



California

INTERREGIONAL BLUEPRINT



Integrating California's Transportation Future

Interim Report

Final Draft



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California Interregional Blueprint—Interim Report

FINAL



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Executive Summary

The California Interregional Blueprint (CIB) is a state-level transportation blueprint that combines statewide transportation goals with regional transportation and land use plans to produce a unified multimodal transportation strategy. The CIB integrates proposed interregional highway, transit, intercity passenger rail, high-speed rail (HSR), freight movement, aviation, and other transportation system and strategic plans into

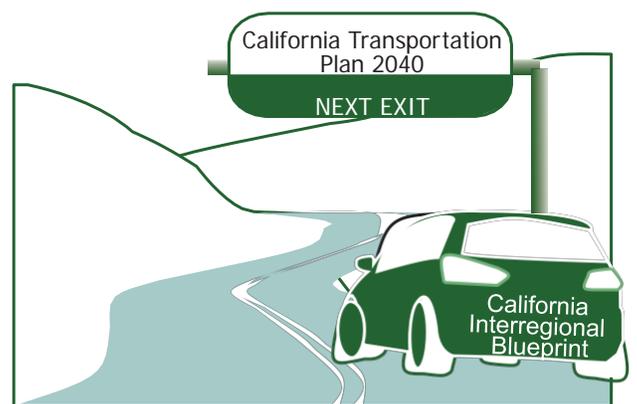
a common framework for analysis. This strategic framework provides the basis for the State's long-range transportation plan, known as the California Transportation Plan (CTP).

The CIB also responds to the requirements of Senate Bill (SB) 391 (Liu 2009). SB 391 directs Caltrans to prepare a new CTP by December 2015 that identifies the transportation system needed to achieve greenhouse gas (GHG) emission reduction goals. The upcoming statewide transportation plan, CTP 2040, will demonstrate how major metropolitan areas, rural areas, and State agencies can coordinate planning efforts to achieve critical statewide goals such as supporting GHG emission reduction targets established pursuant to Assembly Bill (AB) 32 (Nuñez 2006), Executive Order S-03-05, and SB 375 (Steinberg 2007).

This CIB Interim Report is one product of the CIB process, and builds on the preceding 2010

CIB Progress Report. As required by SB 391, it summarizes regional efforts to develop GHG emission reduction plans under SB 375, describes the potential influence of these plans on the statewide transportation system, and discusses implications for Caltrans and other State agencies. This lays the groundwork for the upcoming CTP 2040, which will describe in more detail how the State will integrate and build on regional efforts to address GHG emission reduction, mobility, economic development, and other key goals.

SB 375 has dramatically changed the focus of regional transportation planning. It requires California's Metropolitan Planning Organizations (MPO) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The RTP/SCS plan demonstrates how regional GHG emission reduction targets will be met through





coordinated transportation and land use investments and policies. If the RTP/SCS actions fail to meet regional targets, the MPO must prepare an Alternative Planning Strategy (APS) to show how the target could be met if sufficient funds were available.

While SB 375 has a strong regional focus, SB 391 highlights the critical role of Caltrans and other State agencies in addressing interregional travel issues, including GHG emission reductions associated with interregional travel. Caltrans is using the CIB to define strategies to address interregional travel needs, while ensuring that the CTP 2040 will identify statewide policies and investment priorities needed to support the State's GHG emission reduction goals.

REGIONAL EFFORTS

Three of California's largest MPOs—San Diego Association of Governments (SANDAG), Southern California Association of Governments (SCAG), and Sacramento Area Council of Governments (SACOG)—have adopted their first RTP/SCS plan. Each MPO demonstrated that its RTP/SCS plan would meet or exceed the targets for reducing per capita passenger vehicle GHG emissions in 2020 and 2035, as called for in SB 375. At the same time, California's 15 other MPOs currently are preparing their plans.

Section 2 of this report summarizes key planning initiatives and investments included in the three adopted RTP/SCS plans, and identifies strategies

being considered by MPOs that are still preparing their plans. In addition, Section 2 highlights key statewide transportation issues that have been identified in the CIB analysis.

SUSTAINABLE COMMUNITIES STRATEGIES INFLUENCES ON THE STATEWIDE TRANSPORTATION SYSTEM

SB 391 requires the CIB Interim Report to discuss how regional RTP/SCS plans could influence the statewide transportation system. Analysis of the three adopted RTP/SCS plans and preliminary activities in the 15 other MPOs revealed several themes in three broad categories:

- RTP/SCS Investments that could Influence the Statewide Transportation System:
 - Transit Capacity and Connectivity: MPOs are focusing scarce discretionary funding on investments in transit capacity, frequency, and connectivity. SACOG, SANDAG, and SCAG have dedicated the second largest portion of their RTP funding to investment in transit capital and operations. Furthermore, the MPOs are also including major transit capacity and frequency expansion in their RTP/SCS plans. Currently adopted RTP/SCS plans anticipate substantially improved high-capacity transit access at several major airports (Sacramento, Los Angeles, and San Diego). Further, the

emerging HSR “Blended Scenario”¹ anticipates leveraging regional rail investments as part of a statewide initial operating system for HSR.

- “Active Transportation”: MPOs are increasing the proportion of funds they invest in bicycling and walking projects (“active transportation”) and supporting policies such as Complete Streets and Safe Routes to Schools. MPOs and transit operators also are emphasizing improvement in bicycling and walking connections to transit. For example, SCAG’s RTP/SCS plan calls for the provision of multimodal mobility hubs around major transit stations, folding-bikes-on-bus programs, triple bike racks on buses, and dedicated racks on light rail vehicles.
- Managed Lanes: SANDAG and SCAG plan substantial investments in managed lanes, both priced and free, on multiple regional routes. SACOG’s RTP/SCS plan includes new carpool lanes on sections of I-5, I-80, and U.S. 50.
- Land Use Strategies that Could Influence Statewide Travel:
 - Coordination Between Location Efficient Development and Transportation Investments: The RTP/SCS plans for SACOG, SANDAG, and SCAG focus future growth in developed areas and around transit stations. This approach is known as “location efficient development.” SANDAG’s plan accommodates 79 percent of all housing and 86 percent of all jobs within the “Urban Area Transit Strategy Study Area,” where the greatest investments in public transit are being made. SCAG and SACOG also concentrate a majority of new growth in areas

to be served by high-quality transit areas. MPOs also are expanding funding to support

location efficient development, such as through SANDAG's Smart Growth Incentive Program. These funding programs are critical to ensuring that the land use visions included in SCS documents are realized.

- Process and Policy Changes Resulting from the

SCS Process:

- Constrained Funding: Financial resources for transportation investments are limited. The California Transportation Commission's (CTC) 2011 Statewide Transportation System Needs Assessment (STSNA) reported growing transportation system maintenance and operation needs, and constrained funding for expansion or enhancement. The report documented about \$341 billion in statewide maintenance and preservation needs² from 2011 to 2020, compared to about \$147 billion in available revenue for maintenance and preservation. The three MPOs with completed RTP/SCS plans dedicated the largest share of their RTP budgets to system maintenance, reflecting these resource constraints.
- Opportunities for Streamlined California Environmental Quality Act (CEQA) Review: Several MPOs are encouraging local governments to take advantage of new

¹ According to the California High-Speed Rail Authority's 2012 Business Plan, the Blended Scenario is a strategy for phased implementation of a statewide HSR system that includes:

- Dividing the program into a series of smaller, discrete projects that build upon each other but also can stand alone to provide viable HSR service.
- Making advance investments in regional and local rail systems to leverage existing infrastructure and benefit travelers by providing interconnecting rail services.

² Unless otherwise noted, all costs in this report are stated in year of expenditure dollars.

streamlining provisions available through SB 375 and other legislation in conjunction with the RTP/SCS plans, allowing expedited review of infill projects that support GHG emission reduction goals. State, regional, and local agencies are identifying other methods of streamlining California Environmental Quality Act (CEQA) approvals to allow priority transportation projects to move forward more quickly. For example, SACOG was recently awarded a Strategic Growth Council (SGC) grant to explore expedited environmental review of transit projects.

- Greater Coordination Across Government Agencies and Stakeholders: The RTP/SCS process is resulting in greater levels of coordination between government agencies and stakeholder groups. For example, SB 375 led to the creation of an MPO working group involving the major MPOs and State agencies.³ This group continues to share approaches and lessons learned in developing RTP/SCS plans and meeting GHG emission reduction targets. Several MPOs report increased engagement from the business community, local agencies, and nonprofit groups during RTP/SCS plan development as compared to prior RTPs. SANDAG, in particular, received an unusually large number of comments (more than 4,000) from many stakeholder groups in response to their Draft RTP/SCS plan.

The evolving RTP/SCS planning process creates opportunities for Caltrans and other State agencies to redefine their roles in ways that complement MPO planning activities. Some specific ways in which Caltrans and other State agencies can support SCS implementation and address gaps in the SCS planning process include:

- Investing in strategic capital

and operations projects.

- Supporting streamlined regulation.
- Providing funding support.
- Coordinating data and analysis.
- Monitoring the statewide transportation system.
- Supporting and leading local, regional, and interregional corridor planning.
- Providing leadership on issues such as freight mobility and interregional travel that are not fully addressed in regional plans.

NEXT STEPS

SCS development and implementation highlights opportunities that point the way towards a fully “statewide integrated multimodal transportation



³ Including Caltrans, the CTC, the California Air Resources Board, the California Department of Housing and Community Development, the California Department of Healthcare Services, and the Governor's Office of Planning and Research.

system.” CTP 2040 will address these opportunities, while others should be considered as earlier actions.

the 2011 STSNA. Caltrans should continue

Developing the CTP 2040

The CIB Interim Report draws on the three RTP/SCS plans adopted as of July 2012 and preliminary information from the regional planning agencies that have yet to adopt an RTP/SCS plan. By the time the CTP 2040 is prepared, all 18 MPOs will have completed their first RTP/SCS plans, and will have defined the projects or policies that could influence travel along interregional corridors. Having a more complete picture of regional plans will enable the CTP 2040 to provide greater analysis of the relationship between regional and statewide planning efforts. Moreover, key analysis tools, such as the California Statewide Travel Demand Model (CSTDm), will be available to assess interregional travel patterns, GHG emissions, and statewide transportation performance. These advances mean that the CTP 2040 can be a truly strategic document for California that considers metropolitan, rural, tribal, and interregional transportation issues.

Early Actions to Support SB 375 Implementation

The experience of the first three MPOs in preparing their RTP/SCS plans provides some “lessons learned” that should be considered by Caltrans and its partners. Doing so may lead to some early actions that Caltrans can take prior to completion of the CTP 2040:

- Streamlined Project Delivery: Caltrans can also promote streamlining CEQA and National Environmental Policy Act compliance strategies for such projects.
- Adequate Funding for Transportation Projects and

this strong role in the periodic updating of this document and formulate policy recommendations for transportation funding that can be advocated and supported by the State.

- **Adequate Funding for Transit Supportive Development:** Many California MPOs have initiated infrastructure funding programs that directly support transit-oriented development. However, the limited funding available for these programs cannot meet all needs. The success of many strategies in adopted RTP/SCS plans will depend to a large extent on how funding issues are resolved.
- **Performance Measurement and Monitoring Enhancements:** Greater attention is being paid to performance measurement methods, including the use of models, forecasting techniques, selection of relevant performance measures and targets, and evaluation of results. Caltrans' Smart Mobility 2010 report recommended "Smart Mobility Performance Measures" (SMPM) that could be a starting place for evaluating performance results. Caltrans should continue working with the SGC in guiding the development and providing direct technical support for the next California Regional Progress Report.
- **Continued State and Regional Collaboration on SCS Development and Implementation:** In recent years, MPOs and State agencies have shared experience and knowledge in developing and implementing RTP/SCS plans. This collaborative process could continue and lessons learned can be incorporated into the next update of the 2010 California Regional Transportation Plan Guidelines.

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Laying the Foundation

California's transportation system faces major challenges. A recent assessment prepared by the CTC⁴ highlights deep gaps in funding available for basic system maintenance and operation. At the same time, the transportation system is under greater pressure to accommodate the mobility needs of California's growing population and to address climate change.

State and regional agencies are responding to these challenges. California's 18 MPOs are developing RTPs to meet the transportation needs of future generations and reduce GHG emissions from passenger vehicles and light trucks for travel within regions (intraregional travel). Under the provisions of SB 375, MPOs must prepare a SCS as part of their RTP to specify the regions' transportation and land use strategies for meeting GHG emission reduction targets set by the California Air Resources Board (ARB). If the combination of measures in the SCS fail to meet regional targets, an APS must be prepared to show how the target could be met.

The State also is enhancing its planning processes. Caltrans initiated the CIB process to define how regional and statewide efforts can address mobility and climate change issues. The CIB process will inform preparation of the CTP 2040. Under SB 391, the CTP must identify the "statewide integrated multimodal transportation system" needed to reduce GHG emissions to 1990 levels from current levels

by 2020, and 80 percent below the 1990 levels by 2050, as described in Executive Order S-03-05 and AB 32. SB 391 specifies that the CTP must take into consideration the use of alternative fuels, new vehicle technology, tailpipe emissions reductions, and the expansion of public transit, commuter rail, intercity rail, bicycling, and walking.

1.1 REPORT PURPOSE AND STRUCTURE

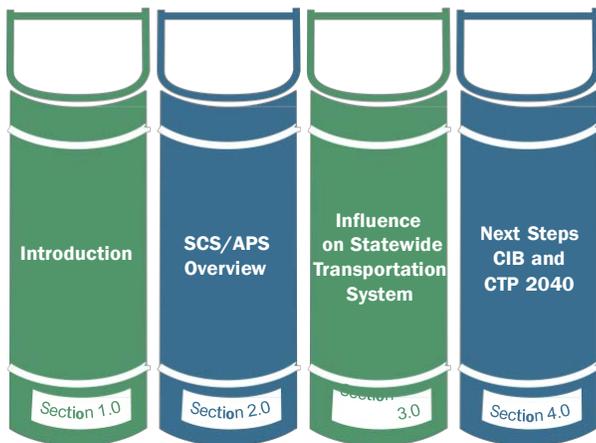
The CIB Interim Report is a component of Caltrans' CIB process and a requirement of SB 391. It is intended to support coordinated regional and statewide planning efforts to improve mobility and address GHG emissions from transportation. SB 391 requires this report be prepared and submitted to the California State Legislature and the CTC by December 31, 2012, and that it includes the following information:

- A list and overview of SCS and APS plans prepared by MPOs under SB 375.
- An assessment of how the implementation of the SCS and APS plans will influence the configuration of the "statewide integrated multimodal transportation system."

⁴ The 2011 STSNA can be accessed at: http://www.catc.ca.gov/reports/2012%20Reports/Trans_Needs_Assessment_corrected_01172012.pdf.

This report responds to SB 391 requirements as follows:

- Section 2 contains a list and overview of SCS and APS plans. Many of these plans are not yet complete, so a status report accurate as of June 2012 is presented.
- Section 3 contains an assessment of how the SCS and APS plans might influence the “statewide integrated multimodal transportation system.” This section also discusses potential roles for the State in complementing or supplementing SCS efforts to achieve GHG emission reductions and ensure an integrated statewide transportation network.
- Section 4 describes next steps for the CIB and CTP 2040.



1.2 CALIFORNIA INTERREGIONAL BLUEPRINT PROCESS

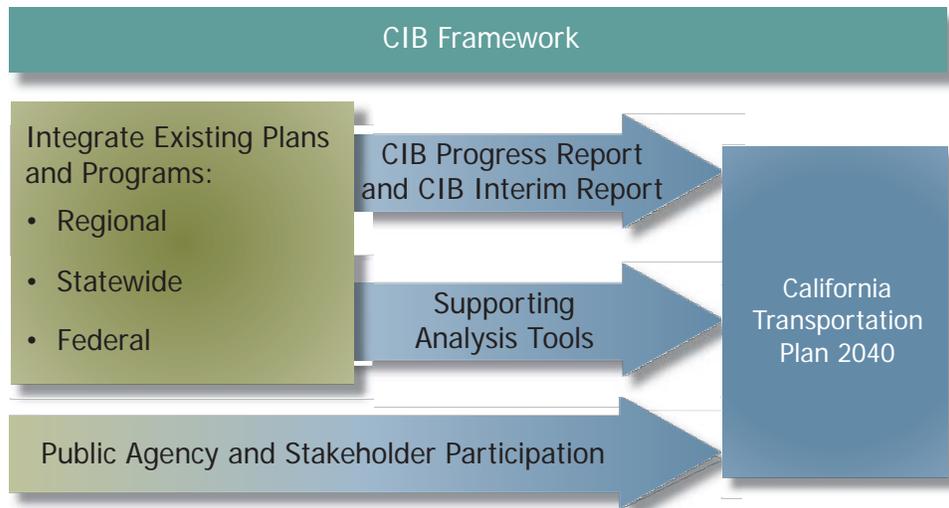
The CIB is Caltrans’ process to define the State’s “integrated multimodal transportation system” needed to meet mobility and congestion management objectives consistent with the State’s GHG emission limits and air pollution standards.

The CIB process includes five major components:

- Outreach: Stakeholder outreach to obtain input on strategies to meet the State’s mobility and climate change goals is ongoing through the CIB process.
- CIB Progress Report (completed September 2010): This report describes initial efforts to develop an integrated, multimodal strategy that addresses mobility and climate change issues on the State transportation system.
- CIB Interim Report: This report describes the effects of regional plans on the statewide transportation system, and potential implications for statewide planning and policy efforts.
- Resources and Tools: Several resources and tools are being developed to support analysis of statewide mobility and climate change issues and trends, and to investigate the effects of regional plans on the statewide system. These tools and resources are described in Section 4.0 of this report.
- CTP 2040: Ultimately, these components feed into development of the CTP 2040, which will define Caltrans’ integrated, multimodal strategy for addressing interregional travel issues and for reducing GHG emissions associated with statewide travel.

The overall framework for the CIB is shown in Figure 1.1.

Figure 1.1 The CIB Framework



1.3 RELATIONSHIP OF THIS REPORT TO REGIONAL PLANNING ACTIVITIES AND SB 375

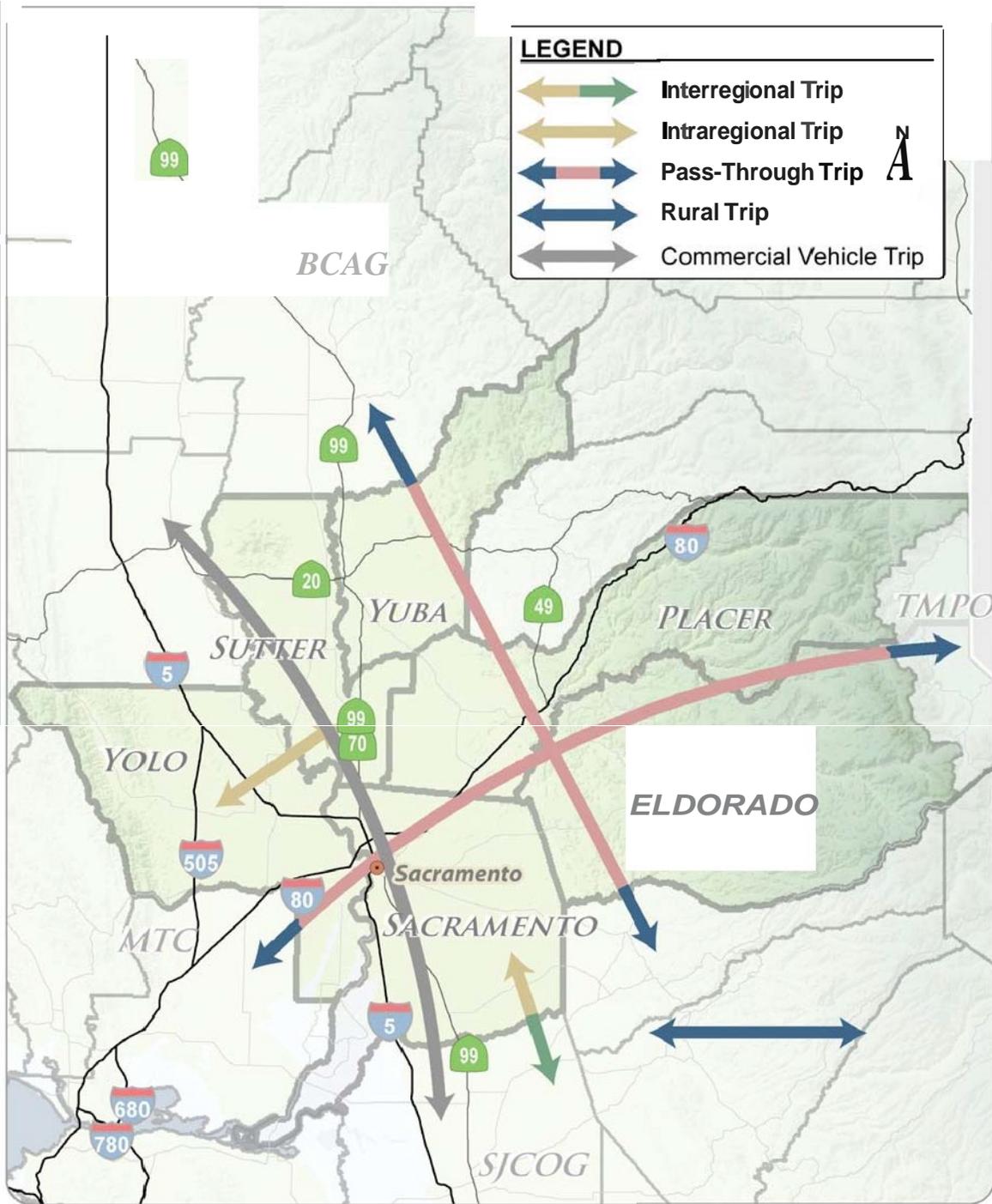
Regional planning in California has evolved toward greater integration of transportation and land use. Regional blueprint plans developed over the last decade identify land use strategies, such as locating compact development near transit, which can improve transportation system performance. SB 375 asks regions to build upon their blueprint plans to demonstrate GHG emission reduction potential by developing an RTP/SCS plan.

