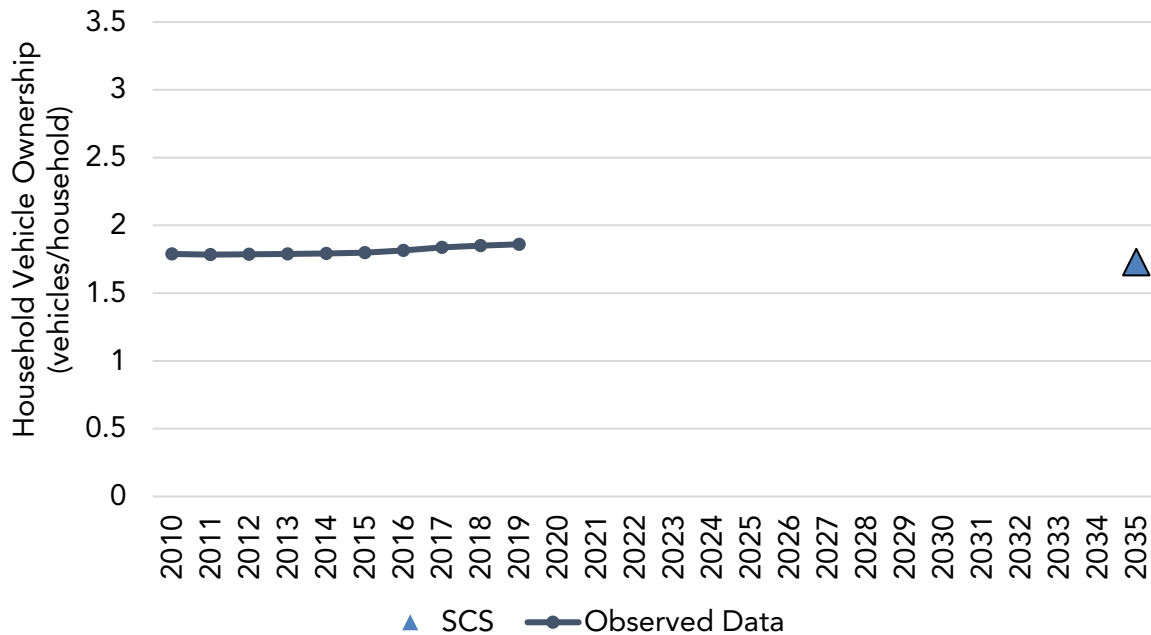
Regional Average Household Vehicle Ownership

CARB staff analyzed household vehicle ownership trends for ABAG/MTC from 2010 to 2019. This indicator reports the average number of private vehicles owned by each household in the ABAG/MTC region (i.e., the total number of household vehicles divided by the number of households). Privately-owned vehicle and household data for 2005 to 2019 at the county level were obtained from the American Community Survey (ACS) reports⁶¹ and the Department of Finance,⁶² respectively. Figure 12 shows historical ABAG/MTC average household vehicle ownership from 2010 to 2019 compared to ABAG/MTC's 2035 forecasted household vehicle ownership from its travel demand model (See Appendix B: Data Table). The observed average household vehicle ownership shows a steadily increasing trend. It has increased by 4 percent in the ABAG/MTC region from 2010 to 2019. However, the forecasted 2035 SCS household vehicle ownership is 7 percent below the observed 2019 household vehicle ownership, and the trend in observed data is heading in the wrong direction relative to the expected plan outcome for 2035. The observed household vehicle ownership trend indicates that ABAG/MTC has not implemented enough strategies to be on track to meet the anticipated plan performance.

⁶¹ U.S. Census Bureau, American Community Survey, 2005 – 2019 [ACS 1-year Estimates](#).

⁶² Department of Finance, [Demographics](#).

Figure 12. ABAG/MTC Region Average Household Vehicles



Notes: 2020 SCS data are not available.