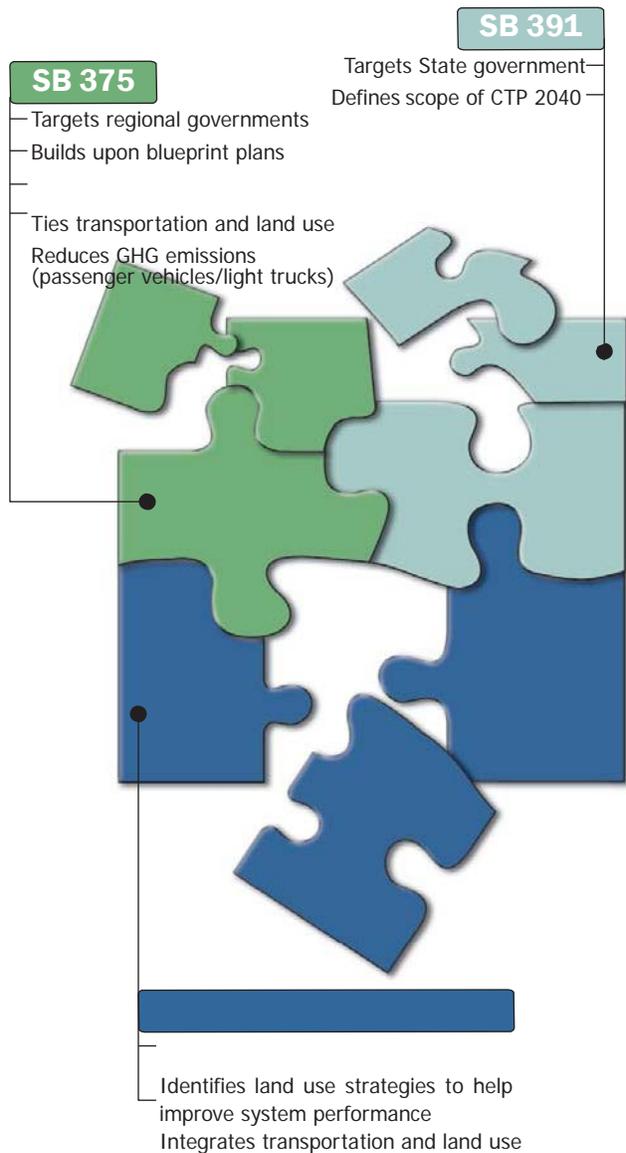
Just as SB 375 led to rethinking how the next generation of RTPs should be prepared, SB 391 added new requirements for the CTP 2040. Table 1.1 compares some of the key distinctions between SB 375 and SB 391. SB 375 specifies that regional governments are primarily responsible for GHG emissions associated with intraregional passenger and

light-duty truck travel in developing RTP/SCS plans. They also must develop a regional land use vision supportive of GHG emission reduction goals.

SB 391 defines the State's role in addressing GHG emission reduction, and defines the scope of the CTP, the State's primary transportation planning document. Specifically, SB 391 stipulates that the CTP describe the "statewide integrated multimodal transportation system" necessary to achieve GHG emission reduction goals. Estimating statewide transportation GHG emissions will involve assessing the effects of RTP/SCS plans on the statewide system and analyzing GHG emissions resulting from trip types not fully addressed in RTP/SCS plans. These trip types include interregional, pass-through, rural, and commercial freight vehicle trips. Figure 1.2 (on the next page) illustrates these different trip types using the SACOG region as an example.

Figure 1.2 Trip Types





Interim Report Working Group

The CIB Interim Report Working Group (Working Group) guided development of the CIB Interim Report. The Working Group helped assess how RTP/SCS decisions will influence the configuration of the statewide, multimodal, transportation system. Working Group members included representatives from California MPOs, rural Regional Transportation Planning Agencies (RTPA), tribal governments, the California ARB, CTC, and Caltrans. The Working Group met eight times during the development of the CIB Interim Report.



TABLE 1.1 COMPARISON OF NEW RTP AND CTP PLANNING FRAMEWORKS					
	New Legislation	Legislation Focus	Scope of Integration	Guidance Documents ("Roadmaps")	Products
RTPs	SB 375	GHG emission reduction (passenger vehicles); land use/transportation integration	Intraregional	Regional Targets Advisory Committee Report, State RTP Guidelines	RTP/SCS
CTP	SB 391	GHG emission reduction (passenger vehicles; all trucks; rail; air; maritime); intermodal transportation system integration	Interregional	CIB Interim Report	CTP 2040

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Regional Efforts

2.1 INTRODUCTION

This section provides an overview of MPO RTP, SCS, and APS plans, including regional planning activities, planned initiatives and investments, and primary interregional transportation issues addressed in the plans. Section 3.0 discusses the potential influences of these SCSs on the statewide transportation system.

The SCS plans are grouped corresponding to nine areas of the State. Grouping allows more concise presentation of the material and inclusion of relevant rural area trends and issues along with SCS plans. Some groups contain multiple MPOs, while others have none, but have been included to illustrate statewide travel issues affecting rural areas. The regions and associated MPOs are presented below.⁵

- San Diego Region: SANDAG.
- Southern California Region: SCAG.
- Sacramento Region: SACOG.
- Bay Area Region: Metropolitan Transportation Commission (MTC).

- San Joaquin Valley Region: San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and Kern County MPOs.
- Central Coast Region: Association of Monterey Bay Area Governments (AMBAG), San Luis Obispo Council of Governments (SLOCOG), and Santa Barbara County Association of Governments (SBCAG).
- Lake Tahoe Region: Tahoe Regional Planning Agency (TRPA).
- Northern Sacramento Valley Region: Butte County Association of Governments (BCAG) and the Shasta County Regional Transportation Planning Agency (SCRTPA), and rural counties.
- North State Region: includes rural counties not subject to SB 375.

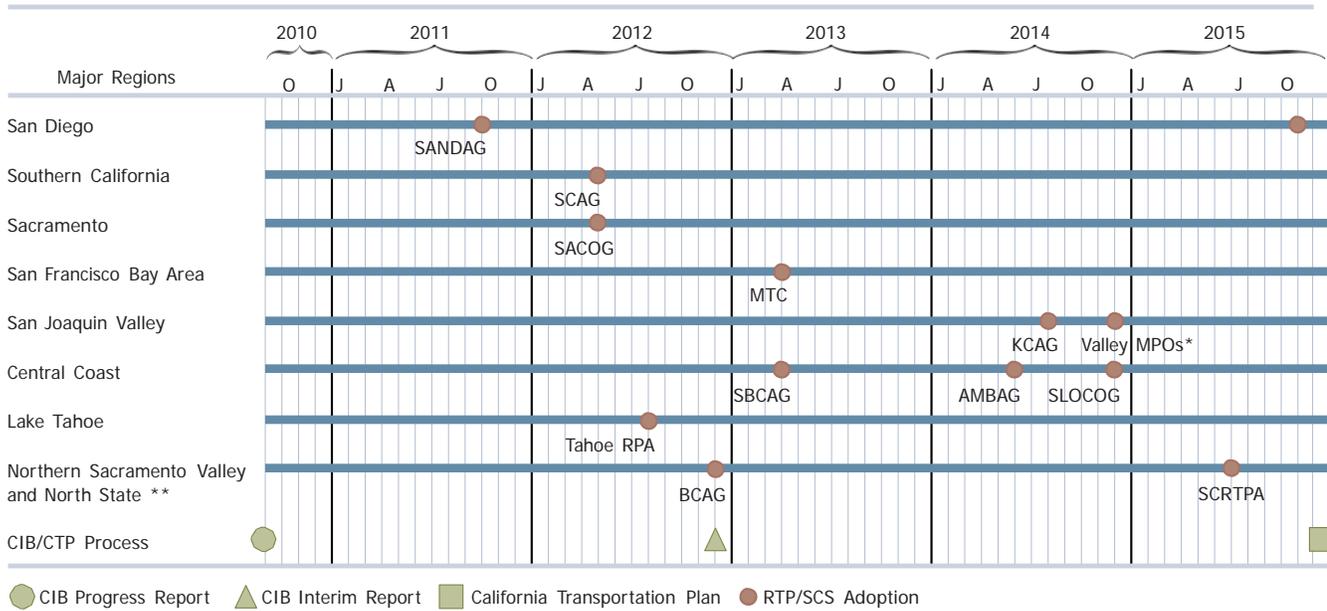
The SCS-related activities presented in this section are a snapshot in time. As of July 2012, three of California's 18 MPOs (SANDAG, SACOG, and SCAG) have completed their SCS plans. The remaining 15 are in various stages of completion, and some may ultimately prepare an APS in addition to an SCS. Figure 2.1 presents a detailed timeline of SCS or APS completion dates by MPO, along with major CIB milestones.



⁵ MPOs are ordered here similarly to how they are typically presented in California ARB documents describing

SB 375 activities.

Figure 2.1 Metropolitan Planning Organizations and RTP/SCS Completion Dates



* Except Kings County Association of Governments (KCAG).
 ** Each county in this region is represented by an RTPA; there are no MPOs. This region is not subject to SB 375.

2.2 SAN DIEGO REGION

SANDAG serves as the MPO and Council of Governments (COG) for the San Diego region. The location of the San Diego region is shown in Figure 2.2.

Sustainable Communities Strategy Snapshot

On October 28, 2011, the SANDAG Board of Directors adopted the region's 2050 RTP and SCS. This RTP/SCS plan was the first to be prepared and adopted in the State pursuant to the requirements of SB 375. As shown in Figure 2.3, the 2050 RTP/SCS plan shows the San Diego region will meet or exceed the GHG per capita emission reduction targets set



Figure 2.2 San Diego Region



by the California ARB. The plan shows a 7 percent reduction by 2020 and 13 percent reduction by 2035, as compared to the 2005 baseline. According to SANDAG, the “SCS will guide the San Diego region toward a more sustainable future by focusing housing and job growth in urbanized areas, protecting sensitive habitat and open space, and investing in a transportation network that provides residents and workers with transportation options that will help reduce GHG emissions.”

Planned Initiatives and Investments

The 2050 RTP lays out a plan for investing an estimated \$214 billion⁶ over the next 40 years (see Figure 2.4). The largest portion of the funds is targeted for transit, which will receive 43 percent of the funds (including capital, operations, and maintenance), while 40 percent is allocated to roadway improvements. More than one-half of the roadway expenditures represent maintenance and rehabilitation; a large portion is reserved for the addition of managed lanes to existing freeway corridors.

Figure 2.3 SANDAG SB 375 per Capita GHG Emission Reduction Targets

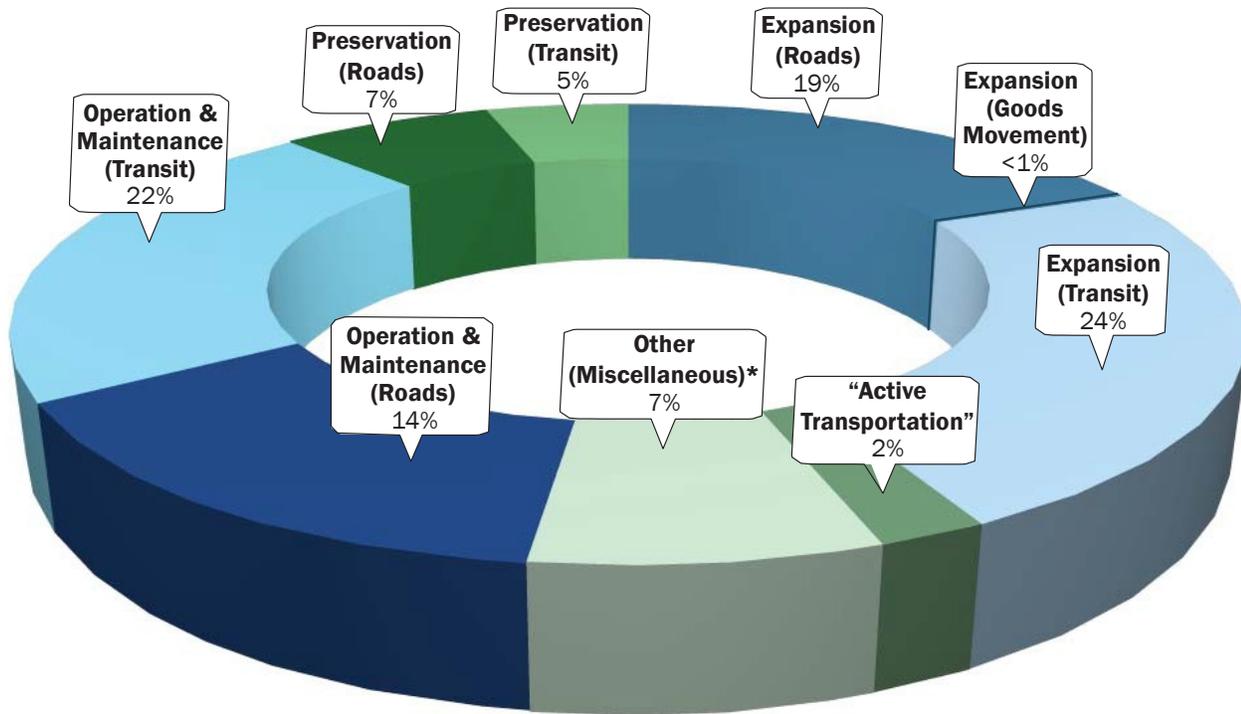


Figure 2.5 and Table 2.1 illustrate some of the major capital projects planned along interregional corridors



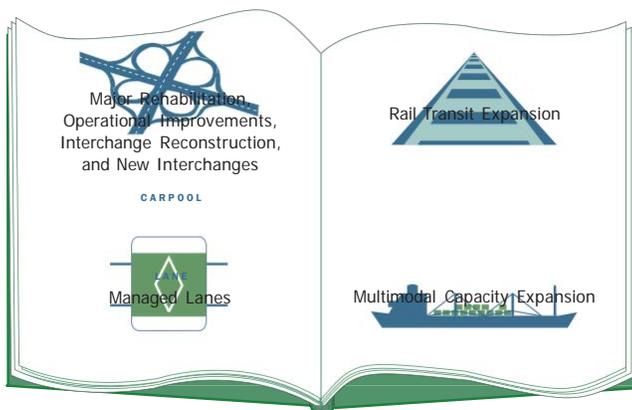
⁶ Unless otherwise noted, all costs in this report are stated in year of expenditure dollars.

Figure 2.4 SANDAG RTP Expenditures by Investment Type



* Includes Smart Growth Incentive Program, Regional Rail Grade Separations, Transportation Systems Management, Transportation Demand Management expenditures, and Debt Service.

within the SANDAG region. The table and figure include capital projects costing more than \$100 million. The corridor investments are grouped into four categories:



- Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges: Highway corridor upgrades without capacity expansion or managed lanes.
- Managed Lanes: Carpool lanes without pricing, transit-only lanes within a freeway right-of-way, tolled lanes (such as truck lanes), high-occupancy toll (HOT) lanes, or separate toll roads.
- Transit Expansion: New construction, extension, or major upgrade (such as double tracking) of a light rail, rapid transit, commuter rail, or intercity passenger rail line.

- Multimodal Capacity Expansion: Construction of a new facility or additional capacity for a highway, crossing of a major waterway, rail tracks, and/or a port/channel.

The SANDAG Board of Directors, as part of the action taken for the 2050 RTP/SCS, also approved:

- Evaluating alternative land use scenarios as part of the Regional Comprehensive Plan update to address further reductions in the per capita GHG emission reductions from 2035 to 2050. The per capita GHG emission reduction was projected to decline from 13 percent in 2035 to 10 percent in 2050. The change is due in part to extending the analysis beyond the forecasted years used for the general plans of the land use authorities. A regional transit-oriented development policy will be created to encourage sustainable development.
- Developing an early action program for projects included in the Regional Bicycle Plan, planning for the broader “Active Transportation” program, and developing a regional complete streets policy.
- Continuing to enhance travel demand models; the activity-based models currently under development will be created using publicly available software.

Key Interregional Transportation Issues

SANDAG recognizes the importance of proactively addressing interregional planning issues at each of its



borders. It has implemented a cutting-edge “Borders Planning Program.” For several years, SANDAG’s travel demand model has included trips originating from neighboring regions such as Tijuana, Mexico, and California locations such as Orange, Imperial, and Riverside Counties. Among the key interregional issues addressed through the SANDAG Borders Planning Program are:

- Binational Planning: Given San Diego’s unique position as an international gateway, SANDAG implements a comprehensive binational planning program to address important binational and regional issues. In 2010, over one million trucks transported goods valued in excess of \$53 billion through California’s ports of entry, making Mexico the State’s top international trade partner. SANDAG’s current binational planning projects include collaboration on major improvements to the international border crossings at San Ysidro and Otay Mesa. SANDAG is also working on a major binational initiative to establish a third border crossing and connecting highways in East Otay Mesa.



Figure 2.5 Major State Highway and Regional Transit Corridors Targeted for Investment in the SANDAG Region

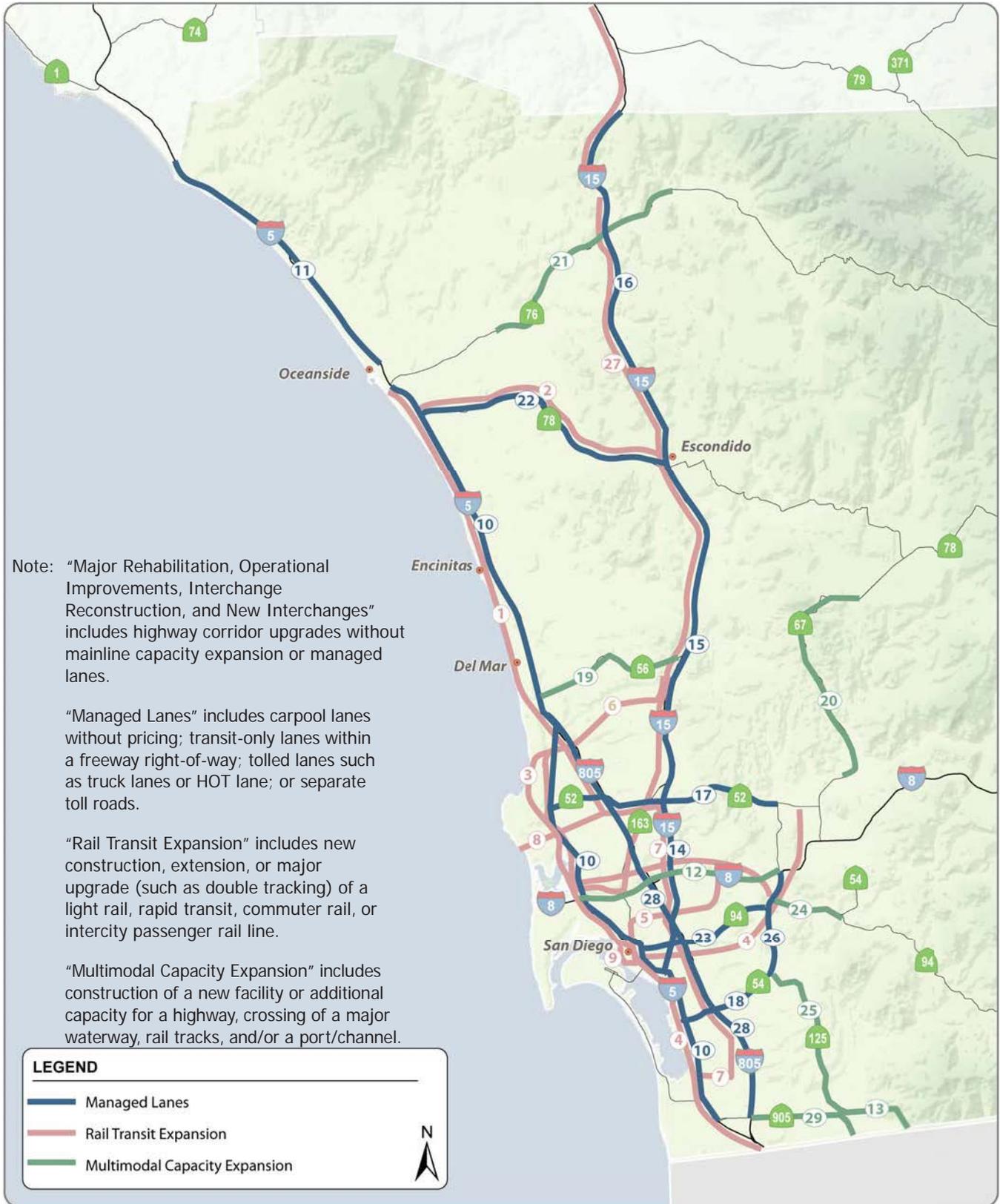


TABLE 2.1 MAJOR STATE HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SANDAG REGION

Number	Project Category	Facility	Description	Cost (Millions)*
1	Rail Transit Expansion	Rail	COASTER double tracking (includes grade separations at Leucadia Boulevard and stations/platforms at Convention Center/Petco Park and Del Mar Fairgrounds, Del Mar Tunnel, and quiet zone improvements)	\$4,979
2	Rail Transit Expansion	Rail	SPRINTER double tracking and SPRINTER Express (includes grade separations at El Camino Real, Vista Village Drive, Melrose Drive, Mission/San Marcos stations, and two additional locations)	\$1,483
3	Rail Transit Expansion	Rail	Trolley: MidCoast LRT Extension	\$1,642
4	Rail Transit Expansion	Rail	Orange and Blue Trolley Lines System Rehabilitation, Grade Separations and Express Service	\$3,045
5	Rail Transit Expansion	Rail	Trolley: SDSU to Downtown via Mid-City, El Cajon/Park Boulevards	\$4,009
6	Rail Transit Expansion	Rail	Trolley: UTC to Mira Mesa via Sorrento Mesa/Carroll Canyon	\$1,556
7	Rail Transit Expansion	Rail	Trolley: UTC to San Ysidro via Kearny Mesa, Mission Valley, Mid-City, Southeastern San Diego, National City/Chula Vista via Highland Avenue/4 th Avenue	\$6,043
8	Rail Transit Expansion	Rail	Trolley: Pacific Beach to El Cajon via Clairemont, Kearny Mesa, Mission Valley, SDSU	\$1,978
9	Rail Transit Expansion	Rail	Downtown Trolley Tunnel (12 th and Imperial Transit Center to County Center/Little Italy Trolley Station)	\$5,293
10	Managed Lanes	I-5	Combination of high-occupancy vehicle (HOV) lanes and value pricing (from State Route (SR) 905 to Oceanside)	\$9,457
11	Managed Lanes	I-5	Toll lanes from Oceanside to Orange County	\$1,795
12	Multimodal Capacity Expansion	I-8	Operational Improvements from I-5 to Los Coches Road	\$1,628
13	Multimodal Capacity Expansion	Port of Entry	SR 11/Otay Mesa East Port of Entry (POE)	\$755
14	Managed Lanes	I-15	Combination of HOV/transit lanes and value pricing from I-5 to SR 163	\$2,141
15	Managed Lanes	I-15	Combination of HOV/transit lanes and value pricing from SR 163 to SR 78	\$629
16	Managed Lanes	I-15	Toll lanes from Escondido to Riverside County	\$2,392
17	Managed Lanes	SR 52	Combination of HOV lanes and value pricing from I-5 to SR 125	\$1,163
18	Managed Lanes	SR 54	Combination of HOV lanes and value pricing from I-5 to SR 125	\$238

* All project costs are expressed in millions in year of expenditure dollars.

TABLE 2.1 MAJOR STATE HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SANDAG REGION (CONTINUED)

Number	Project Category	Facility	Description	Cost (Millions)*
19	Multimodal Capacity Expansion	SR 56	Addition of freeway lanes between I-5 and I-15	\$244
20	Multimodal Capacity Expansion	SR 67	Addition of freeway lanes between Maple view Street and Dye Road	\$781
21	Multimodal Capacity Expansion	SR 76	Addition of freeway lanes between Melrose Drive and Couser Canyon	\$639
22	Managed Lanes	SR 78	Combination of HOV lanes and value pricing from I-5 to I-15	\$592
23	Managed Lanes	SR 94	Combination of HOV lanes and value pricing from I-5 to SR 125	\$1,310
24	Multimodal Capacity Expansion	SR 94	Addition of freeway lanes between SR 125 and Steele Canyon Road	\$333
25	Multimodal Capacity and Managed Lanes	SR 125	Addition of freeway/toll lanes between SR 905 and SR 54	\$405
26	Managed Lanes	SR 125	Combination of HOV lanes and value pricing from SR 54 to I-8	\$659
27	Rail Transit Expansion	TBD	Statewide HSR (alignment alternatives shown on map)	\$16,664
28	Managed Lanes	I-805	Combination of HOV lanes and value pricing from SR 905 to I-5	\$4,845
29	Multimodal Capacity Expansion	SR 905	Addition of freeway lanes between I-805 and Mexico	\$595
Not Mapped	Transit Expansion	Transit	BRT: Routes 90, 120, 470, 610, 628, 640, 653, 680, 688/689, 870, and 890; stations; layovers; and maintenance facilities	\$1,506
Not Mapped	Transit Expansion	Transit	Rapid Bus Services: Routes 2, 10, 11, 15, 28,30, 120, 471, 473, 474, 635, 636, 637, 638, 709, and 910	\$1,325
Not Mapped	Transit Expansion	Transit	Streetcars/Shuttles: Routes 448/449, 553, 554, and 555	\$923
Not Mapped	Other Transit	Transit	Intermodal centers and other improvements	\$10,245
Not Mapped	HOV Connectors		Various	\$1,392
Not Mapped	Freeway Connectors		Various	\$996
Not Mapped	Non-highway Goods Movement		Various	\$256
Not Mapped	Managed Lanes	SR 241	Toll lanes from Orange County to I-5	\$522

* All project costs are expressed in millions in year of expenditure dollars.

- **Interregional Planning:** SANDAG also pursues the development of partnerships with neighboring regions in order to promote coordinated planning efforts that are mutually beneficial to both partners. SANDAG's longest-running effort of this kind is the I-15 Interregional Partnership. This program aims to reduce the effects of interregional commuting by promoting a jobs-housing balance for residents of San Diego and western Riverside Counties by identifying and implementing short-, medium-, and long-range policy strategies.
- **LOSSAN Rail Planning:** The San Diego coastal rail corridor is the southern terminus of the 351-mile Los Angeles-San Diego-San Luis Obispo (LOSSAN) rail corridor. The LOSSAN corridor is the nation's second busiest rail corridor. Commuter and intercity passenger and freight rail services share the corridor. The 2050 RTP includes substantial improvements to the coastal rail corridor, each of which is phased in according to plans for expanding service for intercity, commuter, and freight services.
- **Tribal Planning:** Through its Borders Committee, SANDAG has been building a government-to-

government framework for engaging tribal nations at a regional level.

2.3 SCAG REGION

The SCAG region includes Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, as shown in Figure 2.6. SCAG is the largest MPO in the country with over 18 million residents, and is projected to grow to more than 22 million residents by 2035.

Sustainable Communities Strategy Snapshot

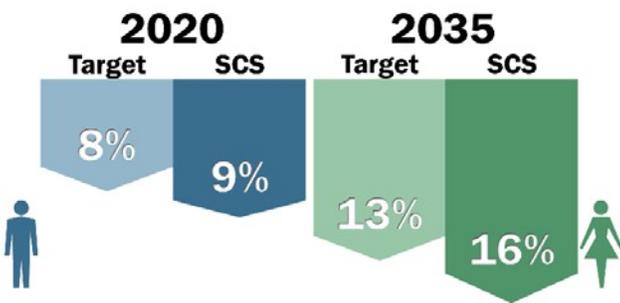
On April 4, 2012, the SCAG Regional Council adopted the 2012 RTP/SCS plan. This plan is the culmination of a multiyear effort involving stakeholders from across the SCAG Region. As shown in Figure 2.7, the 2012 RTP/SCS plan exceeds the GHG emission reduction targets set by the California ARB. The plan is projected to achieve 9 percent per capital GHG emission reduction by 2020 (compared to California ARB's 8 percent reduction target) and a 16 percent reduction by 2035 (compared to California ARB's 13 percent reduction target). It also fully integrates the



Figure 2.6 SCAG Region



Figure 2.7 SCAG SB 375 per Capita GHG Emission Reduction Targets



two subregional SCSs prepared by the Gateway Cities and Orange County Council of Governments.

Planned Initiatives and Investments

The 2035 RTP/SCS plan focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtown areas, and commercial corridors. It results in an improved jobs-housing balance, shorter travel distances, and more opportunities for transit-oriented development.

The land use vision includes more multifamily units than in the past. This development pattern complements the proposed transportation network that emphasizes transit system expansion. For example, in Riverside and San Bernardino Counties, 14 new BRT routes are planned, at least three of which have grants in place to study their feasibility in greater detail. Other key transportation strategies emphasized in the 2035 RTP/SCS plan include “active transportation,” transportation demand management, and system preservation, along with a goods movement environmental strategy to promote near-zero and zero-emission technologies. SCAG’s overall plan for transportation investments is shown in Figure 2.8. RTP investments total \$525 billion.



Figure 2.9 and Table 2.2 illustrate some of the major rail transit capital projects planned along interregional corridors within the SCAG region, and major investments in transit services that provide connectivity to interregional transit service. These projects are grouped into categories of Metrolink, Metro Rail, and statewide HSR alternatives based on the planned service operator.

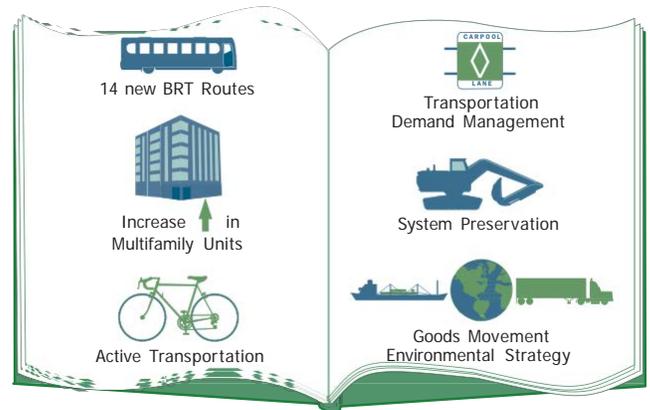
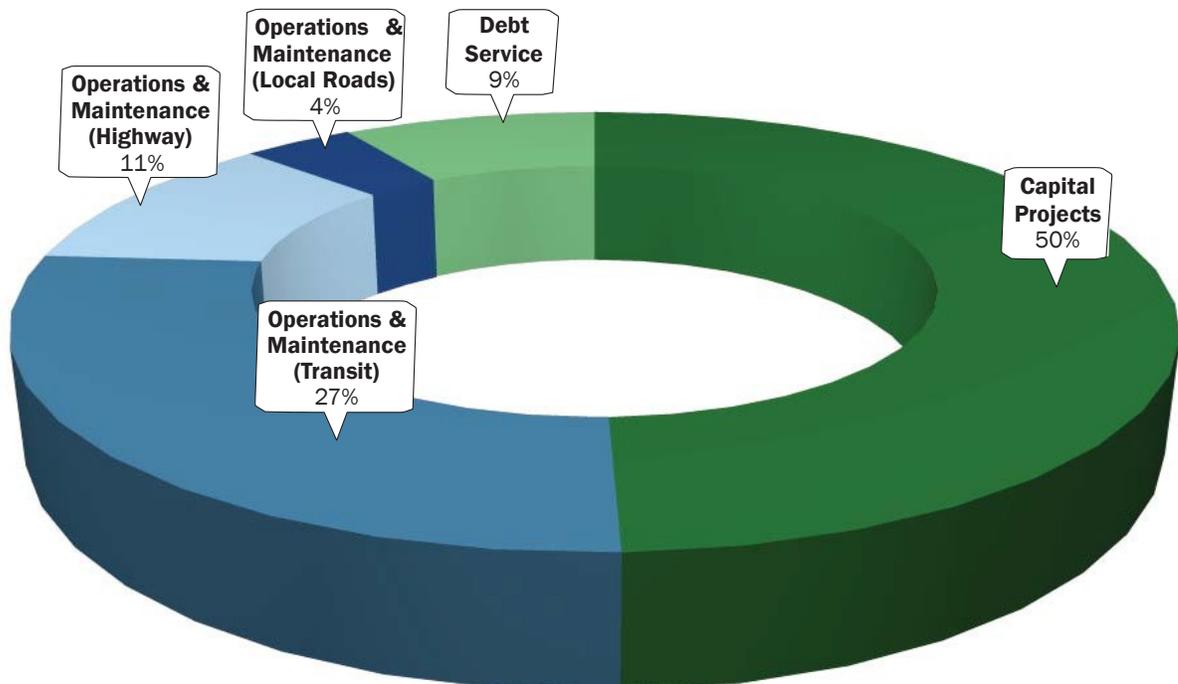


Figure 2.10 and Table 2.3 display some of the major highway projects planned along interregional corridors within the SCAG region. The highway corridor investments are grouped into three categories:

- Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges: Highway corridor upgrades without mainline capacity expansion or managed lanes.
- Managed Lanes: Carpool lanes without pricing; transit-only lanes within a freeway right-of-way, tolled lanes such as truck lanes or HOT lane, or separate toll roads.
- Multimodal Capacity Expansion: Construction of a new facility or additional capacity for a highway, crossing of a major waterway, rail tracks, and/or a port/channel.

Figure 2.8 SCAG RTP Expenditures by Investment Type



Note: Figure represents shares of planned investments between 2011 and 2035. Projected expenditures total \$524.7 billion. Numbers may not sum to total due to rounding.

TABLE 2.2 MAJOR REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SCAG REGION

Number	Project Category	Facility	Description	Cost (Millions)*
1	Metro Rail	New Facility	Eastside Transit Corridor (Phase 2): Extension of Metro Gold Line from Atlantic Station farther east; exact location TBD	\$2,490
2	Metro Rail	New Facility	Includes (4a) Metrolink and LOSSAN Corridor speed upgrades, and (4b) HSR alignment alternatives	\$6,600
3	Metro Rail	Transit	Exposition Light Rail Transit System (Phase 2) from Culver City to Santa Monica	\$1,318
4	HSR and Metrolink	Metrolink and TBD	Statewide HSR: Includes Metrolink and LOSSAN Corridor speed upgrades	\$47,716
5	Metrolink	I-5	High-frequency rail service from Laguna Niguel To Fullerton, corridor improvements, and rail feeder service	\$1,184
6	Metro Rail	New Facility	Regional Connector: Tunnel changes allow through movements of Blue, Gold, and Expo light rail lines from Alameda/1 st Street to 7 th Street/Metro Center	\$1,366
7	Metro Rail	LAX, I-405, I-110, Central City	Crenshaw/LAX Transit Corridor	\$1,733

* All project costs are expressed in millions in year of expenditure dollars.

Key Interregional Transportation Issues

The size and complexity of transportation systems in this region lead to a variety of interregional transportation issues and initiatives.

Key issues and partnerships include:

- Area wide freight mobility planning and financing, through collaboration with Caltrans, SANDAG, Kern COG, and other transportation agencies in the greater Southern California area.
- Improvements to binational border crossings between Imperial County and Mexico.

- Improvements to Southern California passenger rail service, through the LOSSAN Rail Corridor Agency.
- Increasing air passenger and air cargo within and to/from this area.
- Tribal government liaison on transportation planning issues.



Figure 2.10 Major State Highway Corridors Targeted for Investment in the SCAG Region

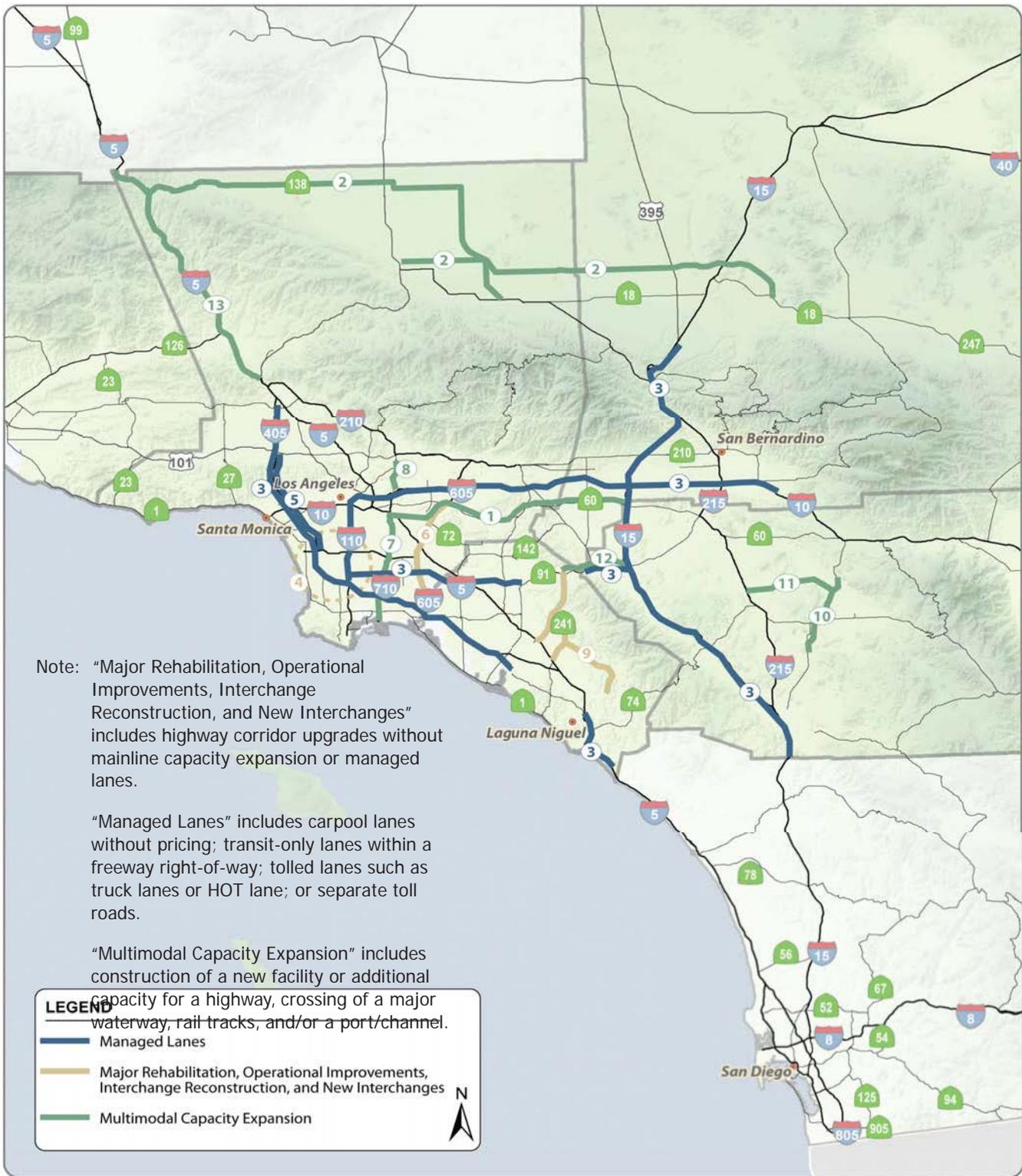


TABLE 2.3 MAJOR STATE HIGHWAY CORRIDORS TARGETED FOR INVESTMENT IN THE SCAG REGION				
Number	Project Category	Facility	Description	Cost (Millions)*
1	Multimodal Capacity	New Facility	East-West Freight Corridor: Build new corridor from I-710 to I-15, adjacent to UPRR and SR 60	\$15,293
2	Expansion	New Facility	High Desert Corridor: Construct new four- to six-lane facility from I-5 to SR 18	\$6,925
3	Multimodal Capacity	I-5, I-10, I-15, SR 91, I-110, I-405	Regional express/HOT lane network	\$9,500
4	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	I-405, I-110, I-105, and SR 91	I-405, I-110, I-105, and SR 91 Ramp and Interchange Improvements (South Bay)	\$1,265
5	Managed Lanes	I-405	I-405 HOV Lane northbound between I-10 and U.S. 101	\$1,034
6	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	I-605	I-605 "hot spot" interchanges in Gateway Cities	\$3,200
7	Multimodal Capacity Expansion	I-710	Widen and add two dedicated lanes (in each direction) for clean technology trucks and interchange improvements	\$5,580
8	Multimodal Capacity Expansion	SR 710	SR 710 North Extension (tunnel, alignment TBD)	\$5,636
9	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	SR 241	SR 241 Improvements	\$2,879
10	Multimodal Capacity Expansion	SR 79	SR 79 realignment and widening from two to four lanes	\$1,560
11	Multimodal Capacity Expansion	New Facility	CETAP** East-West Corridor: New mid county parkway between I-215 in Perris and SR 79 in San Jacinto, plus new lanes on adjacent segment of I-215	\$1,700
12	Multimodal Capacity Expansion	SR 91	CETAP Riverside County to Orange County: New corridor with two toll lanes in each direction, parallel to SR 91, from SR 241 to I-15	\$2,720
13	Multimodal Capacity Expansion	I-5	I-5 North capacity enhancements (Phases 1, 2, and 3) between SR 14 and Kern County	\$5,300***

* All project costs are expressed in millions in year of expenditure dollars.

** CETAP stands for Community and Environmental Transportation Acceptability Process.

*** This number represents the full project cost and is consistent with the Los Angeles County Metropolitan Transportation Authority's 2009 Long-Range Transportation Plan.

2.4 SACRAMENTO REGION

SACOG is the MPO for the Sacramento region. This region includes Sacramento, Sutter, Yolo, Yuba, and parts of El Dorado and Placer Counties, as well as 22 cities within these counties. The Sacramento region is shown in Figure 2.11.

Sustainable Communities Strategy Snapshot

The SACOG region's RTP/SCS plan exceeds the California ARB's per capita GHG emission reduction target of 7 percent for 2020 and expects to meet the target of 16 percent in 2035. SACOG's GHG emission reductions are displayed in Figure 2.12. The final RTP/SCS was adopted in April 2012. The RTP projects additional benefits, including an 82 percent increase in transit ridership and a 13 to 15 percent decrease in vehicle miles of travel (VMT) in the region by 2035.

Figure 2.11 Sacramento Region

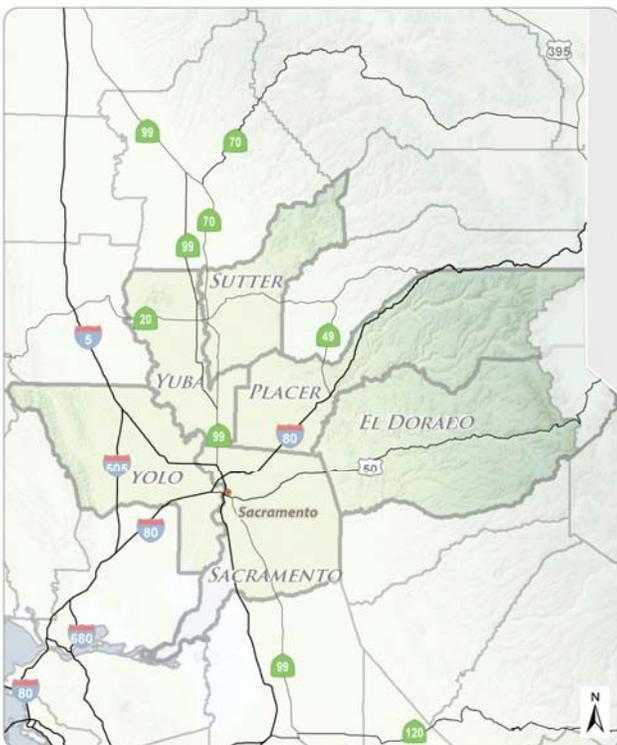


Figure 2.12 SACOG SB 375 per Capita GHG Emission Reduction Targets



Planned Initiatives and Investments

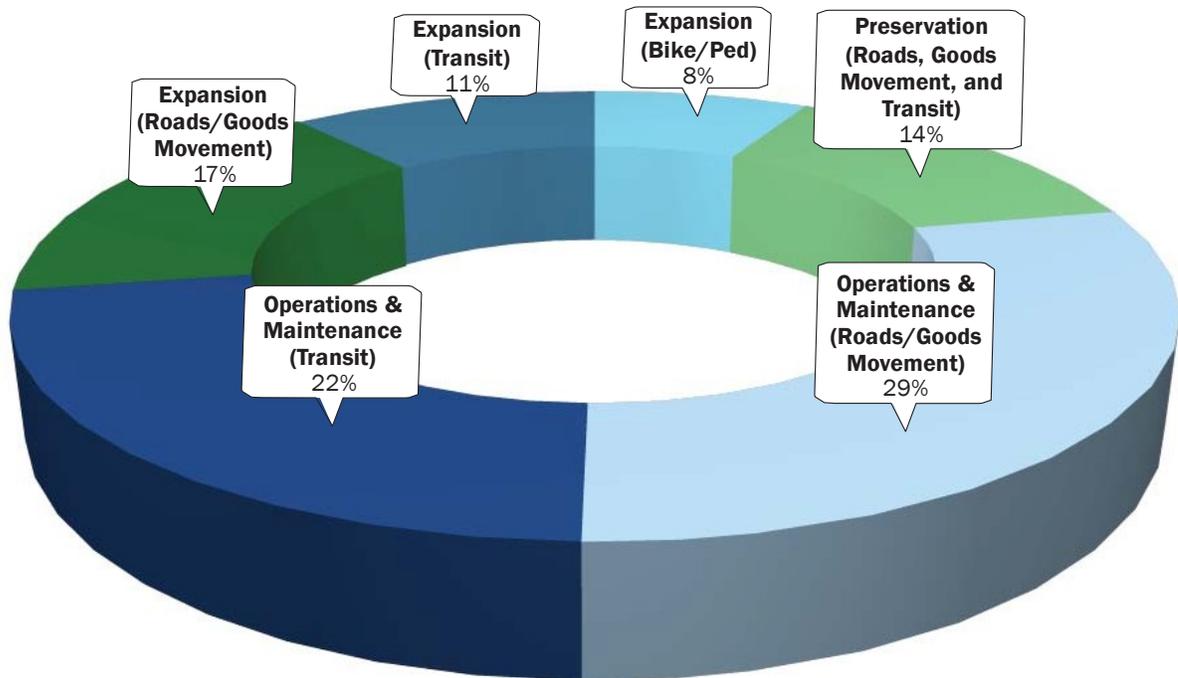
SACOG's 2035 RTP/SCS land use vision includes more small lot and attached housing than in the past, and a greater emphasis on infill development. The plan focuses investment on system maintenance and operation and invests more in transportation choices (including a shift of \$2.9 billion in flexible funds from roadway to transit projects, as compared to the last RTP). SACOG's RTP states that the region is "making more with less" by improving performance across all indicators within its constrained budget.

The plan also focuses on improving the efficiency of existing transit services by reinvesting in the most productive transit routes. This reinvestment will generate additional ridership and revenue, thereby reducing the overall cost of providing transit service. Due to lower growth projections, the amount of funding projected for this

RTP is less than the prior plans. Figure 2.13 shows the major RTP expenditure categories, totaling to an investment of \$49.8 billion in year of expenditure dollars.

SACOG's RTP states that the region is "making more with less" by improving performance across all indicators within its constrained budget.

Figure 2.13 SACOG RTP Expenditures by Investment Type



Note: Percentages may not sum to 100 percent due to rounding.