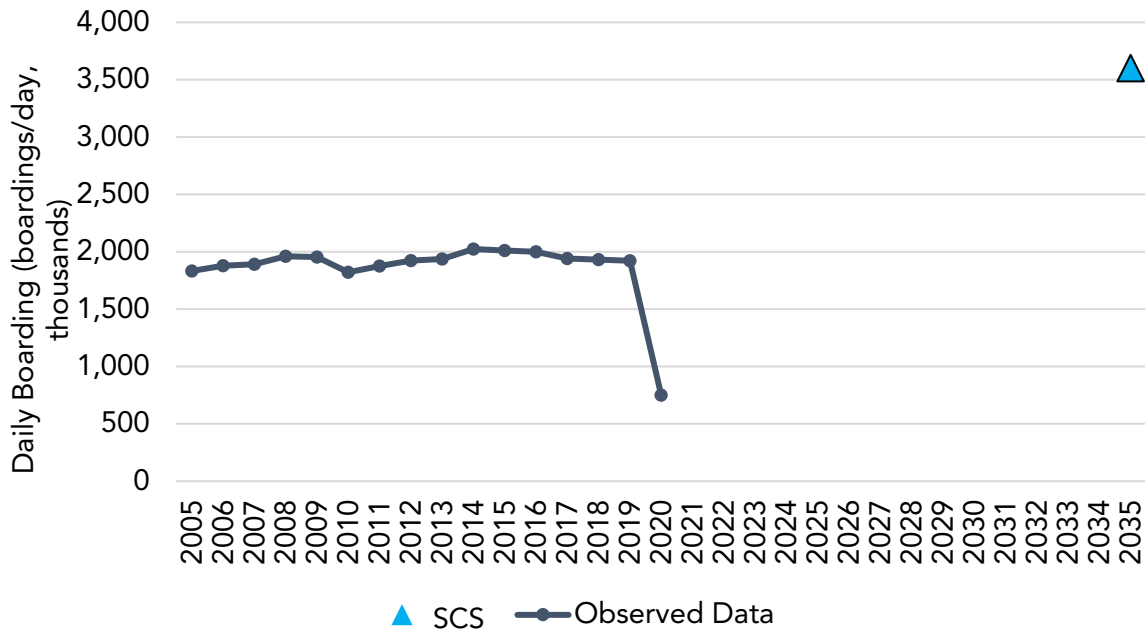
Annual Transit Ridership

Transit ridership is a critical metric that can reflect people’s travel patterns in a region. The National Transit Database (NTD)⁶³ publishes monthly transit boarding numbers (unlinked trips) reported by local transit agencies. CARB staff analyzed the monthly boarding numbers from this database and calculated the daily boarding numbers for ABAG/MTC region from 2005 to 2020.

Figure 13 shows observed annual transit ridership in the ABAG/MTC region compared to the plan performance anticipated in 2035. The observed data shows that transit ridership is slowly increasing from 2005 to 2019, with a sharp decrease in 2020 due to the pandemic, while ABAG/MTC’s RTP/SCS forecasted transit ridership in 2035 is 87 percent higher than the observed 2019 value. The observed transit ridership trend indicates that ABAG/MTC has not implemented enough strategies to be on track to meet the anticipated plan performance.

⁶³ [Federal Transit Authority: The National Transit Database. Accessed 09/01/2022](#)