Figure 2.14 and Table 2.4 illustrate some of the major capital projects planned along interregional corridors within the SACOG region. The corridor investments are grouped into four categories:

- Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges: Highway corridor upgrades without mainline capacity expansion or managed lanes.
- Managed Lanes: Carpool lanes without pricing; transit-only lanes within a freeway right-of-way, tolled lanes such as truck lanes or HOT lane, or separate toll roads.
- Rail Transit Expansion: New construction, extension, or major upgrade (such as double tracking) of a light rail, rapid transit, commuter rail, or intercity passenger rail line.
- Multimodal Capacity Expansion: Construction of a new facility or additional capacity for a highway, crossing of a major waterway, rail tracks, and/or a port/channel.

Key Interregional Transportation Issues

The 2035 RTP/SCS projects and policies will result in decreased long-distance truck travel and congestion-related delay. By improving transportation and land use integration, freight mobility in the region on U.S. 50, Interstate 80 (I-80), and I-5 will improve. Improved mobility is expected to increase the amount of locally sourced products and warehousing. Such increases can decrease longer distance shipments from outside the region, and shift some truck traffic to regional corridors.

TABLE 2.4 MAJOR STATE HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SACOG REGION

Number	Project Category	Facility	Description	Cost (Millions)*
1	Managed Lanes	I-80, U.S. 50	Davis to West Sacramento HOV lanes	\$167
2	Managed Lanes	U.S. 50	SR 99/U.S. 50 junction to Sunrise Boulevard HOV lanes	\$198
3	Managed Lanes	U.S. 50	El Dorado Hills to Bass Lake Road HOV lanes	\$105
4	Managed Lanes	I-80	Sacramento River to Business-80 HOV lanes	\$63
5	Managed Lanes	I-80	Sacramento/Placer County Line to SR 65 HOV lanes	\$83
6	Managed Lanes	I-5	Elk Grove to U.S. 50 and Richards Boulevard to I-80 HOV lanes	\$520
7	Rail Transit Expansion	Transit	Sacramento RT Green Line: Extend light rail from Richards Boulevard to Sacramento International Airport	\$1,170
8	Rail Transit Expansion	Transit	Sacramento RT South Line: Extend light rail from Meadowview to Cosumnes River College	\$270
9	Rail Transit Expansion	Transit	Sacramento RT Gold Line: Construct grade separations at major cross-roads	\$147
10	Rail Transit Expansion	Transit	Streetcar between West Sacramento and Downtown/Midtown Sacramento	\$183
11	Rail Transit Expansion	Transit	Sacramento Intermodal Transportation Facility	\$536
12	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	U.S. 50	Sacramento (Watt Avenue) to Placerville	\$761
13	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	I-5	Elk Grove to Woodland	\$455
14	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	I-80	Truck climbing lanes (Colfax area)	\$32
15	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	SR 99	Galt to U.S. 50	\$104
16	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	SR 99	I-5 to Sutter/Colusa County Line	\$333
17	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	SR 70	SR 65 to SR 70/99 junction	\$50

* All project costs are expressed in millions in year of expenditure dollars.

TABLE 2.4 MAJOR STATE HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SACOG REGION (CONTINUED)

Number	Facility	Project Category	Description	Cost (Millions) *
18	I-80	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	Sacramento River to SR 65	\$131
19	SR 65	Major Rehabilitation, Operational Improvements, Interchange Reconstruction, and New Interchanges	I-80 to SR 70	\$30
20	New	Multimodal Capacity Expansion	Sacramento River Crossings between Sacramento and West Sacramento	\$502
21	Local Road Upgrades	Multimodal Capacity Expansion	Southeast Connector between I-5 (Elk Grove) and U.S. 50 (El Dorado County)	\$553
22	SR 65	Multimodal Capacity Expansion	Lincoln Bypass	\$322
23	New	Multimodal Capacity Expansion	Placer Parkway (Watt Avenue to SR 65)	\$70
24	SR 20/ SR 70	Multimodal Capacity Expansion	Third Feather River Bridge between Yuba City and Marysville	\$77
25	Ship Channel	Multimodal Capacity Expansion	Sacramento River Ship Channel deepening	\$70

* All project costs are expressed in millions in year of expenditure dollars.

2.5 SAN FRANCISCO BAY AREA REGION

This region, as shown in Figure 2.15, covers the nine-county San Francisco Bay Area comprised of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. The MTC is the MPO for the Bay Area Region.

Sustainable Communities Strategy Snapshot

The MTC and its partner agency, the Association of Bay Area Governments, are developing “Plan Bay Area,” the RTP/SCS plan for the Bay Area region, to meet GHG emission reduction targets set by the California ARB (Figure 2.16). A preferred land use scenario and a draft transportation investment strategy were released in April 2012. The draft investment strategy includes the following proposals for meeting GHG emission reduction targets and responding to public input:

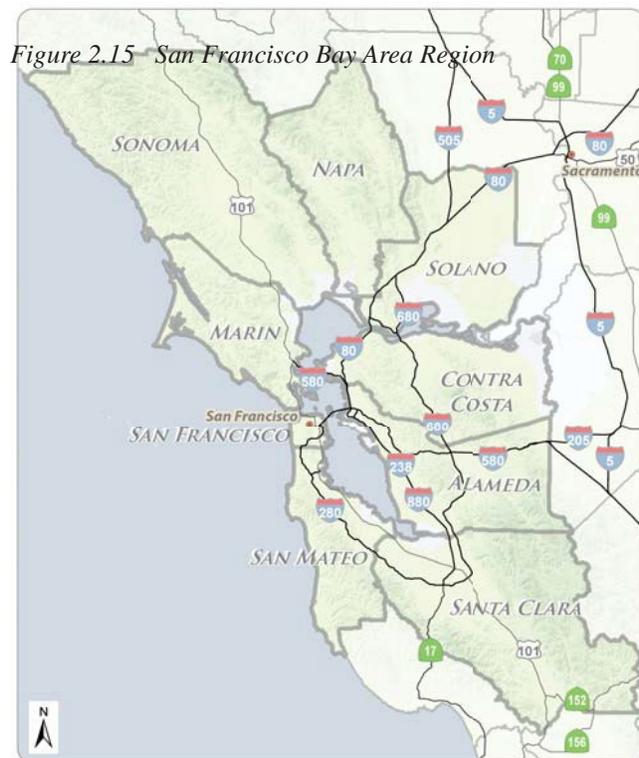
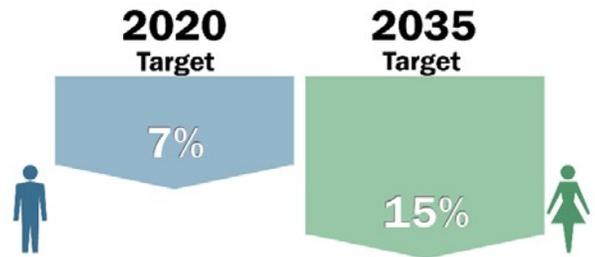


Figure 2.15 San Francisco Bay Area Region

Figure 2.16 MTC SB 375 per Capita GHG Emission Reduction Targets



- Transit expansion and service upgrades serving established communities, job centers, environmental justice communities of concern, and Priority Development Areas.⁷
- A grant program (One Bay Area Grants) to reward jurisdictions that accept housing allocations through the Regional Housing Need Allocation process and produce housing using transportation dollars as incentives.
- Continued emphasis on the long-standing “Fix-It First” policy, which would result in 88 percent of Plan Bay Area revenue being directed to operating and maintaining existing road and transit networks.



⁷ Priority Development Areas are locally identified infill development opportunity areas that are within an existing community, near fixed transit or served by comparable bus service, and planned for more housing.

MTC Snapshot in Time



Additional public and stakeholder input, plus preparation of an environmental document, is scheduled through 2012. The final plan is scheduled for adoption in spring 2013.

Planned Initiatives and Investments

MTC has not finalized the investments that will be included in Plan Bay Area. MTC currently is exploring a variety of strategies, including transit frequency and capacity expansions, highway and interchange improvements, “active transportation” investments, and congestion pricing.

Key Interregional Transportation Issues

MTC and its partners are exploring ways to address interregional travel issues through Plan Bay Area and related activities. Major efforts include the Freeway Performance Initiative, Caltrain improvements, and the Smart Mobility Partnership. The Freeway Performance Initiative applies operational improvements to major corridors, such as I-80 from the Carquinez Bridge to the Solano/Yolo County line. The Caltrain improvements will integrate commuter rail with planned HSR services along the Peninsula. The Smart Mobility Partnership is a joint effort of Caltrans and several counties to investigate the feasibility of a SR 152 Trade Corridor from SR 99 to U.S. 101.

The regional express lane network will convert existing high-occupancy vehicle (HOV) lanes to express lanes (also known as high-occupancy toll or HOT lanes) and build new express lanes to close gaps and extend the system over a period of 25 years. The system will reduce congestion on all lanes and offer a reliable express lane travel option for express buses, carpools, and drivers who choose to pay a toll on major interstate and interregional routes including I-80, I-880, and I-680.

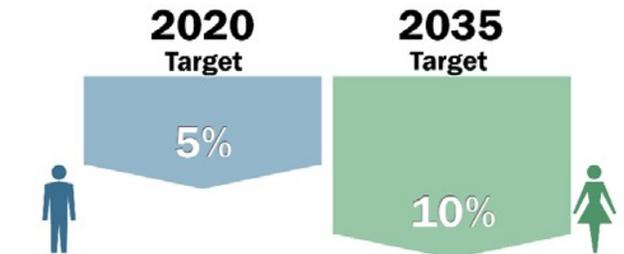
2.6 SAN JOAQUIN VALLEY REGION

The San Joaquin Valley (Valley) region, shown in Figure 2.17, includes eight single-county MPOs in Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties. While these MPOs are grouped together in this report, there is a great diversity of issues and constraints facing each MPO. For example, the north end of the Valley has strong connections to jobs in the Sacramento and Bay Area, whereas the economies of the central and southern portions of the Valley are more focused on agriculture and oil. Even with these differences, the region's MPOs work together on many planning activities such as the Route 99 Corridor Business Plan, regional blueprints, and goods movement studies.

Figure 2.17 San Joaquin Valley Region



Figure 2.18 SB 375 Provisional per Capita GHG Emission Reduction Target for San Joaquin Valley MPOs



Source: San Joaquin Council of Governments.

targets by October 2012. The provisional California ARB targets shown in Figure 2.18 (5 percent and 10 percent reduction in 2020 and 2035, respectively) will be revised as new modeling tools are available.

Planned Initiatives and Investments

transportation and land use plans.

Sustainable Communities Strategy Snapshot

The RTP/SCS process is in the early stages in the San Joaquin Valley. Most Valley MPOs are scheduled to adopt their RTP/SCS plans in December 2013 with Kings County scheduled to adopt their plan in 2014. The MPOs are collaborating through a voluntary process to finalize their GHG emission reduction

The San Joaquin Valley Model Improvement Program, funded in part with an SGC grant, was finalized in spring 2012. It provides enhanced transportation forecasting capabilities that allow more accurate and consistent assessments of GHG emissions resulting from

Ongoing initiatives relevant to the RTP/SCS process include:

- The San Joaquin Valley Model Improvement Program, funded in part with an SGC grant, was finalized in spring 2012. It provides enhanced transportation forecasting capabilities that allow more accurate and consistent assessments of GHG emissions resulting from transportation and land use plans.
- New land use, transportation data, and post processing tools provided by a Caltrans-funded effort became available to Valley MPOs in April 2012. These tools will allow MPOs to adequately evaluate effects of integrated transportation and land use strategies.⁸
- A \$4 million Smart Valley Places Grant from the U.S. Department of Housing and Urban Develop-

⁸ For more information on statewide efforts to improve land use and transportation data and software tools for local and regional integrated planning in California, see <http://www.dot.ca.gov/hq/tpp/offices/ocp/projects.html>.

San Joaquin Valley Snapshot in Time



ment (HUD) is supporting 14 larger Valley cities on SCS-relevant planning projects. A study funded by the SGC called the Blueprint Implementation is now underway. It will support SCS-relevant planning projects in 46 smaller Valley cities, with completion scheduled for December 2012.

- New demographic forecasts for the eight counties will be finalized in spring 2012, providing a base for consistent RTP/SCS growth forecasts that reflect the recent recession.
- HSR is scheduled to begin construction in the Valley by 2013. The Valley MPOs and their member agencies have been actively engaged in planning for HSR for many years. Station-area plans may be key elements of Valley RTP/SCS plans.
- Stockton has a BRT system and is planning expansion. Fresno has secured State and federal funding for a two-line BRT starter system, and Kern COG is planning a comprehensive BRT network. These systems will be important components of these MPOs RTP/SCS plans.
- The San Joaquin Council of Governments' (SJCOG) Smart Growth Incentive Program promotes projects that help local agencies better integrate transportation and land use by offering funding for planning and infrastructure projects that support infill development, the re-use of existing developed areas, neighborhood revitalization,

and downtown improvements.

Key Interregional Transportation Issues

Freight mobility and long-distance commuting are top interregional transportation issues in the San Joaquin Valley. This emphasis is the result of spillover residential growth from adjacent regions (Bay Area, Sacramento, and Los Angeles), as well as growth in warehousing and agriculture.

The SR 12 Comprehensive Corridor Study was a collaboration of Caltrans Districts 3, 4, and 10, the Solano Transit Authority, SJCOG, MTC, and SACOG to improve safety and operations along SR 12 from SR

29 to I-5. The plan will provide both near-term and long-term recommendations to enhance safety, improve



corridor mobility (pedestrian, public transit, and bike and trail improvements), improve pavement conditions, and address future growth and development along the corridor through improvements such as additional travel lanes, bike lanes, pedestrian facilities, and others.

SJCOG has completed a Caltrans-funded I-580 Multimodal Interregional Corridor Study analyzing traffic on I-580 over the Altamont Pass, a key corridor for long-distance commuting. The study also explored how multimodal strategies could improve the operational integrity of the I-580/I-205 corridor for both commuters and freight. Additionally, the eight MPOs and Caltrans are working on a San Joaquin Valley Interregional Goods Movement Plan to develop multimodal freight infrastructure for the Valley.

- SLOCOG completed its most recent RTP in late 2010, which included a “pre-SCS.” SLOCOG

2.7 CENTRAL COAST REGION

The Central Coast region includes counties from Santa Cruz southward to Santa Barbara, as shown in Figure 2.19. AMBAG is the MPO for Monterey, San Benito, and Santa Cruz counties. SLOCOG and SBCAG are the MPOs for San Luis Obispo and Santa Barbara counties, respectively.

Sustainable Communities Strategies Snapshot

The three MPOs in the Central Coast Region are developing their RTP/SCS plans. All these plans will be complete by 2014:

- SBCAG began work on its 2040 RTP/SCS plan in 2011 and developed a regional “green print” that illustrated locations unsuitable for development due to environmental constraints. The agency also developed updated growth forecasts and a public participation plan.

Figure 2.19 Central Coast Region



is engaging its member cities in discussions of strategic growth principles as part of the development of growth scenarios.



Central Coast Snapshot in Time



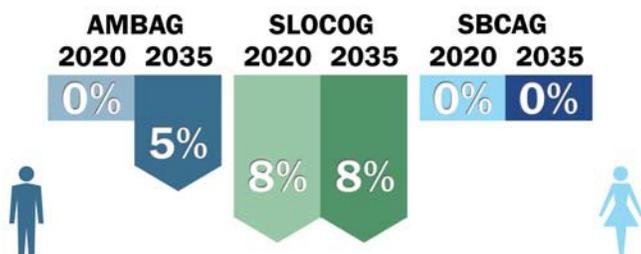
- AMBAG develops a Metropolitan Transportation Plan (MTP) based on the RTPs developed by the Monterey, San Benito, and Santa Cruz RTPAs. AMBAG currently is working with these agencies to identify goals and objectives for the next MTP. AMBAG also has been engaged in regional blueprint efforts, and has convened an expert panel to evaluate smart growth policies as part of developing regional growth scenarios.

Figure 2.20 indicates the GHG emission reduction targets set by the California ARB for each MPO.

Planned Initiatives and Investments

- Funding for regional investments is limited in Monterey and San Luis Obispo Counties, because these counties do not have sales tax dollars devoted to transportation improvements. SBCAG passed a one-half-cent sales tax measure

Figure 2.20 AMBAG, SLOCOG, and SBCAG SB 375 per Capita GHG Emission Reduction Targets



(Measure A) in 2008 providing more than \$1 billion of estimated local sales tax revenues for transportation projects in Santa Barbara County over 30 years.

- In Monterey County, portions of U.S. 101 have been upgraded to freeway status. New car pool lanes are being considered for U.S. 101 in Santa Barbara County as well as SR 1 in Santa Cruz County. Operational improvements are planned for SR 17 in Santa Cruz.
- Conventional passenger rail improvements planned in San Luis Obispo and Santa Barbara Counties would link these counties to the SCAG Region as part of the existing Surfliner Route. In addition, a passenger rail extension from San Jose is planned to extend to Monterey and San Benito Counties, although route and operation plans are still in development.

Key Interregional Transportation Issues

Interregional commuting to and from the Silicon Valley is a major component of daily travel in the AMBAG Region. Each of the key AMBAG interregional routes (SR 17, U.S. 101, SR 25, and SR 152/SR 156) has opportunities for operational improvements.

Interregional commuting to and from the Silicon Valley is a major component of daily travel in the AMBAG Region.

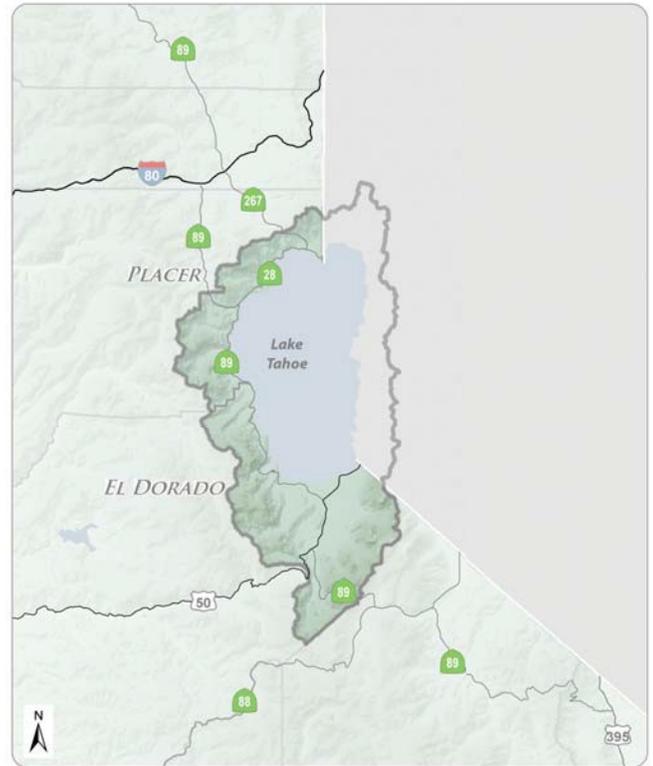
SLOCOG's key interregional transportation corridors include SR 41, SR 46, and SR 58, which connect to the San Joaquin Valley, as well as U.S. 101 connecting to the Monterey Bay area and Southern California. A major project to widen the Santa Maria River Bridge on U.S. 101, which connects the fastest growing areas of San Luis Obispo and Santa Barbara counties, is underway after having received Corridor Mobility Improvement Account and Federal funding.

Santa Barbara also faces interregional transportation issues along U.S. 101 south to Ventura County. Ventura County workers travel to Santa Barbara for jobs, and tourism-related traffic is a major issue affecting these travel corridors, particularly on Friday and Sunday evenings.

2.8 LAKE TAHOE REGION

The Lake Tahoe Region, displayed in Figure 2.21, includes the Lake Tahoe watershed, an area under the jurisdiction of the TRPA. TRPA was formed in 1969 through a bistate compact between California and Nevada, and is mandated to protect the environment of the Lake Tahoe Basin via land use regulations. TRPA is one of only a few watershed-based regulatory agencies in the United States.

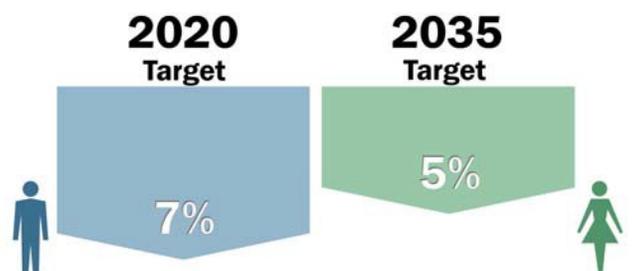
Figure 2.21 Lake Tahoe Region



Sustainable Communities Strategy Snapshot

TRPA is developing an RTP/SCS plan as a component of the long-range regulatory plan (Regional Plan Update) for the bistate region, which includes land use and growth assumptions. The Draft RTP/SCS plan was released in April 2012, and the final plan is scheduled for adoption in late 2012. Figure 2.22 shows the GHG emission reduction targets the plan is expected to meet.

Figure 2.22 Tahoe SB 375 per Capita GHG Emission Reduction Targets



Lake Tahoe Region Snapshot in Time



Planned Initiatives and Investments

- Incline Village Gateway.

The Regional Plan Update focuses on specific objectives to measure progress on a variety of environmental indicators beyond GHG emission reduction and air quality. Priorities for the regional plan update include:

- Focus on regional environmental gain and promoting sustainable redevelopment in town centers.
- Transition to more local government involvement and a more streamlined approach to the TRPA regulatory land use project approval process.
- Explore TRPAs authority to implement Transfer of Development Rights, which would reshape the current development footprint by providing incentives for more sustainable development within Tahoe's core community centers.

Major proposed transportation investments include:

- U.S. Highway 50 South Shore Community Revitalization Project (Stateline Area).
- U.S. Highway 50 Water Quality Improvement Project
Phase I ("Y" to Trout Creek).
- SR 89/Fanny Bridge Community Revitalization Project.
- Kings Beach Commercial Core Improvement Project.

- Operational expansions for Tahoe Area Regional Transit and BlueGO.
- Lake Tahoe Waterborne Transit.
- Bus shuttle from Sacramento Airport to South Lake Tahoe.
- Sidewalk improvements in Kings Beach, South Lake Tahoe, and Incline Village.
- Nevada Stateline-to-Stateline Bikeway.
- Dollar Creek Shared-Use Trail.
- Sawmill Bicycle Path, South Tahoe Greenway Trail, and Lake Tahoe Boulevard Enhancement Project.

Key Interregional Transportation Issues

TRPA is discussing the formation of an Interregional Travel Coalition between the Nevada counties near Lake Tahoe, as well as counties in the Sacramento region along the I-80 corridor.

This coalition would examine recreational travel issues in the Tahoe region and seek joint funding opportunities for projects to address interregional travel.

2.9 NORTHERN SACRAMENTO VALLEY REGION

This region, shown in Figure 2.23, includes Butte, Colusa, Glenn, Shasta, and Tehama counties. Two MPOs, BCAG and SCRTPA, coordinate regional

transportation planning activities within the metropolitan portions of the region.

Sustainable Communities Strategy Snapshot

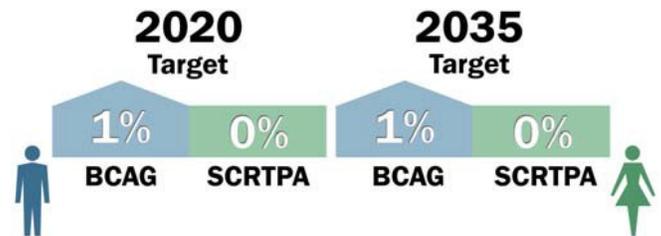
Of the Northern Sacramento Valley counties, both Shasta and Butte are subject to the requirements of SB 375. Figure 2.24 shows the GHG emission

Figure 2.23 Northern Sacramento Valley Region



reduction requirements they must meet. SCRTPA is developing a “sketch” version of the RTP/SCS plan by fall 2012 for local agency dialogue and prioritization of areas targeted for urban intensification. This preliminary plan also is intended to incorporate their three community values of economic development, natural setting, and mobility. The final RTP/SCS plan update will be adopted by fall 2014. Investments in model improvements will enable SCRTPA to better analyze GHG emissions and VMT.

Figure 2.24 BCAG and SCRTPA SB 375 per Capita GHG Emission Reduction Targets



BCAG will have a final RTP/SCS plan by December 2012, and currently is preparing a draft RTP/SCS plan to present at public workshops. Colusa and Glenn counties are coordinating their blueprint efforts with an estimated completion date of fiscal year 2013/2014.

The region’s population is projected to increase by about 10,000 people over the next 25 years, and an estimated 47,000 homes will be needed to accommodate that growth. BCAG’s Planning Directors Group (PDG), consisting of local jurisdiction planning staff and staff from the Butte Local Agency Formation Commission, will be the primary group for developing the land use and housing components of the SCS. The PDG members also are partners in an SGC grant to collaborate in the development of the 2012 SCS. The “Conceptual SCS” scenario incorporates the local jurisdictions newly approved preferred general plan land use scenarios and housing elements.



This scenario is strictly land use-based and does not modify the adopted 2008 BCAG RTP transportation network. The Conceptual Scenario demonstrates the potential for GHG emission reduction of up to 36 percent from the 2006 base year by 2035.

Planned Initiatives and Investments

The MPOs in the Northern Sacramento Valley are engaged in capacity-building activities relating to SCS development. These activities include initiating new grants from Caltrans for regional land use blueprints, undertaking geographic information systems (GIS) analyses of land use trends, updating the capabilities of regional travel demand models, and applying UPLAN, an urban growth model.

All of the counties in the Northern Sacramento Valley region received Blueprint Grant funding. All of the counties also are involved in the North State Super Region's Economic Development Study, which will identify relationships between transportation investment and economic development patterns.

Key Interregional Transportation Issues

One significant travel issue in this region is providing



transit access across widely distributed rural communities. For example, Glenn County is considering a study to evaluate transit use in surrounding rural counties. Shasta County's Blueprint Plan, ShastaForward, lists improved interregional travel connections (airports, passenger rail travel, and highway bottleneck removal) as a major priority. These investments are seen as an important method of improving the economic opportunities of county residents.

2.10 NORTH STATE REGION

This area includes Alpine, Amador, Calaveras, Del Norte, Humboldt, Inyo, Lake, Lassen, Mariposa, Mendocino, Modoc, Mono, Nevada, Plumas, Sierra, Siskiyou, Trinity, and Tuolumne Counties. There are no MPOs in the region, but each county is represented by an RTPA.

Figure 2.25 North State Region



North State Region Snapshot in Time



GHG Emission Reduction Strategies Snapshot

Rural RTPAs, such as those in the North State region, are not subject to SB 375. Due to this status, relatively few counties have major initiatives or policies directed at reducing transportation-related GHG emissions. Most areas have RTPs that minimally address GHG emissions, but these areas expect limited growth compared to more populated regions of California. Large sections of land in the rural areas of the North State are publicly owned, much of it by federal agencies. These lands are thus outside of RTPA influence. In Mono County, for example, 98 percent of land is publicly owned. Depending on funding, most of these RTPAs have plans to increase interregional and long-distance transit service, which could reduce VMT rates.

Planned Initiatives and Investments

Key tools or initiatives either in place or underway for many of the North State Rural RTPAs include:

- UPLAN, a land use modeling tool provided by the University of California (UC) Davis, has been used by several RTPAs to create regional blueprints. The tool forecasts the extent and location of future development using such factors as demographic data and transportation accessibility.
- The North State Super Region Economic Development Study will identify relationships between transportation investment and economic development patterns. Sixteen counties from the North State and Northern

Sacramento Valley regions will participate.

- One major planned transportation infrastructure investment is the Willits Bypass in Mendocino County. This new bypass will allow intraregional and interregional traffic to avoid the narrow and congested U.S. 101 alignment through downtown Willits.

Key Interregional Transportation Issues

While the rural RTPAs vary both geographically and in their future plans, several common transportation issues exist in addition to limited funding:

- Local economies tend to be service-based, and are increasingly dependent on tourism.
- System maintenance, safety, and noncapacity-increasing enhancements to existing roadway networks are the focus in most communities.
- Retirees are the fastest growing population segment in many areas. There is a concern with providing more on-call medical transport as well as other transit service in the future.

Other local issues include sea level rise for populated coastal areas, year-round mobility in mountainous areas with harsh weather conditions, and forest fires and their effects on safety and mobility.

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Sustainable Communities Strategies Influences on the Interregional Transportation System

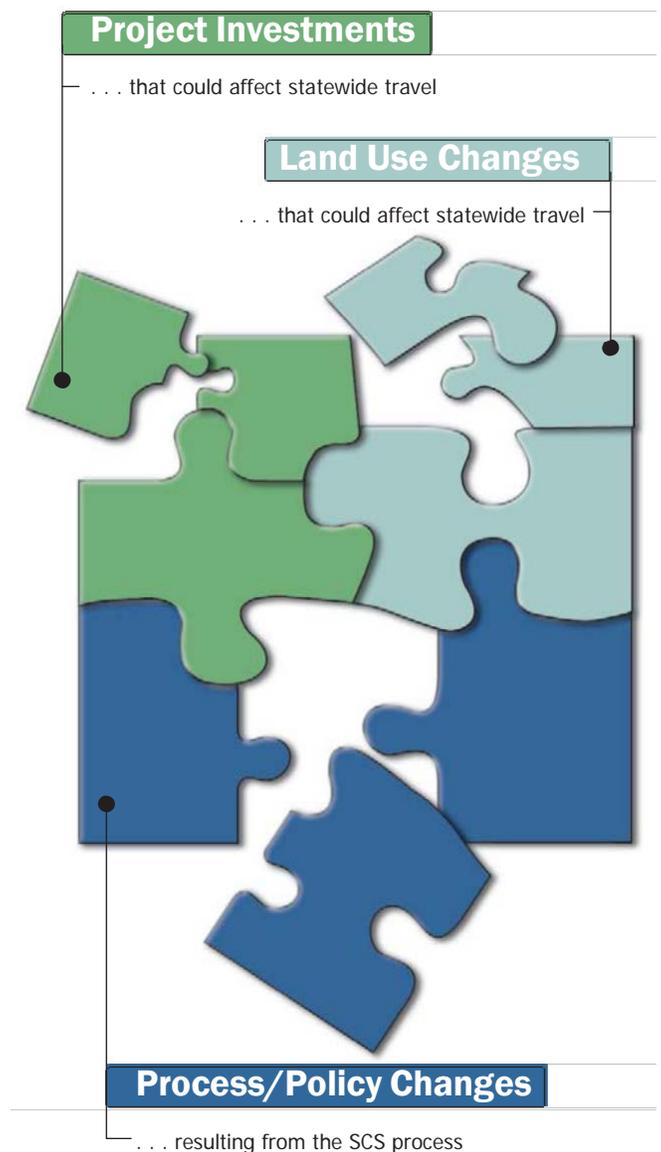
3.1 INTRODUCTION

The previous section provided a snapshot of RTP, SCS, and APS planning activities that have been completed or are in development under California SB 375. The SB 375 process is intended to produce changes in regional policy, land use, and project investments to support greater levels of GHG emission reductions. This section examines major themes emerging from the three regions with complete RTP/SCS plans,⁹ and discusses the plans potential influence on the statewide transportation system, and interregional travel. This section also includes several themes that predate the SB 375 process, but could influence GHG emissions or statewide travel patterns. For example, emphasis on maintenance and preservation of existing infrastructure in these regions is an ongoing trend that preceded creation of SCSs.

The themes in this section are organized into three groups:

- RTP/SCS project investments that could influence statewide travel.

⁹ These three MPOs are SANDAG, SCAG, and SACOG.



- RTP/SCS land use changes that could influence statewide travel and the need for future transportation investments.
- Process/policy-related changes resulting from the SCS process.

RTP/SCS plans.

The following information is presented for each theme:

- Summary of the theme, including supporting evidence and examples.
- Potential influences on the statewide transportation system.
- Potential implications for State agencies. A

general discussion of the role Caltrans and other State agencies can play in supporting SCS implementation and in addressing gaps in the SCS process follows the analysis of RTP/SCS themes. This section concludes with a summary of key points.

The SCS influences discussed in this section are preliminary and reflect trends emerging from SACOG, SANDAG, and SCAG, which are the three MPOs with completed RTP/SCS plans. These three MPOs, plus the MTC, represent a relatively large share of total travel and GHG emissions in California (see Figure 3.1).

3.2 PROJECT-RELATED THEMES

Investments in Transit Capacity and Transit Connections

MPOs are focusing limited discretionary funding on investments in transit capacity, frequency, and in transit connections. After maintenance and operations, SANDAG, SCAG, and SACOG dedicated the largest portion of their RTP funding to investment in transit capital and operations. MPOs also are including major transit capacity and frequency expansions in their

Table 3.1 lists major transit capital projects in the three completed SCS plans. This list focuses on major projects in each MPO and is not comprehensive. Currently adopted RTP/SCS plans anticipate substantially improved high-capacity transit access at several major airports (Sacramento, Los Angeles, and San Diego), and reconstruction plans for San Diego Lindbergh International Airport. This reconstruction would place a new passenger terminal at a site that will allow direct access from light rail, commuter rail, and statewide HSR.

investments... will enhance statewide door-to-door travel options, such as air or conventional and high-speed passenger rail, reducing the need for long-distance automobile travel. Such an outcome could reduce auto trips and related GHG emissions on the State Highway System.

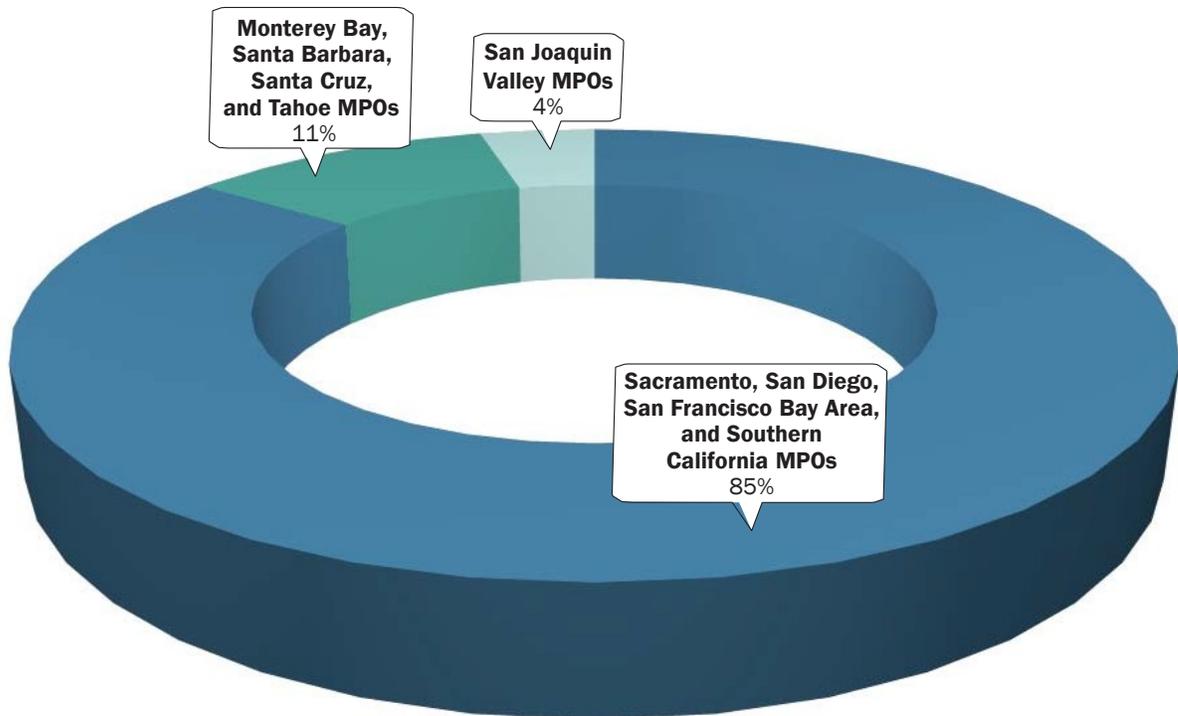
Potential Influences on the State Transportation System

Regional investments in transit capacity, frequency, and connectivity may influence statewide travel patterns and travel mode choice. The projects shown in Table 3.1 provide local connectivity and accessibility to support interregional passenger rail, air, and bus. Planned investments in high-capacity transit at the regional level will have a more substantial influence on statewide travel patterns as California's conventional and HSR systems are developed and expanded in the coming years.

For example, the California High-Speed Rail Authority's (CHSRA) decisions to locate stations within developed urban areas (rather than suburban locations) was

Regional transit

Figure 3.1 SANDAG, SACOG, SCAG, and MTC Regional Share of California VMT/GHG



Source: May 2010 Memorandum to Lynn Terry, ARB Executive Officer, from executive directors of MTC, SANDAG, SACOG, and SCAG. San Joaquin Valley MPOs include Fresno, Kern, Kings, Madera, Merced, Tulare, San Joaquin, and Stanislaus County.

partly guided by a desire to integrate a statewide passenger rail system with strong local transit systems providing access to interregional transportation hubs. The importance of this integration was reiterated in the CHSRA's Business Plan:

"A key state and Authority goal is the HSR's integration within a larger statewide rail strategy. This business model includes working arrangements and agreements with other state agencies, regional transportation authorities, existing commuter rail systems, and other transit systems."

Regional transit investments, such as those shown in Table 3.1, will enhance statewide door-to-door travel options, such as air or conventional and high-speed passenger rail, reducing the need for long-distance automobile travel. Such an outcome could reduce auto

trips and related GHG emissions on the State Highway System.

Implications for State Agencies

The new “Blended Scenario” concept for HSR provides an overall framework for a statewide passenger rail system that integrates high-speed trains with existing intercity and commuter/regional rail systems. This integration includes coordinated infrastructure, scheduling, ticketing and operations.

Given the substantial commitment of State and federal funding, Caltrans, CHSRA, and other State agencies will be active participants in the planning, project development, and funding of the planned regional transit capacity projects.

The projects listed in Table 3.1 are key to implementing the “Blended Scenario” concept. Under this concept,

TABLE 3.1 MAJOR TRANSIT CAPITAL PROJECTS FOR SANDAG, SCAG, AND SACOG

Project Name	Description	Cost (Millions)*
SANDAG		
COASTER Double Tracking	Double tracking, grade separations, station and platform improvements, Del Mar Tunnel, and quiet zone improvements	\$4,979
SPRINTER Double Tracking	Double tracking and grade separations	\$1,483
Midcoast Trolley	LRT extension along the Midcoast	\$1,642
Orange and Blue Trolley Lines	System rehabilitation, grade separations and express service	\$3,045
Trolley	San Diego State University to Downtown via Mid-City and El Cajon/Park Boulevards	\$4,009
Trolley	University Town Center to Mira Mesa via Sorrento Mesa/Carroll Canyon	\$1,556
Trolley	University Town Center to San Ysidro via Kearny Mesa, Mission Valley, Mid-City, Southeastern San Diego, National City/Chula Vista via Highland Avenue/4 th Avenue	6,043
Trolley	Pacific Beach to El Cajon via Clairemont, Kearny Mesa, Mission Valley, and San Diego State University	\$1,978
Trolley Italy	Downtown Trolley Tunnel (12 th and Imperial Transit Center to County Center/Little Trolley Station)	\$4,293
Statewide HSR	Statewide HSR system within SANDAG region	\$16,664
BRT	Routes 90, 120, 470, 610, 628, 640, 653, 680, 688/689, 870, and 890, stations, layovers, and maintenance facilities	\$1,506
Rapid Bus Services	Routes 2, 10, 11, 15, 28,30, 120, 471, 473, 474, 635, 636, 637, 638, 709, and 910	\$1,325
Streetcars/Shuttle	Routes 448/449, 553, 554, and 555	\$923
Intermodal Centers and Other	Intermodal centers and other improvements	\$10,245
SCAG		
Eastside Transit Corridor Phase II	Metro Gold Line eastside extension from Atlantic Station in east Los Angeles farther east	\$2,490
Westside Corridor	Metro Rail subway extension from Wilshire/Western to Westwood	\$6,600
Exposition Light Rail Transit	Phase II extension from Culver City to Santa Monica	\$1,318
Statewide HSR and Metrolink	Statewide HSR system within SCAG region, plus upgrades to Metrolink and LOSSAN routes for near- term "Blended Scenario"	\$47,716
LOSSAN—Laguna Niguel to Fullerton	Service expansion, corridor improvements and rail feeder service within the county	\$1,184
Regional Connector from	Light rail in tunnel allowing through movements of trains for the Blue, Gold, and Expo lines Alameda/1 st Street to 7 th Street/Metro Center	\$1,366
Crenshaw/LAX Transit Corridor	Light rail connection between Expo Line and Green Line via Los Angeles International Airport	\$1,733

Notes: Includes examples of the highest-cost transit capital projects by region. The list is not comprehensive.

* All project costs are expressed in millions in year of expenditure dollars.

TABLE 3.1 MAJOR TRANSIT CAPITAL PROJECTS FOR SANDAG, SCAG, AND SACOG (CONTINUED)

Project Name	Description	Cost (Millions)*
SACOG		
Sacramento RT Green Line	Extend light rail from Richards Boulevard to Sacramento International Airport	\$1,170
Sacramento RT South Line	Extend light rail from Meadowview to Consumnes River College	\$270
Sacramento RT Gold Line	Construct grade separations at major cross roads	\$147
Streetcar	Streetcar between West Sacramento and Downtown/Midtown Sacramento	\$183
Sacramento Intermodal Facility	Creation of a larger multimodal transportation center to accommodate conventional and high-speed intercity passenger trains, commuter rail, light rail, streetcars, transit bus lines, and intercity buses	\$536

Notes: Includes examples of the highest-cost transit capital projects by region. The list is not comprehensive.

* All project costs are expressed in millions in year of expenditure dollars.

segments of exclusive HSR tracks will be constructed in phases as funding becomes available. HSR service will operate on these initial segments, first using conventional diesel transit, and then electric-powered trains. Conventional intercity passenger rail services are expected to provide connections to intermediate destinations. Successful implementation of the “Blended Scenario” concept relies on substantial upgrades to this rail infrastructure to support “single seat rides” between locations in cities such as Los Angeles, Anaheim, Sacramento, and the Bay Area. These upgrades necessitate substantial State funding to supplement regional and federal funding.

Planning for the integration of conventional and high-speed passenger rail is underway through

of the California State Rail Plan, the long-range plan for passenger rail in California. This planning process has become the forum for identifying and analyzing details of the potential HSR “Blended Scenario.” When finalized in 2013, the plan will provide a statewide vision, priorities, and implementation strategies for high-speed, intercity passenger, and freight rail investments across California. The plan will address agency responsibilities for near and midterm implementation of the “Blended Scenario,” and the planned regional transit investments critical for achieving statewide passenger rail goals. Analysis provided in the plan will be integrated into the CTP 2040.



Emphasis on “Active Transportation” Investments

MPOs are increasing the proportion of funds they invest in bicycling and walking projects (“active transportation”) and supporting policies such as Complete Streets and Safe Routes to Schools.

For example:

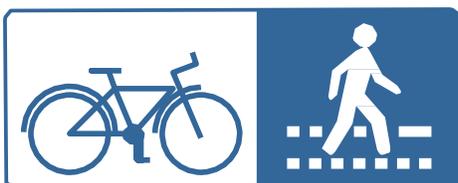
- SCAG tripled the amount of funding dedicated to “active transportation” from the last RTP, for a total of \$6.7 billion.¹⁰
- SACOG’s RTP dedicates a larger share of available funding to bicycle and pedestrian projects compared to the last RTP (\$4.0 billion). However, the actual dollar amount invested is lower than in previous years due to less funding overall for RTP investments.



SCAG tripled “active transportation” funding from previous RTP (\$6.7 billion)



SACOG dedicated larger share of funding to bicycle and pedestrian projects compared to previous RTP (\$2.9 billion)



SANDAG increased “active transportation” focus compared to previous RTP (\$3.8 billion)

- SANDAG’s RTP includes much stronger focus on “active transportation” programs compared to the last RTP. It includes \$3.8 billion for the regional bicycle network, local bicycle projects, local and regional pedestrian projects, and the Safe Routes to Transit Program.

MPOs and transit operators also are emphasizing improvement in bicycling and pedestrian connections to transit. For example, SCAG’s RTP calls for the provision of multimodal mobility hubs around major transit stations, the integration of bicycling and transit through folding-bikes-on-buses programs, triple bike racks on buses, and dedicated racks on light- and heavy-rail vehicles.

Potential Influences on the State Transportation System

Policies that provide better bicycling and pedestrian access to intercity and local transit stations could increase the share of travelers who choose transit for their statewide trips. Even if a small share of such trips shift to bicycling or walking, such a change could

reduce automobile volumes on segments of local roads and State highways, possibly reducing congestion and GHG emissions, and increasing safety.

Implications for State Agencies

Caltrans has developed a Complete Streets Implementation Action Plan. This plan calls for systematic guidance of the agency’s policy documents and performance measures to incorporate a Complete Streets approach. Updates of the Highway Design Manual have been completed, while revisions to other key guidance documents are underway.

¹⁰ Unless otherwise noted, all costs in this report are stated
California Interregional Blueprint Interim Report [51
]

in year of expenditure dollars.

Multiple New Managed Lanes Proposals

SANDAG and SCAG are planning investments in managed lanes, such as HOV or HOT lanes, on multiple State routes, including:

- SCAG's RTP/SCS plan includes \$9.5 billion for development of a regional HOT/Express-lane network.
- SANDAG's RTP/SCS plan includes managed lanes projects on I-15, I-5, I-805, SR 52, SR 54, SR 78, SR 94, and SR 125, totaling more than \$18 billion.
- SACOG's RTP/SCS plan includes new HOV lanes on sections of I-80 and I-5.

Potential Influences on the State Transportation System

Adding managed lanes could have multiple influences on the statewide system. Research compiled by the Transportation Research Board indicates that the addition of new HOV lanes typically yields higher vehicle occupancies.¹¹ To ensure maximum usage of

HOV lanes, transportation agencies are increasingly giving single-occupant drivers the option to travel in these lanes for a fee. These studies demonstrate that both fee-based and incentive-based users will choose to bypass congestion, thereby increasing HOV and HOT lane passenger throughput and alleviating congestion

in general purpose lanes. Revenue generation, an additional benefit of pricing, can be used to support highway operations and maintenance, transit services, and other mobility improvements.