Figure 13. ABAG/MTC Region Annual Transit Ridership

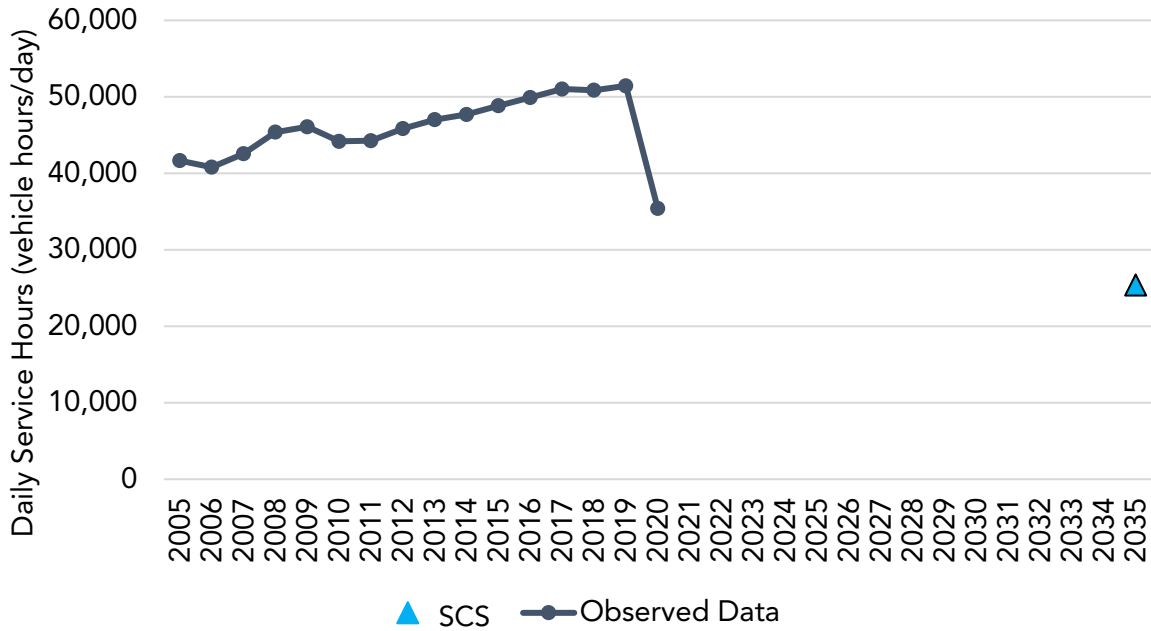


Notes: 2020 SCS data are not available.

Daily Transit Service Hours

Transit service hour indicates the time from the first passenger pick-up until the last passenger drop-off, excluding driver work breaks. This metric describes a region’s public transit supply and whether the public transit system is expanding in a given area. The NTD publishes monthly revenue hours reported by local transit agencies. CARB staff analyzed ABAG/MTC daily service hours from 2005 to 2020. CARB staff then calculated the per capita transit revenue hours based on total transit revenue hours and regional population from the DOF. Observed NTD transit revenue hours increased from 2005 to 2019, as shown in Figure 14. However, CARB staff observed transit revenue hours forecasted by ABAG/MTC to be less than the observed data. According to ABAG/MTC staff, current and future funding availability and service levels continue to evolve. Therefore a conservative approach is used to represent transit services in the 2021 RTP/SCS. The observed transit service hours trend indicates that ABAG/MTC is on track to meet the anticipated plan performance.

Figure 14. ABAG/MTC Daily Transit Service Hours



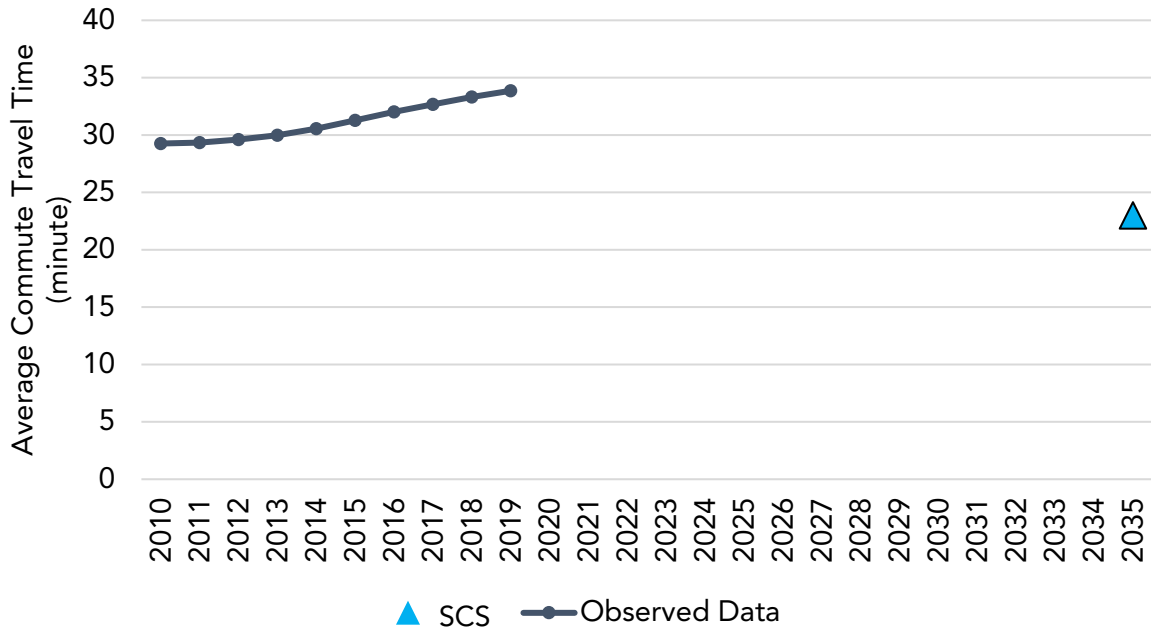
Notes: 2020 SCS data are not available.