Another influence relevant to the statewide system is the potential for disjointed service, where toll collection policies change at bordering regions. Bottlenecks could also result from gaps in the managed lane network between regions. Figure 3.2 illustrates existing and proposed managed lanes on major highways connecting the SCAG and SANDAG regions. As shown in the figure, an extensive system of carpool, transit and tolled facilities are planned between these regions, but management strategies may vary between facilities and, in some cases, even on the same freeway.

Figure 3.2 Managed Lane System between SCAG and SANDAG Regions



¹¹ Changes in Travel Behavior/Demand Associated with California Interregional Blueprint Interim Report [53]

Managed Lanes, NCHRP 8-36B/Task 52.

Implications for State Agencies

Caltrans will continue to facilitate interregional coordination of managed lane operations and continue to develop policies working with our partners to help ensure an integrated network. Caltrans, regional transportation agencies, the Federal Highway Administration, and the California Highway Patrol have developed the HOV/Express Lane Business Plan to guide the current and future development and operation of HOV and managed lanes throughout the State. Finally, Caltrans will analyze the cumulative benefits of managed lanes projects on statewide travel demand and system performance. Analysis will include GHG emission levels, using the CSTDM.

3.3 LAND USE-RELATED THEMES

Coordination Between Location Efficient Development and Transportation Investments

MPO RTP/SCS plans focus future growth in developed areas and around transit stations—an approach known as location efficient development. For example, SANDAG's SCS land use pattern accommodates 79 percent of all housing and 86 percent of all jobs within the Urban Area Transit Strategy Study Area where the greatest investments in public transit are being made. SCAG and SACOG also concentrate a majority of new growth in high-quality transit areas.

MPOs also are expanding available funding to support location efficient development, such as SANDAG's Smart Growth Incentive Program. These types of funding programs are critical to ensure land use visions included in SCS documents are realized.

Potential Influences on the State Transportation System

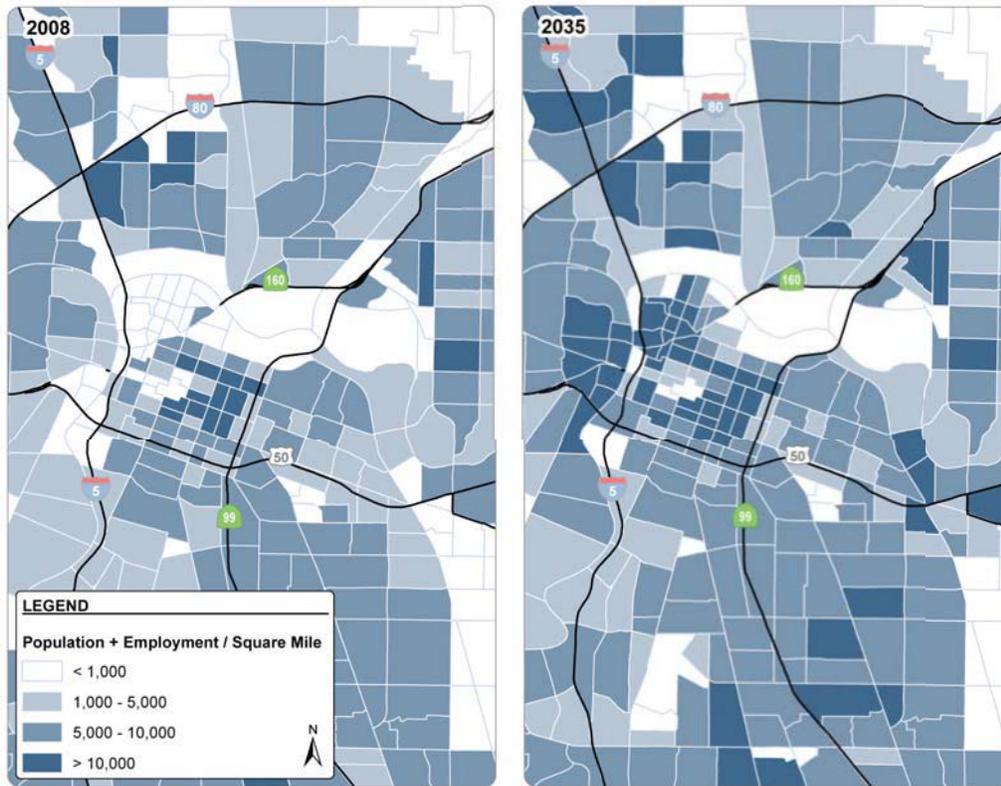
Location efficient development patterns result in shorter automobile trips. Short distances between destinations also allow a larger share of trips to be made on foot or bicycle. Regions could experience a shifting of local trips off interregional routes and onto local roads, sidewalks, and bicycle lanes, potentially easing traffic congestion in urban areas.

Location efficient development patterns also could increase demand for interregional transit travel by concentrating a variety of land uses within walking distance of transit stations. Figure 3.3 illustrates planned land use densification in downtown Sacramento. This densification will increase the number of jobs and residents within convenient access of the Amtrak Capitol Corridor route connecting Sacramento and the Bay Area.

Location efficient development patterns result in shorter automobile trips. Short distances between destinations also allow a larger share of trips to be made on foot or bicycle.

Another potential effect of such development patterns could be a decrease in the availability of land currently zoned for industrial uses within or near the areas targeted for location efficient development. Such a decrease might lead to shifting of industrial land uses to the regional boundaries. For example, a 2005 MTC study pointed to the decreasing availability of land zoned for industrial and warehouse uses within the Bay Area due to market forces that have favored residential and commercial development and denser development patterns. Such decreases could potentially result in increased truck travel on the interregional system, as trucks take longer trips from more distant warehouse locations into regional centers.

Figure 3.3 Socioeconomic Pattern Changes in Downtown Sacramento



Implications for State Agencies

During future regional and corridor planning efforts, Caltrans could partner with regional and local transportation agencies to analyze the effects of location efficient development patterns on the performance of the statewide transportation system. Such an analysis might consider transit ridership, automobile traffic on interregional routes, truck traffic on the urban periphery, and overall GHG emissions levels. This analysis also could identify significant trends not fully captured by regional RTP/SCS plans, such as the effects of increased industrial and warehouse development in rural areas near metropolitan regions.

3.4 PROCESS AND POLICY-RELATED THEMES

Constrained Funding

The CTC STSNA identified growing transportation system maintenance and preservation needs, as well as constrained funding for expansion or enhancement. The report documented about \$341 billion in maintenance and preservation needs for the State from 2011 to 2020, compared to about \$147 billion in expected available revenues. The three completed RTP/SCS plans from SANDAG, SACOG, and SCAG reflect these resource constraints, and dedicated the largest share of their RTP budgets to addressing such needs.

Funding and Revenue Outlook

13%

Expected decrease in available revenues for SACOG region compared to prior RTP

\$110 billion

Projected funding from SCAG's proposed mileage-based user fee

12%

Extent of total revenue expected from future local sources in SANDAG's RTP/SCS

Severe shortages in transit operating funding are another issue reported by the STSNA and the MPOs. SCAG's RTP notes that, "with recent declines in transit funding, the region's transit operators continue to face major obstacles to providing frequent and convenient transit service." Another report¹² estimated a 10-year unmet transit maintenance and operating funding gap of \$22.2 billion and noted budgetary challenges faced by transit operators. This figure does not include three Caltrans supported intercity rail lines operated by

Amtrak. The report concluded that overall in California,

transit service grew at a higher rate than transit usage. As such, the costs of providing transit service have increased faster than ridership. The report also points out that while California transit operators provided 28 percent more services in 2009 as compared to 2000, operating costs rose by 69 percent.

MPOs are responding to resource constraints by emphasizing cost efficiency and by pursuing new revenue sources or new ways of funding transportation improvements:

- In the SACOG region, revenues available for the 2035 RTP (\$49.8 billion) are about 13 percent lower than the amounts provided in the prior RTP. However, the plan still achieves its goals by emphasizing cost efficiency. Transit services are refocused on more productive routes to allow more riders and a higher percentage of total costs to come from user fares. This change produces a 40 percent increase in transit services per person in 2035 compared to 2012. About \$8.3 billion, or 17 percent of the total, will be spent on strategic roadway expansion or enhancement projects. This amount is 30 percent lower than the amount provided in the prior RTP.
- SCAG is emphasizing new sources of revenue. The RTP/SCS plan estimates \$525 billion in revenues available for RTP investments through 2035. Of this amount, about one-half (58 percent) is estimated to come from existing federal, State, and local sources. The remaining 42 percent is estimated to come from new revenue sources, including a proposed mileage-based user fee that would raise \$110 billion.

¹² California Unmet Transit Funding Needs, FY 2011 to 2020;
California Transit Association.

- SANDAG's RTP/SCS plan draws primarily on existing revenue sources, such as continuation or expansion of local sales taxes measures, but also includes some revenue from future local sources not yet identified (about \$12 billion or 12 percent of total revenues). SANDAG also draws on innovative sources of financing, such as toll revenues and public private partnerships.

Potential Influences on the State Transportation System

The lack of funding will make it difficult to make substantial progress in meeting mobility, GHG emission reductions, and other performance goals at the statewide and regional levels. Lack of funding also will affect the ability of MPOs to expand the core multimodal system and provide key intermodal connections to statewide passenger rail and air travel. As noted, the largest shares of planned investments shown in completed RTP/SCS plans are for transportation system maintenance and operations,

rather than capacity expansion on interregional corridors. Any further funding reductions will likely further limit the ability to provide connections to statewide transportation services.

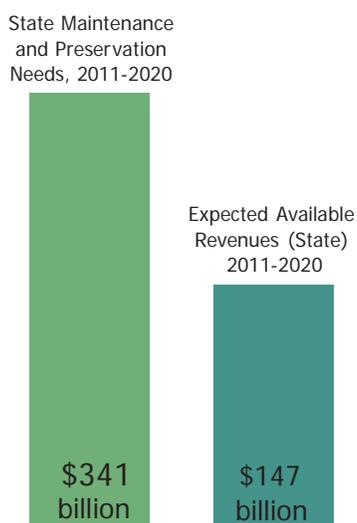
Implications for State Agencies

A significant implication of resource limitations is that MPOs may be requesting State assistance to address GHG emissions and to improve performance on the statewide transportation system. For example, SCAG's RTP/SCS plan includes the assumption that a new state-level, mileage-based user fee would fund some RTP/SCS projects that will reduce GHG emissions from transportation.¹³

Caltrans should continue to lead efforts with MPOs to identify innovative sources of transportation funding, and should collaborate on efforts to capture resources available through federal transportation funding legislation. These approaches may include road pricing, Intelligent Transportation Systems multimodal improvements, and transportation demand management strategies.

Cost-effective approaches to transit system improvement could involve strategic reallocation of existing transit investments to areas that will generate more transit ridership. As described in the SACOG example, such changes can increase transit ridership and passenger fare revenue, which in turn can be reinvested in new services elsewhere. Caltrans already is exploring this topic through the Statewide Transit Strategic Plan.

California Transportation Funding Outlook 2011-2020



Source: California Transportation Commission, 2011 California Statewide Transportation System Needs Assessment.

¹³ California Unmet Transit Funding Needs, FY 2011 to 2020; California Transit Association.

Streamlined CEQA Review

Several MPOs encourage local governments to take advantage of streamlining provisions in conjunction with the RTP/SCS plans, allowing expedited review of infill projects that support GHG emission reduction goals.

Specifically, SB 375 allows local governments and transit agencies to provide streamlined CEQA review of development projects near a major transit stop or high- quality transit corridor.¹⁴ SANDAG has identified the location of transit priority areas in their region that are eligible for reduced levels of CEQA review when project sponsors demonstrate they can meet specified criteria.

Agencies are identifying other methods of streamlining CEQA approvals to allow priority transportation projects to move forward more quickly. For example, SACOG

was recently awarded a major SGC grant to expedite environmental review of transit projects.

In addition, agencies will pursue even broader CEQA exemptions for streamlining infill and other local development projects when SB 226 guidelines are released in January, 2013. SB 226 expands where and for what type of land uses CEQA streamlining can occur. It may be applied to qualified infill sites or to a “small walkable community project” anywhere in California (not just jurisdictions within an MPO region as defined under SB 375). SB 226 allows CEQA streamlining for infill residential, commercial, public office building, transit station, and school projects.

Potential Influences on the State Transportation System

Streamlined review may lead to faster implementation of transit-oriented infill development projects. Faster implementation of such projects would lead to acceleration of the associated congestion and GHG emission reduction benefits.

Implications for State Agencies

Caltrans and the Governor's Office of Planning and Research could continue to work with regional and local governments to refine CEQA streamlining regulations and guidelines to further increase incentives for transit- oriented development by reducing administrative costs of development. More efficient review processes could shorten the time and cost to obtain approvals needed for transit-oriented infill development projects.

Greater Coordination across Government Agencies and Stakeholders

The RTP/SCS process is resulting in greater levels of coordination across government agencies and stakeholder groups. For example, SB 375 led to the creation of an MPO working group involving the major MPOs and other State agencies. This group continues to meet to share approaches and lessons learned in developing SCSs and meeting GHG emission reduction targets. Additionally, several of the MPOs involved in the CIB Interim Report working group reported increased engagement from the business community, local agencies, and nonprofit groups in preparing the RTP/SCS plans as compared to prior RTPs. These nonprofit groups often represent environmental issues, public health, and social equity.

California Transit Association.

SANDAG, in particular, received an unusually large number of comments (more than 4,000) from a wide variety of stakeholder groups in response to preparation of the RTP/SCS plan.

Potential Influences on the State Transportation System

No direct effects are anticipated on the statewide system, but collaborative relationships among agencies could extend to addressing interregional travel issues and improving interregional trip modeling, leading to more multiregional plans and projects. Two recent examples of such collaborative planning that have benefitted the interregional transportation system are the State Route 99 Business Plan developed for the San Joaquin Valley, and the Multicounty Goods Movement Action Plan in Southern California.

Implications for State Agencies

While California's MPOs have focused on SB 375 implementation in recent years, there are opportunities for Caltrans and MPOs to collaborate on transportation planning strategies that could reduce GHG emissions from interregional passenger travel (e.g., tourism, long-distance business travel, etc.) and goods movement. This collaboration could take the form of statewide working groups, interregional working groups, and/or "megaregional" planning efforts that would address issues related to areas such as goods movement and commuter rail networks. Models of this type of collaboration already exist outside of the MPO SB 375 working group, including the Active Transportation and Livable Communities group through which Caltrans and external stakeholders address "active transportation" needs, and the California Interagency Modeling Forum, a statewide forum on travel demand modeling

techniques.

Another potential role for Caltrans in enhancing interregional coordination is to work towards more systematic performance measurement across MPOs. MPOs use a variety of measures to gauge the effects of their RTP investments and monitor day-to-day system performance. Adoption of a small set of common measures by State and regional agencies could support a coordinated approach to system monitoring and management throughout the State. Caltrans' Smart Mobility 2010 report recommends SMPMs that could serve as a starting place for evaluating statewide performance.

3.5 THE STATE'S ROLE IN SUPPORTING REGIONAL PLANNING

The prior sections identified specific implications of SCS trends for statewide travel and for State agencies. This section describes in general terms the roles Caltrans and other State agencies can play in supporting SCS implementation and in addressing gaps in the SCS process. Major roles for Caltrans and other State agencies include:

- Investing in strategic capital and operations projects.
- Supporting streamlined regulation.
- Providing funding support.
- Coordinating data and analysis.
- Monitoring the statewide transportation system.
- Supporting and leading local, regional, and interregional corridor planning.
- Addressing issues not fully covered by regional plans.

Strategic Capital and Operating Investments

Caltrans and its partners address mobility needs on interregional corridors through investments that include system maintenance and preservation, system efficiency and operations, and multimodal capacity expansion. These investments will continue to link interregional travel. In addition, Caltrans development of the CSTDM, discussed in more detail in Section 4.1, will result in a valuable tool to identify transportation investment needs not fully addressed by RTPs.

Supporting Streamlined Regulation

Caltrans can quickly advance projects that will reduce GHG emissions by improving the efficiency of the environmental review process. Caltrans and the Department of Water Resources, with the assistance of federal and State resource and regulatory agencies, are developing advance mitigation planning programs that will allow simultaneous consideration of the environmental effects of several planned infrastructure projects. These programs will help streamline delivery of infrastructure projects that are critical for achieving GHG emission reduction goals. As advance mitigation planning is applied in multiple regions, it will help the State take the next critical steps to plan for sustainable infrastructure on an interregional basis.

The development of implementation guidance for SB 226 (expanding SB 375 CEQA streamlining provisions) by the Governor's Office of Planning and Research provides another opportunity for advancing eligible projects.

Funding Support

The State plays a critical role in supporting GHG emission reduction by providing funding support. Current and assumed future State funding comprises

a substantial share of the revenues available to implement RTP/SCS projects (25, 28, and 25 percent of SCAG, SANDAG, and SACOG's budgets, respectively).

The State could enhance the influence of its funding support not just by raising additional revenue, but linking revenues to cost-effective GHG emission reduction strategies.

Coordinating Data and Analysis

Caltrans and other State agencies can play a key role in coordinating data and analysis efforts across regions to ensure consistency and comparability of results. The CSTDM will serve as a key tool for better understanding statewide travel and the cumulative effects of regional planning efforts on the transportation system. Additional detail on the capabilities of the CSTDM is provided in the next section.

Caltrans also is making progress in facilitating common assumptions and data through the 2012 California Household Travel Survey (CHTS). The CHTS will provide a unified source of information for travel models throughout California.

Caltrans and its partners address mobility needs on interregional corridors through investments that include system maintenance and preservation, system efficiency and operations, and multimodal capacity expansion.

System Monitoring

Caltrans monitors and manages performance on key statewide corridors using Corridor System Management Plans (CSMP), the Performance Measurement System (PeMS), and other tools.

CSMPs are planning documents that help Caltrans and its partners identify, prioritize, implement, and manage multimodal investments to maximize throughput and reduce traffic congestion in key corridors. A CSMP results in a list of recommended operational improvements, Intelligent Transportation System strategies, and system expansion projects to preserve or improve performance within the corridor.

PeMS is a diagnostic tool for tracking freeway performance in major metropolitan areas.

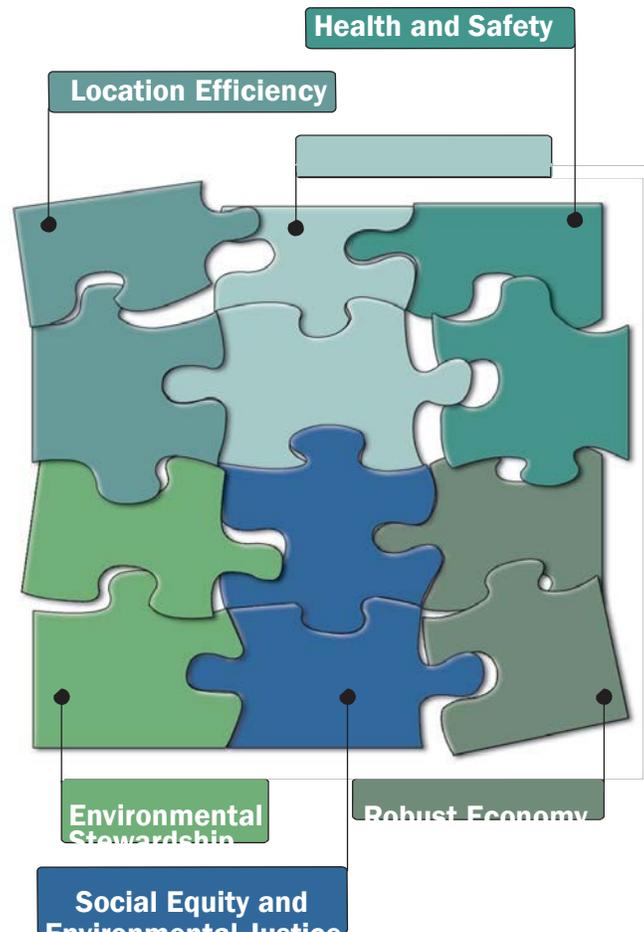
Traffic

data is collected in real-time by system-wide loop and wireless detectors. Transportation engineers and planners use PeMS data and tools identify bottlenecks, perform traffic analyses, and forecast and improve traffic operations reliability.

With both tools, transportation performance measures are used to forecast, evaluate, and monitor the degree to which the transportation system accomplishes adopted public goals and mobility objectives. Caltrans is developing and testing approaches for implementing “smart mobility” principles, concepts, and performance measures.

In partnership with U.S. Environmental Protection Agency and other State partners, Caltrans completed Smart Mobility 2010, a planning framework to guide and assess how well plans, programs, and projects meet a definition of “smart mobility.” A key element of the smart mobility framework is the development of performance measures that demonstrate the

Smart Mobility 2010 Principles



relationship between integrated transportation and land use decisions. A core set of performance measures have been defined that address the following principles:

- Location Efficiency.
- Reliable Mobility.
- Health and Safety.
- Environmental Stewardship.
- Social Equity and Environmental Justice.
- Robust Economy.

The Smart Mobility Framework provides a structure for coordinating statewide transportation system performance measurement and monitoring. The Smart Mobility Framework can provide key metrics for the statewide transportation system when combined with coordinated travel data from Caltrans' modal divisions, regional and statewide travel models, and local participation.

Coordinated Corridor Planning

Regional planning efforts address statewide travel to a limited extent. Caltrans works cooperatively with regional and local governments on both ends of interregional corridors to improve travel conditions and create transportation choices. The San Joaquin Valley integrated interregional corridor is one example that could serve as a model for future efforts in this area. The following is a case study of coordination efforts in this corridor.

San Joaquin Valley Corridor—Example of Coordinated Corridor Planning

The San Joaquin Valley corridor connects the Sacramento region with eight counties that collectively define one of the most productive agricultural regions in the world. While the Valley was lightly populated and slow-growing through the 1970s, the pace of growth rapidly increased since 1980. This corridor is projected to receive the majority of the States population growth in the coming decades. The Valley was first connected by rail in the 1800s. The Burlington Northern Santa Fe Railway Corporation and the Union Pacific Railroad still retain major operations.

Highway 99, the Valley's "main street," parallels the UP line and connects the Valley's major cities. In the 1960s, I-5 was built to the west of most Valley cities providing a fast bypass that complements SR 99. Seven airports provide limited commercial passenger service in the Valley.

Caltrans Districts 3, 6, and 10 share transportation system planning, development, and management in the corridor. Common transportation issues and challenges have, over time, nurtured cooperative planning efforts in the corridor. In particular, the predominance of export agriculture and related enterprises makes freight mobility via trucks, rail, and two deepwater ports extremely important to the entire Valley. With less than one-fifth of the State's population, the Valley's major highway corridors carry one-third of California's truck VMT.¹⁵

Several formal coordination efforts exist in the Valley, including the San Joaquin Valley Regional Policy Council and the San Joaquin Valley Regional Transportation Planning Agencies Directors Committee. At the northern end of the Valley, SJCOG coordinates with both SACOG and MTC on rideshare matching and freight mobility. Transportation planning coordination efforts began in the 1990s and still gain momentum. Transit agencies and MPOs have expressed interest in reorienting planned growth and transit service around potential HSR stations. Nonprofit agencies also are important. The Great Valley Center, now based at UC Merced, actively informs emerging Valley leaders regarding ways of responding to the challenges of growth in the corridor.