Commute Trip Travel Time

CARB staff analyzed commute trip travel times from 2010 to 2019 using the American Community Survey data.⁶⁴ A population-weighted approach was used to calculate total travel times by county and then aggregated to the ABAG/MTC region. Figure 15 shows the historical commute time compared to the forecasted ABAG/MTC’s average commute time. ABAG/MTC forecasts a 23-minute one-way commute travel time in 2035, while the observed data indicates an increase in commute time over the last decade, away from the expected plan outcomes. The observed commute travel time trend shows that ABAG/MTC has not implemented enough strategies to be on track to meet the anticipated plan performance.

⁶⁴ U.S. Census Bureau, [American Community Survey](#).

Figure 15. ABAG/MTC Commute Time



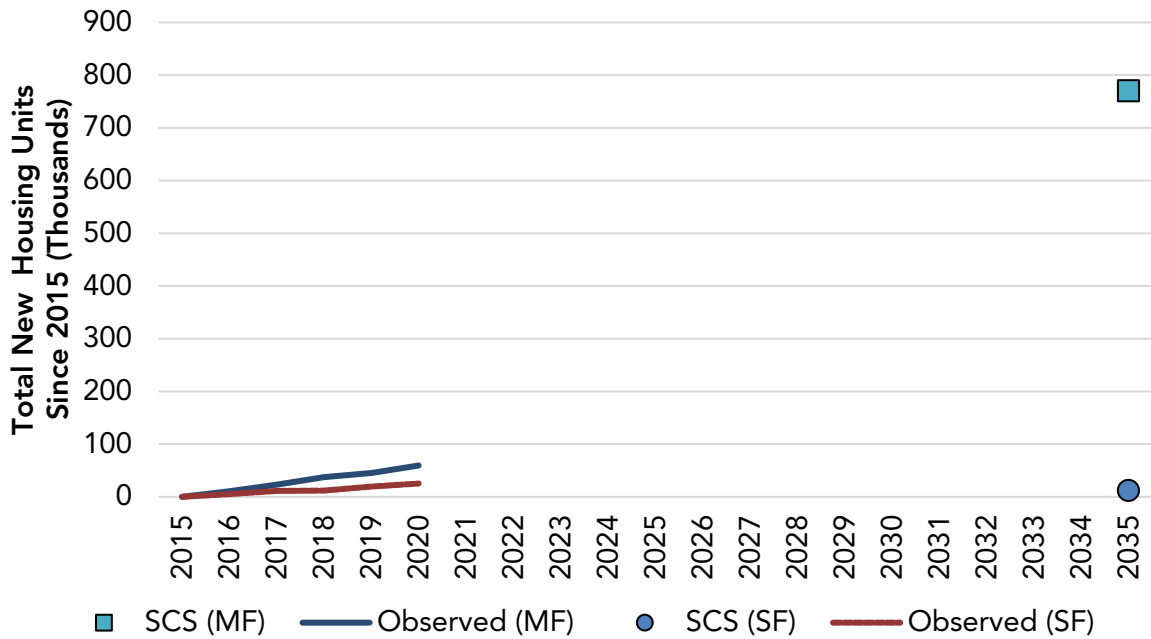
Notes: 2020 SCS data are not available.

New Homes Built by Type

CARB staff analyzed the rate of new homes being built by type in the ABAG/MTC region from 2005 to 2020 using the California DOF datasets, including E-5 (for years 2011 to 2020) and E-8 (for years 2005 to 2010).⁶⁵ Figure 16 shows the number of new single-family (SF) and multi-family housing units (MF) built in the ABAG/MTC region from 2015, with over 25,000 new SF and over 60,000 new MF housing units. The 2021 RTP/SCS forecasts 12,000 new SF housing units and 770,000 new MF housing units to be built by 2035, with MF housing units representing a greater share of housing than SF housing units. The observed new homes built by type trend shows that ABAG/MTC has not implemented enough strategies to be on track to meet the anticipated plan performance.

⁶⁵ California Department of Finance, [rate of new homes being built by type](#).

Figure 16. New Single- and Multi-Family Housing Units Built in the ABAG/MTC Region



In summary, CARB staff compared the observed data for regional average household vehicle ownership, annual transit ridership, daily transit service hours, commute trip travel time, and new homes built by type with ABAG/MTC’s projected plan performance indicators. Based on the analysis, except for daily transit service hours, the observed data of other metrics are heading in the wrong direction toward the expected plan outcomes. Therefore, CARB staff concluded that ABAG/MTC is not heading in the right direction relative to expected plan outcomes and needs to implement the strategies in the RTP/SCS to meet its GHG target.