California Transit Association.

State and federal funding has catalyzed corridor planning efforts. Noteworthy examples include Caltrans' funding of the multiphase San Joaquin Valleywide Blueprint studies to better integrate local land use and transportation planning throughout the corridor. A series of freight mobility studies are creating a unified vision of a Valleywide freight plan. More recently, SGC funding of the San Joaquin Model Improvement Program has put transportation, land use, air quality, and GHG emission reduction planning on a solid and uniform base. The recent \$4 million HUD grant to a consortium of 14 Valley cities is an example of a federal impetus to corridor-wide comprehensive planning.

With State support and encouragement, regional and local agencies coordinate major transportation planning activities, and now regularly approach State and federal agencies and policymakers with a unified front, as shown with the Valleywide investment priorities displayed in Figure 3.4 and Table 3.2. With a firm foundation of coordinated planning, the corridor in the years ahead will see growing collaboration on transportation modeling and planning. It also will see an increasingly unified voice on the corridor's multimodal needs, including new east-west highways, freight facilities, and passenger rail, including HSR.

3.6 SUMMARY

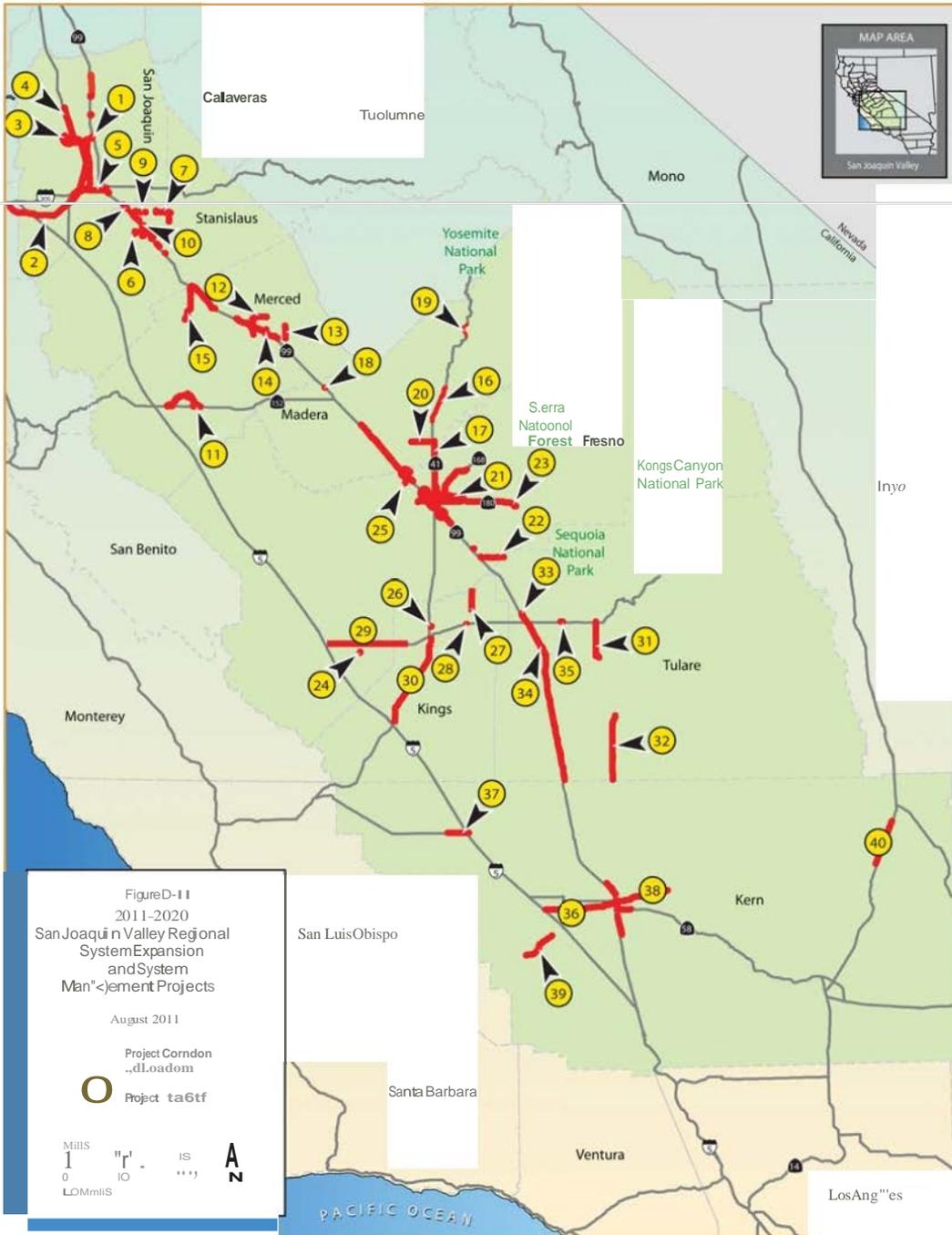
This section has discussed potential influences of completed SCSs on the statewide transportation system, and resulting implications for Caltrans and other State agencies. Some of these effects are being addressed through existing planning efforts, such as Caltrans' modal plans. Table 3.3 summarizes these

modal planning efforts. For example, integration of the blended California HSR system with regional transit investments is being addressed as part of the California State Rail Plan. As another example, Caltrans' modification of highway design guidance allows for more extensive implementation of Complete Streets approaches on the State Highway System.

Several issues deserve further consideration. These include the need for enhanced coordination efforts, including consistent performance measurement systems; new sources of revenue and more cost-effective approaches to respond to revenue constraints; and support for streamlining of development and transportation projects that would result in GHG emission reduction. These issues are discussed in more detail in the next section.

*A \$4 million grant from the federal Sustainable Communities Initiative is supporting Smart Valley Places, which will produce a **single** integrated plan for regional growth that will guide the San Joaquin Valley for the next 20 years and even beyond.*

Figure 3.4 Major Projects on San Joaquin Valley Interregional Corridors
2011 to 2020



Source: California Transportation Commission, 2011 California Statewide Transportation System Needs Assessment, Appendix D; page 23.

TABLE 3.2 MAJOR HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SAN JOAQUIN VALLEY 2011 TO 2020

Number	County	Facility	Description	Cost (Millions)*
1	San Joaquin	SJRTD Regional Transit Center	New bus operations and maintenance facility	\$67
2	San Joaquin	SJRTD Altamont Pass Commuter Rail	Acquisition and upgrade of Altamont Pass corridor for Altamont Commuter Express (ACE) Passenger Rail Service (San Joaquin Section Only)	\$300
3	San Joaquin	Port of Stockton	Highway access improvements and enhanced container operations system	\$50
4	San Joaquin	I-5	HOV Lanes between Eight Mile Road and I-205	\$500
5	San Joaquin	SR 120	Widen from 4 to 6 lanes between I-5 and SR 99	\$90
6	Stanislaus	SR 99	Connectivity Improvement Project	\$487
7	Stanislaus	North County Corridor	Construct 2 to 6 lane expressway between SR 99 and SR 120/108	\$554
8	Stanislaus	SR 99	Hammett Interchange replacement	\$95
9	Stanislaus	SR 99	SR 219 Kiernan interchange replacement	\$66
10	Stanislaus	SR 99	Reconstruct Pelandale Interchange to 8 lanes	\$69
11	Merced	SR 152	Los Banos Bypass (new four lane expressway)	\$500
12	Merced	SR 59	Atwater-Merced Expressway (new 4 lane expressway)	\$214
13	Merced	Campus Pkwy	New 4 lane expressway	\$110
14	Merced	SR 59	Widen from 2 to 4 lanes	\$42
15	Merced	SR 165	Hilmar/Turlock project	\$20
16	Madera	SR 41	Construct passing lanes between SR 145 and Road 200	\$31
17	Madera	SR 41	Extend freeway between Avenue 10 and Avenue 12, with new interchange at Avenue 12	\$46
18	Madera	SR 233	Reconstruct and widen interchange at SR 99	\$35
19	Madera	SR 41	Widen from 2 to 4 lanes between SR 49 and Road 420	\$23
20	Madera	Avenue 12	Widen from 2 to 4 lanes between SR 41 and Road 38	\$21
21	Fresno	Blackstone Ave	BRT: Along Blackstone Avenue from Friant Road on the north to Downtown Fresno and on Kings Canyon Road from Fowler on the east to Downtown Fresno	\$48
22	Fresno	Mountain View	Widen from 2 lanes (undivided) to 4 lanes (divided) between Bethel and the Tulare County line	\$24

Source: California Transportation Commission, 2011 California Statewide Transportation System Needs Assessment, Appendix D; page 23.

* All project costs are expressed in millions in year of expenditure dollars.

TABLE 3.2 MAJOR HIGHWAY AND REGIONAL TRANSIT CORRIDORS TARGETED FOR INVESTMENT IN THE SAN JOAQUIN VALLEY 2011 TO 2020 (CONTINUED)

Number	County	Facility	Description	Cost (Millions)*
23	Fresno	SR 180	Construct 4 lane expressway on new alignment between Academy and Frankwood	\$135
24	Fresno	SR 269	Construct new bridge and approaches between SR 198 and Huron	\$40
25	Fresno	Veterans Blvd	Reconstruct between Grantland and Herndon, with new Interchange at SR 99 and new grade separations at UP railroad and Golden State	\$168
26	Kings	SR 41	Construct interchange at Hanford-Armona Road	\$36
27	Kings	SR 43	Widen from 2 lanes to 4 lanes between Fresno County Line and 10th Avenue	\$97
28	Kings	SR 198	Construction interchange at 9 th Avenue	\$97
29	Kings	SR 198	Widen from 2 lanes to 4 lanes between I-5 and Lemoore Naval Air Station	\$145
30	Kings	SR 41	Widen from 2 lanes to 4 lanes between SR 198 and I-5	\$182
31	Tulare	SR 65	Widen from 4 lanes to 6 lanes between Hermosa Road and SR 198	\$140
32	Tulare	SR 65	Widen from 4 lanes to 6 lanes between Kern County line and Tea Pot Dome	\$130
33	Tulare	SR 99	Betty Drive interchange improvements	\$55
34	Tulare	SR 99	Cartmill Avenue interchange improvements	\$35
35	Tulare	SR 198	Lovers Lane interchange improvements	\$35
36	Kern	SR 58	Centennial Corridor Project (new freeway and interchange between I-5 and east of SR 99)	\$1,068
37	Kern	SR 46	Widen from 2 lanes to 4 lanes between I-5 and east of Lost Hills	\$97
38	Kern	SR 178	Widen existing corridor/freeway between SR 99 and Miramonte	\$162
39	Kern	SR 119	Widen from 2 lanes to 4 lanes between Taft and I-5	\$115
40	Kern	SR 14	Widen from 2 lanes to 4 lanes at SR 178	\$84

Source: California Transportation Commission, 2011 California Statewide Transportation System Needs Assessment, Appendix D; page 23.

* All project costs are expressed in millions in year of expenditure dollars.

TABLE 3.3 MODAL PLANS
SUMMARY AND LINK TO CIB AND GHG EMISSION REDUCTION

Description	Possible Links to CIB and GHG Emission Reduction
Interregional Transportation Strategic Plan (2012 and 2015)	
<ul style="list-style-type: none"> • Provides a prioritized list of interregional State highway projects and summarizes information about other interregional transportation modes. • Defines a hierarchy of transportation facilities for the California Interregional Road System. • Includes discussion of freight movement, including seaports and airports. • Incorporates objectives and priorities from the State Rail Plan, and the Smart Mobility Framework. 	<ul style="list-style-type: none"> • ITSP and other highway plans could identify programs of highway projects that would support GHG emission reduction and address gaps in regional highway planning, such as gaps in multiregional managed lanes networks.
Freight Mobility Plan (2013)	
<ul style="list-style-type: none"> • Address all modes of goods movement in California by recommending policies that support economic growth, job creation, mobility improvements, public safety and security, and environmental goals. 	<ul style="list-style-type: none"> • Addresses interregional freight planning issues not fully addressed by the SCS process. • Integrates freight mobility plans of partner transportation agencies. • Integrates State Rail Plan and Aviation System Plan.
State Rail Plan (2013)	
<ul style="list-style-type: none"> • Provides a statewide vision, priorities, and implementation strategies for high-speed, intercity passenger, and freight rail investments across California. • Focuses on safety and security of all rail uses. • Analyzes economic benefits of passenger and freight rail corridors. 	<ul style="list-style-type: none"> • Provides a forum for integration of regional transit investments with the blended HSR system. • Integrates information and priorities from the Freight Mobility Plan.
Statewide Transit Strategic Plan (2012)	
<ul style="list-style-type: none"> • Provides vision and goals for transit service and transit-oriented development throughout California. • Focuses on improved mobility and meeting the environmental objectives set forth by AB 32 and SB 375. • Incorporates a high level of stakeholder collaboration, including transit operators, local land use entities, transportation communities, MPOs and RTPAs, and other state and federal agencies. 	<ul style="list-style-type: none"> • Provides a forum for identification of policies to support cost-effective provision of transit service.
Aviation System Plan (2012)	
<ul style="list-style-type: none"> • Provides vision and objectives for developing aviation resources in California, including a policy element that serves a key resource to integrate aviation resources with transportation and land use development. • Illustrates the potential role of airports as anchors and important contributors to commercial centers and other local communities. 	<ul style="list-style-type: none"> • Addresses statewide air travel planning issues not fully addressed by the SCS process.

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Beginning the Next Steps

This section discusses the next steps in the CIB planning process, including:

- Preparing the CTP 2040, which involves developing plan scenarios to evaluate the effects of important trends and issues affecting the statewide system.
- Pursuing near-term action items to support regional SCS implementation.

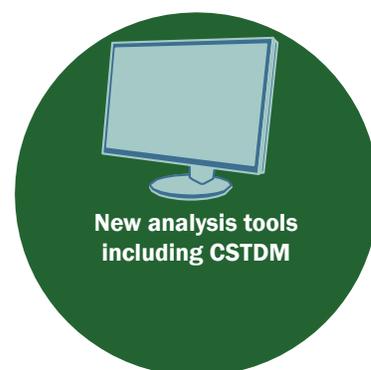
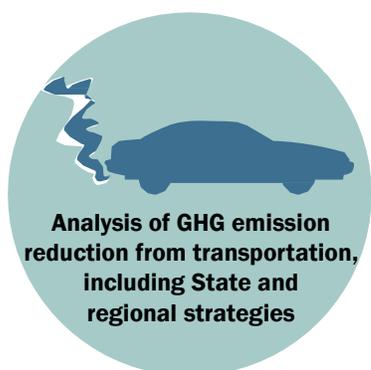
4.1 THE CALIFORNIA TRANSPORTATION PLAN

This CIB Interim Report is one product on the path towards the CTP 2040. The CTP is the State's long-range plan for meeting its future mobility needs while

supporting environmental quality, social equity, and economic growth. It defines goals, policies, and strategies to achieve a collective vision for California's future transportation system.

The CTP 2040 will provide further analysis of the interaction between regional and State planning efforts, building on the preliminary analysis in this report. By the time the CTP 2040 is prepared, regions will have completed RTP/SCS plans, and will have defined the projects and policies that could influence travel along interregional corridors. Moreover, key analysis tools, particularly the CSTDM, will be available to forecast statewide travel patterns and GHG emissions. Figure 4.1 provides a timeline for developing the CTP 2040 and associated analysis tools.

Key New Components of 2040 CTP



The CTP 2040 will be a distinctly different document from past statewide transportation plans for the following reasons:

- SB 391 requires the CTP 2040 to include analysis of GHG emission reduction from transportation, including consideration of regional and state-level strategies.
- New analysis tools such as the CSTDM will assist the CTP 2040 in demonstrating specific performance challenges facing statewide travel, and will be able to show how investments and policies could address those challenges.
- More than prior plans, the CTP 2040 will demonstrate how coordination between State, regional, and local agencies and tribal governments is helping California achieve its goals. It will illustrate how new transportation strategies could affect all the modes of travel, including passenger vehicles, commercial vehicles, freight and passenger rail, and aviation.

Taken together, these advances mean that the CTP 2040 can be a truly strategic document for California, covering regional, interregional, and multimodal transportation. The following pages outline preliminary ideas for structuring policy themes or scenarios for CTP 2040 consideration, and analysis methods that may prove useful.

CTP Evaluation Topics

One purpose of the CTP 2040 is to assess how statewide travel demand and the statewide transportation system could change in the future. In particular, the following six factors could influence statewide travel or the transportation system, and deserve consideration for analysis in the CTP 2040:

- Climate change.

- Economic and employment growth.
- Population and housing growth.
- Freight mobility.
- Public health.
- Transportation funding.

Each topic is discussed below to inform how it might be considered in the CTP 2040, particularly with regard to how appropriate assumptions could be prepared given major uncertainties.

Climate Change

Public agencies throughout California, including Caltrans, are actively assessing the risk posed by climate change. One of the most significant of these risks is the potential effect of sea level rise on transportation infrastructure. The potential sea level increase is uncertain, ranging from 5 to 24 inches for most of California by 2050, according to the National Academies of Sciences.¹⁶ This uncertainty creates challenges for planning a fully adaptable statewide transportation system in a cost effective manner. Higher water levels may increase coastal bluff erosion rates, change environmental characteristics that affect material durability (e.g., pH and chloride concentrations), lead to increased groundwater levels, and change sediment movement both along the shore and at estuaries and river mouths. Caltrans will need to address these issues at the planning and project level. Caltrans recently developed a project screening process to plan for the impact of different potential sea levels based on a facility's importance for statewide travel, community safety, and other factors.¹⁷ The CTP 2040 might employ a similar approach to assess climate change effects.

Economic and Employment Growth

Economic growth is a primary driver of travel demand, particularly for long-distance interregional trips. As an example, California's loss of nearly one million jobs since 2007 decreased highway travel for the first time since 1974. Future travel forecasts indicate this trend will reverse and travel in California will grow by 2030. Figure 4.1 illustrates expected growth in the number of passenger trips by air, auto, intercity bus, and intercity passenger rail modes for representative interregional travel markets. The color of the arrow indicates the percentage change in trips expected between the two regions (darker colors indicate higher change), while the thickness of the arrow is proportional to the number of future trips expected in the market. The figure shows that significant growth is expected in some of the longer- distance interregional travel markets (such as between the Bay Area and San Diego, and to or through the San Joaquin Valley). The CTP 2040 should assess the effect of plausible alternative scenarios of economic growth on travel patterns, and the efficacy of major project or policy proposals in addressing expected growth in travel demand.

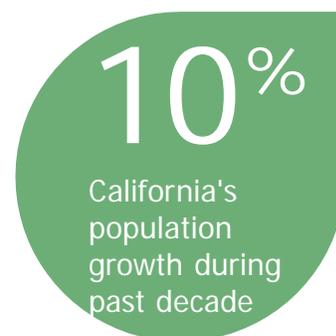
The CTP 2040 also could consider international trends affecting California's economy and transportation needs. For example, recent reports indicate that growth in marine container traffic may shift from the Far East to ports along the Indian Ocean and South Pacific, due in part to rapid expansion in the working-age population in India and the Middle East. Under such a scenario, West Coast ports may be at risk of losing market share to ports along the Atlantic and Gulf Coasts.

...California's loss of nearly one million jobs since 2007 decreased highway travel for the first time since 1974. Future travel forecasts indicate this trend will reverse

Population and Housing Growth

California's economic health is linked to population growth. California's 10 percent population growth during the most recent decade was the lowest in State history, and there was a notable slowing in the second half of the decade, corresponding with economic recession.

In the past decade, the Sacramento, San Joaquin Valley, and Inland Empire regions have grown faster than other areas in the State. Coastal communities and inland areas also grew, but at lower rates than the rest of the State. Recent forecasts suggest continuation of these patterns. Forecasts also suggest continued slowing in overall population growth rates, changes in ethnic and racial population shares such as a larger Hispanic population, changes in immigration patterns, and increases in the older adult population. These trends could influence household sizes, levels of automobile ownership, or other factors related to travel demand. For example, Caltrans' studies have shown that certain population groups such as new immigrants and older adults are less likely to drive alone for their travel needs.



and travel in California will grow by 2030.

¹⁶ Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future, Committee on Sea Level Rise in California, Oregon, and Washington, Board on Earth Sciences and Resources, Ocean Studies Board, Division on Earth and Life Studies, National Research Council, 2012.

¹⁷ California Department of Transportation, Climate Change Working Group; Guidance on Incorporating Sea Level Rise; May 19, 2011.

However, these trends are uncertain. For example, in 2007, the California Department of Finance predicted a 2010 population of just over 39 million residents. The 2010 Census revealed this projection was 2 million too high, illustrating the difficulty of accurately predicting population levels even a few years into the future. These uncertainties can be addressed in Caltrans' planning process by varying population, demographic, and employment assumptions to determine effects on travel patterns.

Freight Mobility

California is a leader among states in the volume and value of goods that move through its freight system. Deepwater seaports, railroads, air cargo airports, highways, international ports of entry, and freight intermodal facilities make the State a global logistics powerhouse and enable California-based industries to compete in the global market. However, this position and the millions of California jobs it supports are not guaranteed. Numerous challenges require serious and sometimes expensive responses.

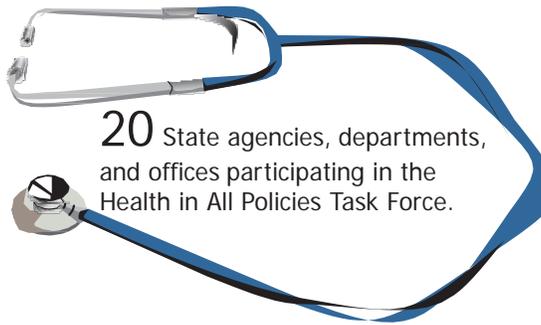
The 2007 Goods Movement Action Plan was instrumental in identifying the approximately 70 freight projects funded under the Proposition 1B Trade Corridor Improvement Fund. However, there is a need to identify the next generation of freight projects that will address an array of new needs and future challenges. These items include:

- GHG and diesel particulate emissions reductions.
- Expansion of the Panama Canal.
- Significant expansions in freight handling capacity by other North American seaports.
- Increase in the size of container ships that exceed the current depth of some California ports.

- Bottlenecks for freight rail and trucking.
- Aging infrastructure.
- Implementation of new technologies to increase efficiency and reduce impacts.
- New national freight planning policy under Moving Ahead for Progress in the 21st Century (MAP-21).
- Limited funding availability in a very competitive industry.



To address these challenges, Caltrans is developing a Freight Mobility Plan that updates the Goods Movement Action Plan and incorporates several factors. These factors include issues and projects identified in regional freight plans prepared by MPOs, modal plans developed by freight operators such as railroads and ports, a new State Rail Plan under development by Caltrans, and various other studies. The intent is to create a plan that addresses the full spectrum of freight issues and modes across the State and provides an actionable set of strategies and projects. This will help California maintain a competitive advantage in the freight industry and support California's economy while reducing negative impacts associated with the freight industry.



Public Health

Development of more compact communities with high-quality transit, bicycling, and walking infrastructure can encourage healthful physical activity, reduce air pollution, and reduce roadway traffic collisions. These changes can translate into numerous public health benefits such as reduction in obesity, diabetes, heart disease, and asthma.