Incremental Progress

CARB staff reviewed the incremental progress of ABAG/MTC's 2021 RTP/SCS compared to its 2017 RTP/SCS in accordance with Board direction and the 2019 Evaluation Guidelines.⁶⁶ As background, during the 2018 regional GHG target update process, some of the MPOs reported to CARB that, due to external factors, an even greater effort would be required to achieve the same level of per capita GHG emission reduction reported in the current SCSs. According to the MPOs, simply staying on course to achieve the previously demonstrated regional SB 375 GHG emission reduction targets would be a stretch of current resources, let alone achieving the more aggressive targets adopted by the Board in 2018.

To determine whether ABAG/MTC is achieving the level of incremental progress consistent with what it reported during the target setting process, CARB staff evaluated the incremental progress analysis provided by ABAG/MTC consistent with methods put forward in the updated SCS Evaluation Guidelines. The methodology called for comparing the differences in the per capita GHG emissions between the 2017 RTP/SCS and the 2021 RTP/SCS under current exogenous variables and assumptions.

Error! Not a valid bookmark self-reference. provides a summary of incremental progress analysis results for the ABAG/MTC region between 2017 RTP/SCS and 2021 RTP/SCS when controlling for as many exogenous factors as possible. The No project scenario illustrates the impact of exogenous factors such as auto operating cost, travel demand model improvements, TNC, autonomous vehicles, and other factors have negatively affected the 2017 RTP/SCS strategies by 7%. When adjusting the 2017 RTP/SCS with exogenous assumptions from the 2021 RTP/SCS, the 2035 per capita GHG reductions are approximately reduced to 8 percent from 15 percent.

⁶⁶ CARB. [Board Resolution 18-12](#) (March 22, 2018).

Table 3. ABAG/MTC Incremental Progress Assessment Findings

Plans	2017 Exogenous Factors	2021 Exogenous Factors
No project¹	-2% GHG per capita reduction	+2% GHG per capita increase
Second RTP/SCS (2017) SCS/RTP	-15% GHG per capita reduction	-8% GHG per capita reduction
Third RTP/SCS (2021)	N/A	-20% GHG per capita reduction

¹ It indicates the plan before adding SCS strategies.

ABAG/MTC claims an additional 12 percent GHG reduction from new and enhanced strategies such as converting all freeway lanes in corridors with high-quality transit to tolls roads, increasing development capacity in regionally identified Transit-Rich and High-Resource Areas, reducing the speed limit to 55 miles per hour, increasing EV mode share, expanding clean vehicle initiatives, and transportation demand management. While the information presented suggests that the 2021 RTP/SCS includes additional and enhanced strategies relative to the 2017 RTP/SCS, ABAG/MTC did not provide sufficient details to determine the magnitude of GHG reductions from those new/enhanced strategies.

Insufficient information to determine whether ABAG/MTC’s Incremental progress is consistent with the information it shared during the 2018 target setting process.

Equity

MPOs may report to CARB a summary of how they conducted equity analyses as part of the development of their RTP/SCSs in accordance with the California Transportation Commission's *2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations*.⁶⁷ The Equity Analysis Report⁶⁸ of ABAG's/MTC's 2021 RTP/SCS documented ABAG/MTC's equity analysis. CARB staff reviewed this appendix and prepared this section to summarize ABAG/MTC's 2021 RTP/SCS equity work, including identifying communities of concern, equity performance measures, equity analysis, and public participation efforts.

Identifying Equity-Focused Populations and Communities in the Bay Area Region

As a first step in ABAG/MTC's social equity analysis, they analyzed the effects of the 2021 RTP/SCS on vulnerable populations and communities in the region. ABAG/MTC used both population-based methods and geographic areas to identify equity groups and communities in the region including:

- low-income populations;
- people of color;
- equity priority communities:

According to ABAG/MTC, equity priority communities (formerly referred to as communities of concern in their previous RTP/SCS) are census tracts that have:

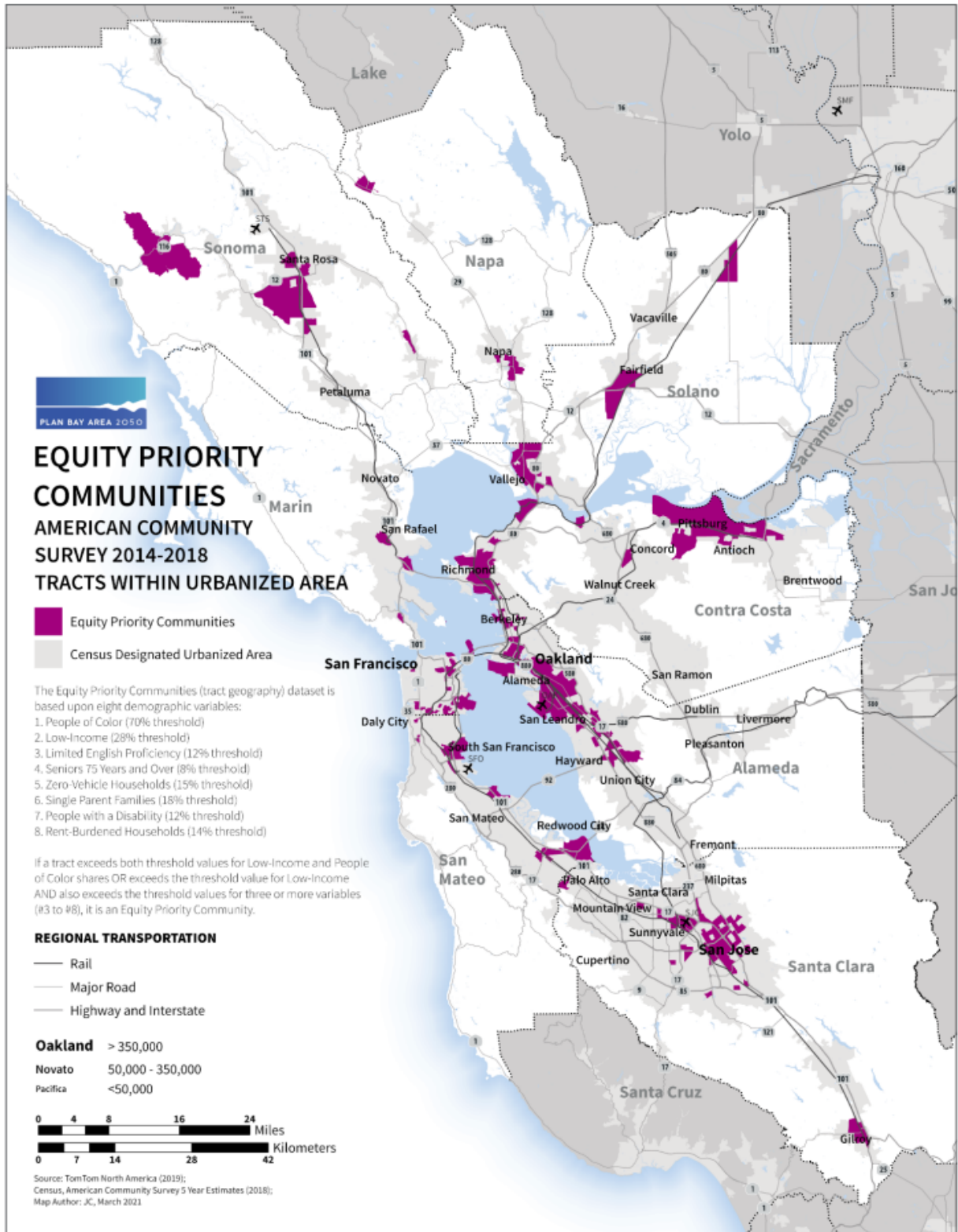
- A concentration of both people of color and people with low incomes; OR
- A concentration of people with low incomes and any three or more of the following six factors:
 1. Persons with limited English proficiency,
 2. Zero-vehicle households,
 3. Seniors aged 75 years and over,
 4. Persons with one or more disability;
 5. Single-parent families;
 6. Renters paying more than 50 percent of their household income on housing.

Figure 17 shows the equity priority communities in the Bay Area Region.

⁶⁷ California Transportation Commission. [2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations](#). (January 2017).

⁶⁸ ABAG/MTC, 2021 RTP/SCS, [Plan Bay Area 2050 Equity Analysis Report October 2021.pdf](#) (planbayarea.org)

Figure 17. Equity Priority Communities in the Bay Area Region



Equity Performance Measures

ABAG/MTC selected 12 disparity measures and corresponding metrics to understand the RTP/SCS impacts (see Figure 18) that are organized around five guiding principles.

1. *Affordable*: Reduced housing + transportation costs for underserved populations
2. *Connected*: Improved accessibility to jobs, school, and other amenities, prioritizing underserved populations
3. *Diverse*: Inclusive communities, where underserved populations can stay in place and have increased access to the region's assets and opportunities
4. *Healthy*: Healthier and more resilient communities with investments prioritized for underserved populations
5. *Vibrant*: Greater economic mobility for underserved populations

Figure 18. Measures of Disparity and Corresponding Metrics in Plan Bay Area 2050 Outcomes

GUIDING PRINCIPLE	DISPARITY MEASURE	METRIC	DISAGGREGATED BY
 AFFORDABLE	Housing and Transportation Affordability	Share of Income Spent on Housing + Transportation	Income Group
	Transportation Expenses	Per Trip Average Transit Fare; Auto Out-of-Pocket Expense; Parking Cost and Tolls	Income Group
 CONNECTED	Proximity to Transit	Share of Households Located Near High-Frequency Transit (0.5mi)	Income Group Area Type
	Accessibility to Jobs	Number of Jobs That Are Accessible by Transit/Auto/Bike/Walk	Geography Area Type
 DIVERSE	Access to Opportunity	Share of Households in High-Resource Areas That Are Households with Low-Incomes	Geography
	Ability to Stay in Place	Share of Neighborhoods That Experience Loss of Low-Income Households between 2015–2050	Geography
 HEALTHY	Access to Parks	Urban Park Acres per 1,000 Residents	Geography
	Air Quality Impacts	PM _{2.5} Emissions Density (Daily Tons of Emissions per 10 Square Miles)	Geography
	Safety from Vehicle Collisions	Annual Fatalities per 100,000 People (from Non-Freeway Incidents)	Geography
	Protection from Natural Disasters	Share of Risk-Prone Households That Are Protected from Risk of Sea Level Rise, Earthquake and Wildfire	Geography
 VIBRANT	Employment Diversity	Job Growth by Industry Type between 2015–2050 (Annual Growth Rate)	Industry Wage Level
	Employment Location	Average Commute Distance (miles)	Income Group

The following section highlights a handful of equity measures listed in Figure 19 but does not report on all measures. Some outcomes from MTC/ABAG's equity analysis are summarized below. For more information on the full analysis results see the RTP/SCS's Equity Analysis Report.

Affordable Disparity Measures

According to ABAG/MTC, the 2021 RTP/SCS makes significant headway in improving housing and transportation affordability for all residents. In 2015, the reference year for ABAG/MTC's on-the-ground conditions, households with low incomes had an extreme housing and transportation cost burden. Under the 2021 RTP/SCS, producing and preserving more affordable housing, combined with strategies like means-based fares and tolls, are projected to help reduce cost burdens to households with low incomes by nearly half by 2050. Disparities are significantly lowered, with households with low incomes spending 58 percent of their income on housing and transportation in 2050 relative to 113 percent in 2015, and all Bay Area households on average spending 45 percent in 2050 relative to 58 percent in 2015.

According to ABAG/MTC, despite an increase in cost per auto trip, transportation is expected to be more affordable overall with the 2021 RTP/SCS, and disparities faced by households with low incomes will decrease. This outcome is driven by a combination of means-based transit fares and freeway tolling, which together are estimated to provide some benefits for all residents, with the greatest benefits for low-income transit riders and drivers. Out-of-pocket costs for auto trips, which include fuel, maintenance, parking fees and tolls, increase on average due to increased parking fees and freeway tolling. However, the impacts of freeway tolling to low-income drivers are lowered with means-based tolls, due to travel discounts.

Connected Disparity Measures

According to ABAG/MTC, the 2021 RTP/SCS will help improve the proximity to transit and accessibility to jobs by all modes, for all households, with better outcomes for households with low incomes.

A higher share of households with low incomes in the Bay Area are projected to be located within a half-mile of high-frequency transit relative to the regional average. High-frequency transit is defined as rail, ferry, and bus stops with two or more intersecting routes with frequencies less than or equal to 15 minutes. With targeted affordable housing growth in transit-rich areas, and improvements to transit service, over two-thirds of households with low incomes are forecasted to live within a half-mile of high-frequency transit. Throughout 2050, access to transit across all area types (e.g., rural, suburban, and urban) is expected to increase with the Plan.

Residents in equity priority communities are expected to have access to more Bay Area jobs by all modes (e.g., auto, transit, bicycle, and walk) than the region on

average. The RTP/SCS' focus on housing and employment growth in transit-rich areas and transit expansion strategies is expected to increase the number of Bay Area jobs accessible by 30-minute auto drive by 30 percent and a 45-minute transit journey by 115 percent for residents in equity priority communities. Job accessibility increases across all area types, rural, suburban, and urban with the Plan.⁶⁹

These outcomes are primarily driven by increased access to affordable housing in transit-rich areas and prioritizing funding for transportation infrastructure projects and services that were forecasted to enhance equitable outcomes for households with low incomes.

Health Disparity Measures

ABAG/MTC expects that fine particulate matter emissions will decrease due to cleaner and more fuel-efficient vehicles, as well as a significant reduction in freeway vehicle miles traveled. The percentage reduction is similar across all comparison geographies; however, air quality disparities between equity priority communities and the region persist.

The non-freeway fatalities metric captures the impact of change in VMT and speeds arising from the SCS strategies but does not capture design improvements and programs that may change driver behavior since they cannot be represented in the transportation model. The projected rate of non-freeway fatalities per 100,000 residents decreases slightly in equity priority communities and the region due to more trips taken without cars and speed limit reductions. Regardless, the rate remains far from the vision zero goal of having zero traffic injuries and fatalities. Street design enhancements and programs proposed in the SCS strategies are necessary to make meaningful reductions in these rates.

Under the 2021 RTP/SCS, planned protection and adaption investments are prioritized in equity priority communities to fully protect households that may be affected by 2 feet of sea level rise. The remaining 2 percent of households not protected by adaptation investments are candidates for a managed retreat program. As such, the Plan's sea level rise adaption strategy accounts for the estimated cost of a managed retreat program. Means-based retrofit subsidies are also prioritized for residential buildings in equity priority communities, enabling resiliency to earthquake and wildfire events for all at-risk households regionwide.

⁶⁹ Due to limitations in forecasted data for jobs by wage level, ABAG/MTC was not able to measure accessibility to jobs of specific wage levels, accessibility to schools and other amenities.

According to ABAG/MTC, residents across the region will have improved health outcomes in 2050 relative to 2015 through better access to parks, improved air quality, and increased safety from vehicle collisions. Disparities in park space between equity priority communities and the region as a whole decrease, while disparities in air quality and safety from vehicle collisions persist. The 2021 RTP/SCS prioritizes resiliency investments in equity priority communities that are forecasted to protect all households that are exposed to risk from sea level rise and earthquake and wildfire events. The Plan includes strategies to prioritize park investments in equity priority communities not only to help increase acreage of park space in those communities and decrease disparities but also increase the quality of available parks. This strategy was a new addition to the Plan in response to feedback during small group discussions with under-represented populations about the increased importance of park space because of the COVID-19 pandemic.

Public Outreach and Engagement

To guide public participation and public involvement in the development of the 2021 RTP/SCS, ABAG/MTC was guided by its Public Participation Plan (PPP).⁷⁰ The PPP spells out the process for providing the public and interested parties with diverse and accessible opportunities to be involved in the regional transportation planning process.

For their public engagement process, ABAG/MTC used a variety of new and innovative techniques to reach more residents, which lead Plan Bay Area 2050 to add nearly 15,000 additional participants and over 216,000 additional comments, for a total of over 234,000 comments from nearly 19,000 Bay Area residents since the previous plan.⁷¹ ABAG/MTC's public engagement activities included in-person and online workshops in each county, focus groups, telephone town halls, and public hearings, online and text-based surveys, a website, e-newsletters, and an animated video, among other tactics. To ensure diverse and robust public participation, ABAG/MTC focused resources to hear more from those most historically absent from the decision-making process. MTC continued its approach to engagement by partnering with community-based organizations (CBOs). MTC's eight CBO partners help foster trust and understanding with the communities the CBOs serve and elicit valuable insights through focus groups, surveys, and direct feedback. The multiple layers of engagement strategies and tactics, which took place in face-to-face interactions prior to COVID-19 shelter-in place orders, and online, both before and during the pandemic, resulted in the most input received on any RTP/SCS date.

⁷⁰ For more information see ABAG/MTC. 2021 RTP/SCS. [Public Engagement Report](#).

⁷¹ For more information see: ABAG/MTC, 2021 RTP/SCS [Public Engagement Report](#).