In recognition of these connections between transportation planning and public health, Caltrans joined with the SGC and 18 other State agencies, departments, and offices on the Health in All Policies Task Force. The Task Force identifies priority programs, policies, and strategies to support improved health.

The priorities cover many topics (e.g., improved infrastructure systems, sustainable communities, supporting climate change goals) that Caltrans and RTPAs are addressing through the SCS and CIB processes.

Public health also will be an important policy consideration for the CTP 2040. While the Health in all Policies Task Force has prepared a general road map, specific health-related performance metrics and analysis methods are not well developed to assess health effects of transportation policies and programs. Caltrans will consider near-term efforts to improve the state of the practice and incorporate them into the CTP 2040.

Transportation Funding

Transportation funding remains insufficient to keep pace with growing demand and maintenance of the existing transportation infrastructure at levels necessary to keep California vibrant and competitive into the 21st century. The problem will likely increase as California strives to make investments necessary to meet SB 375 requirements.

California's primary source of transportation revenue comes from the fuel excise tax on gasoline and diesel, and revenue levels depend on purchase of these fuels. Efforts to reduce the VMT through mode shifts, alternative fuel vehicles, and other such means will continue to reduce revenues available to improve and maintain existing transportation infrastructure. The problem is compounded by rising highway and transit construction, and maintenance costs that continue to erode the purchasing power of revenues.

Legislation passed in 2010 demonstrates another means by which transportation funding is affected. The California State Legislature passed the Fuel Tax Swap, which reshaped the way revenues are generated. The Fuel Tax Swap also provided lawmakers with greater flexibility on how revenues are used. The result is that revenues once dedicated to highway and transit infrastructure are diverted to pay debt accruing from transportation bonds passed by California voters. Ensuring adequate funding to meet future transport demand while maintaining current and future stock will need to be addressed for California to prosper in the years ahead.

Potential CTP 2040 Scenarios

The CTP 2040 will assess major trends through analysis and comparison of different visions of the future in 2040, referred to as scenarios.

Each scenario includes
assumptions regarding

future population and employment, transportation investments and policies, and other factors. These assumptions will be input into several analysis tools (see discussion below) to generate information about the future operation of the transportation system.

As a starting point, the scenarios will reflect SCS and/or RTP plans prepared by California's MPOs and RTPAs. These regionally developed and adopted plans provide a clear indication of the land use policies, transportation investments, and system management strategies planned at the regional level. Statewide policies and investment strategies can then be evaluated along with regional priorities, allowing Caltrans and its partners to assess the extent to which State actions could leverage regional actions towards achieving GHG emission reduction goals and other important transportation performance metrics. Possible scenario ideas include the following:

- Alternative levels of overall transportation funding and allocation of state-level funding between system operation, preservation, maintenance, and expansion needs.
- System management strategies such as statewide pricing or linking of regional managed lane projects. Such strategies might be tested for all travelers, or just some subsegments such as heavy trucks.
- More extensive system efficiency improvements on the statewide transportation system, such as ramp metering, active traffic management, incident management, and travel information systems.
- Bottleneck relief, such as truck climbing lanes or geometric improvements to improve traffic flows and reduce incident at key interregional gateways.
- Truck technology improvements along major highways (e.g., weigh-in-motion screening, truck stop electrification to reduce idling).

- Increased investment in operation of statewide multimodal programs, such as carpooling and vanpooling programs, intercity passenger rail, and intercity bus transit.
- Vehicle fuel efficiency, tailpipe emission, and alternative fuels programs.

The prior bullets illustrate some ideas that might be considered for CTP 2040 scenarios. Caltrans could implement some of these ideas, while many would involve legislative action or partnering with regional or other State agencies. Any ideas could be combined in a variety of ways to assess interactive effects as well as effectiveness under different assumptions of external conditions.

Analysis Tools and Data

Implementation of SB 375 has highlighted a need for improved analysis tools to forecast travel demand, land use and demographic changes, GHG emissions, and other performance effects at both the State and regional levels. This section summarizes emerging tools and data that can assist in addressing this need, and shows how they will support CIB goals by providing:

- Updated forecasts of statewide travel patterns.
- Better integration between statewide and regional travel forecasts.
- Ability to assess performance for all modes of travel, including freight and bicycling and walking.
- Ability to assess the effects of policies and investments on GHG emission reduction and other important goals.

The tools and data described below will facilitate thorough scenario evaluation for the CTP 2040. They are well suited for assessing the combined GHG emission reduction benefits of regionally adopted RTP/SCS plans, Caltrans' modal plans, and additional statewide strategies or policies. This statewide assessment of transportation-related GHG emission reduction is a key CTP 2040 product because California's MPOs are not directly responsible for meeting the emission reduction goals of SB 391 or AB 32. Metrics utilized will be complimentary to those reported by the regional planning agencies and would include VMT, vehicle hours of travel, and mode split.

Thus, this effort links the MPO planning efforts with

California Statewide Travel Demand Model

The CSTDM, which is outlined in Figure 4.2, forecasts personal travel (including auto, transit, and modes such as bicycling and walking) and commercial truck travel. Several important enhancements to this model are underway, including:

- Future-year forecasts of statewide travel (to be completed in the fall of 2012).
- A new freight model system, to be completed in mid 2013.
- A significant model update using new household survey data.

The CSTDM will provide the first standardized forecasts of statewide travel based in part on each MPOs official socioeconomic forecast. At the same time, all the MPOs will have access to travel data provided by the CSTDM to help validate their interregional trip volumes, to evaluate the influence of regional jobs-housing balance on interregional travel and GHG emissions, to help determine the proper accounting of through trips, and to identify the origin and destination MPO for those trips that either begin or end in their

the CSTDM in both directions—the MPO forecasts influence the CSTDM, and the CSTDM, in turn, influences the MPO interregional travel forecasts.

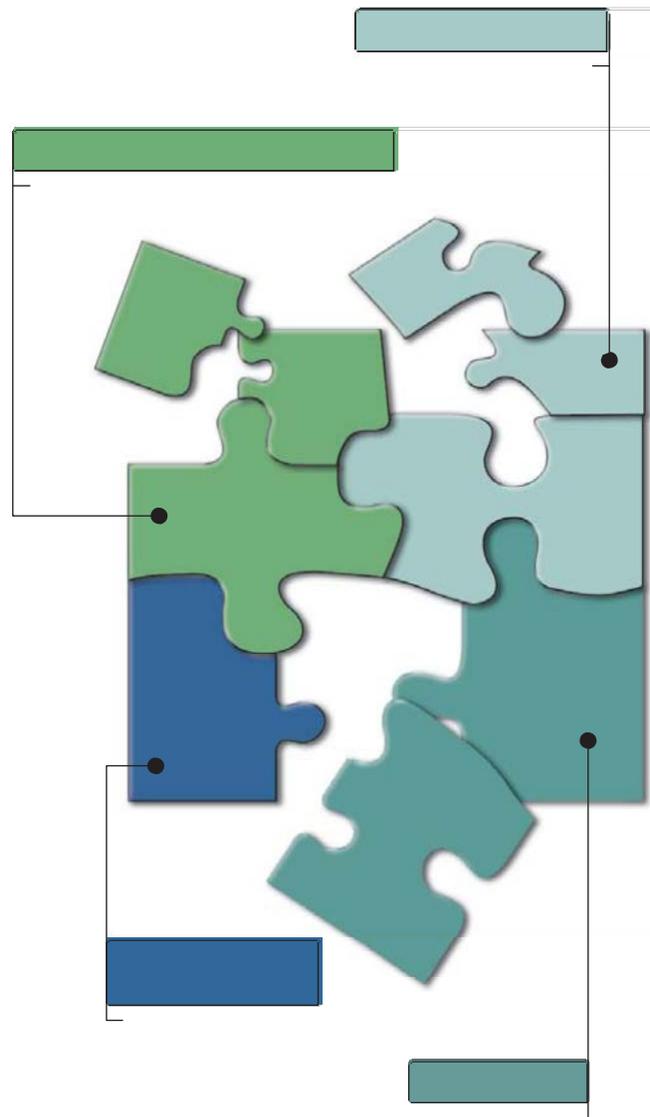
Additionally, SB 391 requires analysis of commercial travel, a significant source of traffic and emissions throughout the State. Since commercial travel is not included in SB 375's requirements, the commercial travel component in the CSTDM will be critical to determining freight's contribution to statewide GHG emissions.

Improved ability to assess performance for all travel modes

Enhanced capabilities for assessing noncapacity transportation projects, land use changes, and other policies

Improved integration between statewide and regional travel demand models

Updated forecasts of statewide travel patterns



California Statewide Freight Model

The California Statewide Freight Model (CSFM) currently is under development and, upon completion in June 2013, will include future-year forecasts to coincide with the CSTDM. The CSFM will help all stakeholders (port facilities, MPOs, and federal and State agencies) better understand freight movement-related policy, regulatory, and project decisions. The CSFM will analyze all freight modes (truck, rail, air, water, and pipeline) within California. It will assist transportation planners with assessing effects of infrastructure investments and related policies on traffic congestion, mobility, air quality, fuel consumption, public health, and climate change.

Regional Travel Demand Models

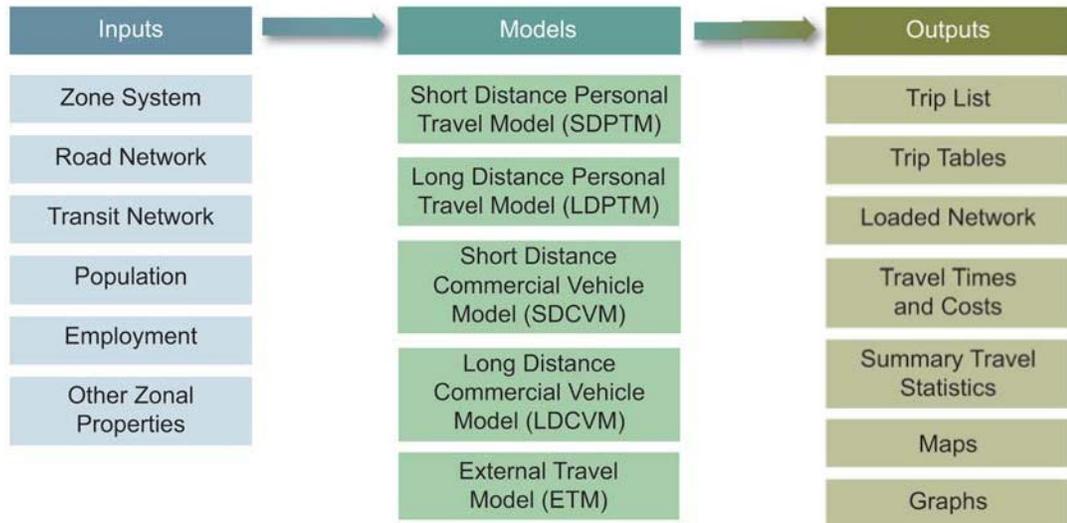
California MPOs have been upgrading their model systems to respond to SB 375 requirements. The State has provided millions in grant dollars to improve regional models' accuracy and sensitivity to GHG emission reduction strategies. The larger MPOs

are developing next-generation activity-based model systems capable of forecasting how individuals' travel behavior changes in response to transit improvements, road pricing, and other policy variables. Many of the larger MPOs also are improving their models' capability of dynamically responding to the influence of land use changes through integrated transportation and land use models.

Most smaller and midsized MPOs lack resources to develop activity-based models, but are improving their models by updating input data and developing add-on tools to better account for the effects of policy change. For example, "4D" tools help improve model estimates of how automobile use changes in response to increases in land use densification, diversity, design quality, and access to destination.

MPOs and subregional governments also are placing greater emphasis on modeling bicycling and walking, because shifting more travel to these modes can help reduce GHG emissions, and improve air quality and public health. For example, SACOG is developing the capability to analyze public health outcomes with its

Figure 4.2 California Statewide Travel Demand Model Components



modeling tools. San Francisco County used smartphone applications to collect data on bicyclist route choice and integrate this information into its travel demand model. Los Angeles County is contemplating similar improvements.

Regional Scenario Planning Tools

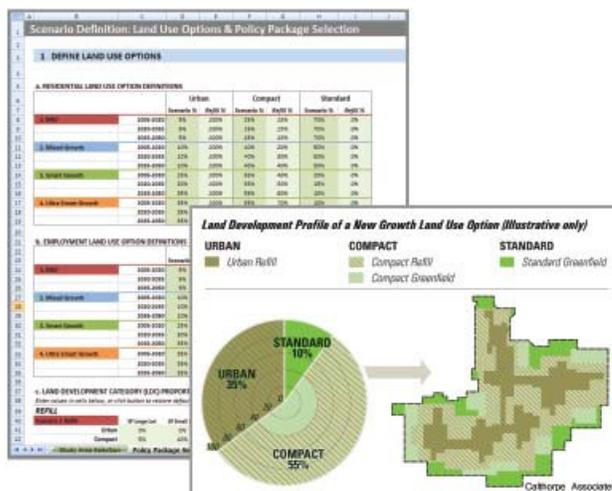
Scenario planning tools assist with exploring how changes in land use and transportation policy can influence GHG emission levels and other performance goals (e.g., health, air quality). Unlike travel demand models, these tools typically come with user-friendly, graphic interfaces that can be readily understood by the public. Examples include the I Place3s and RapidFire software tools. SACOG used I Place3s in its Blueprint Planning process to explore the effects of different growth scenarios on regional transportation performance indicators, including GHG emissions. RapidFire, developed by Calthorpe Associates with funding from the CHSRA and depicted in Figure 4.3, illustrates the GHG emission effects of land use scenarios. Other effective scenario planning tools include CommunityViz, INDEX, and Envision Tomorrow. Since these tools are most appropriate for scenario analysis at a regional level, it is not anticipated that they will be used when developing CTP 2040.

New Data Sources

Key to any model system is the quality of the supporting data, particularly large-scale detailed travel surveys for individual households. Caltrans and MPOs currently are using older data in their model systems. However, the new CHTS is in progress. The CHTS is California's first truly coordinated travel survey data collection effort, involving input from multiple State agencies (Caltrans, California Energy Commission, California ARB, the Department of Housing and Community Development, the California Department of Health) and multiple MPOs. The CHTS captures travel pattern information from up to 60,000 California households, and will provide important information on daily travel patterns, vehicle choice, and fuel use. In addition, the CHTS includes questions on long-distance travel, providing key insights on statewide travel patterns.

Another dataset of note is the 2009 National Household Travel Survey (NHTS). Caltrans provided additional funding to the NHTS to survey bicyclists and pedestrians in the San Diego Region. This data will provide invaluable information on bicycling and walking travel behavior that can be used throughout the State.

Figure 4.3 RapidFire Tool Screenshot



¹⁸ See the Regional Targets Advisory Committee Final Report for additional details. The report can be obtained on the California ARB website: <http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf>.

Caltrans Earth

Caltrans Earth is a GIS data tool that visually brings together transportation and land use data. Caltrans Earth displays planned and programmed regional and statewide transportation projects on California's multimodal transportation system. These projects include highway, local, intercity rail, aviation, transit, bicycle, and pedestrian over the next 20 years, as shown in Figure 4.4. In addition to planned and programmed projects, Caltrans Earth displays State highway and transit system conditions, roadside assets and environmental resources. New information is added to Caltrans Earth as it becomes available.

Caltrans Earth uses a Google Earth platform and is easily accessible from a web browser and mobile devices. Users can view data on a 3-D virtual globe along with accessing traditional GIS capabilities. Caltrans Earth also integrates several popular tools

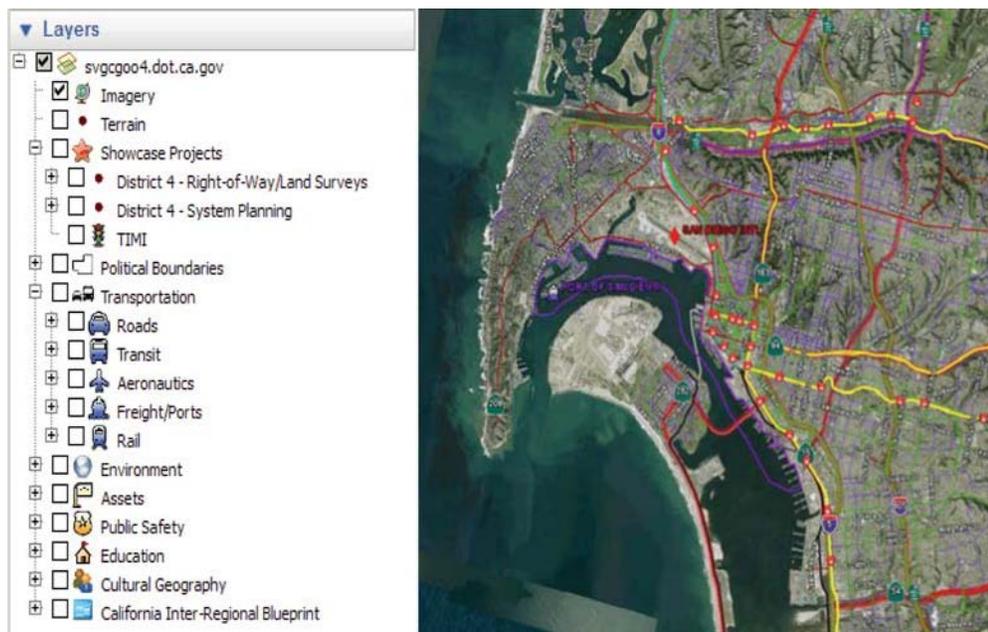
such as the Caltrans Postmile Look-Up tool, real-time transportation system data, and Google's Street View.

As a comprehensive data integration and sharing platform, Caltrans Earth supports collaboration with State, regional, and local agency partners along with stakeholder groups and the public. Caltrans Earth also can serve as a key tool for early consideration of environmental resources by enabling identification of sensitive areas during the planning phase.

Economic Analysis Tools

Federal, State, and regional agencies are placing greater emphasis on understanding the economic effects of transportation investments. Economic analysis can help identify cost effective uses of public resources, and can help address concerns regarding the economic effects of GHG emission reduction policies.

Figure 4.4 Caltrans Earth



Economic Analysis Tools

in

Federal, State, and regional agencies are placing greater emphasis on understanding the economic effects of transportation investments. Economic analysis can help identify cost effective uses of public resources, and can help address concerns regarding the economic effects of GHG emission reduction policies.

The following are some examples of this new emphasis:

- SCAG performed a detailed economic analysis of its most recent RTP/SCS plan to demonstrate effects on regional jobs and gross regional product (GRP). MTC also is analyzing the GRP effects of its RTP/SCS plan. Both MPOs are using commercially available software that interacts with regional travel demand models.
- The U.S. Department of Transportation (DOT) has required rigorous benefit-cost analysis in applications for transportation grant funding under the Transportation Investment Generating Economic Recovery grant stimulus program.
- Caltrans has invested in improving "Cal-B/C," a cost-benefit analysis tool useful for evaluating multimodal transportation improvements and quantifying a range of benefits. These benefits include travel time savings, reduced vehicle operating costs, collision reduction, and reduced emissions. This tool was used successfully last year in the STSNA to estimate the economic benefits that would be associated with development of the transportation projects identified in the study.
- Caltrans plans to use a macroeconomic model for the CTP 2040. The model will be capable of evaluating long-term economic effects resulting from changes to the transportation network or

policy decisions. The evaluation will be capable of considering all modes of transportation and provide a full spectrum of economic outputs, such as employment, statewide Gross Domestic Product, and freight movement. The model will link with the CSTDM and economic forecasts to generate estimates of economic effects.

Measuring Greenhouse Gas Emissions

The CTP 2040 will analyze whether (and to what extent) regional and State transportation strategies support achievement of the State's climate change goals.

Many of the emerging tools described above will be useful in completing this analysis. This section briefly describes sources of transportation-related emissions and how the analysis could be approached.

Reducing Greenhouse Gases from Transportation

The transportation sector produces GHG emissions when cars, trucks, planes, and trains burn fossil fuels. These GHG emissions can be reduced through strategies focusing on:

- **Fuels:** Use fuels that produce fewer GHG emissions per vehicle mile.
- **Vehicles:** Improve the efficiency of fuel use with improved vehicle engine technology (e.g., hybrid cars) or fuel economy.

- Operations: Improve the efficiency of fuel use by improving roadway operating conditions (e.g., reduced congestion).
- VMT: Reduce the use of fuel by reducing VMT. This reduction can be through compact land use development patterns, transportation demand management, or shifting travel to less energy-intensive modes (such as from car to train).

To address all four aspects, the CTP 2040 will need to:

- Project how future fuel use will change in response to expected improvements in fuels and vehicles from state-level regulations (for example, Pavley I and II and the Low Carbon Fuel Standard).
- Project any additional reductions resulting from regional SCS plans and planned state-level GHG emission reduction efforts.
- Identify gaps where additional policies or investments are needed to meet the 2020 or 2050 targets.

Figure 4.5 illustrates how future baseline GHG emissions (blue line) must be reduced to meet the 2020 and 2050 targets.

Methods Used to Calculate Greenhouse Gas

Two primary methods can be used to determine the amount of GHG emissions attributable to transportation. The first method is to estimate the VMT occurring and at what speeds, because travel speeds affect GHG emission rates. This information is then input into the California ARB's EMFAC 2011 model. The resulting numbers will be gross amounts of pollutants by type. VMT forecasts are typically generated using travel demand models.

The second method to calculate GHG emissions produced from the transportation sector is to determine the fuel consumption by fuel type. These fuel forecasts can then be directly converted into amounts of pollutants (because the amount of pollutants produced per unit of consumed fuel is a known quantity). Fuel consumption forecasts can be based on fuel receipts and then validated utilizing data from the California Motor Vehicle Stock Travel and Fuel Forecast, the California Energy Commission, and the California ARB.

SB 391 states that the CTP must take into account all modes for the movement of people and freight. Table 4.1 lists all included modes of travel and likely sources of data used to calculate GHG emissions for each.

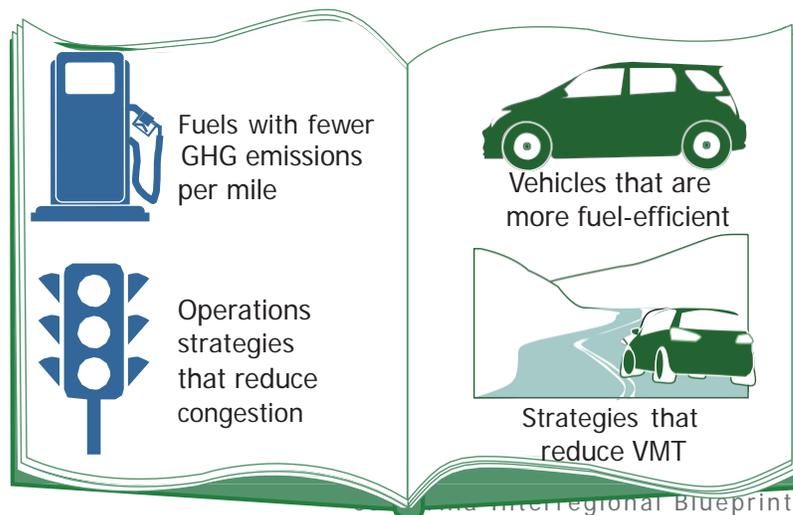
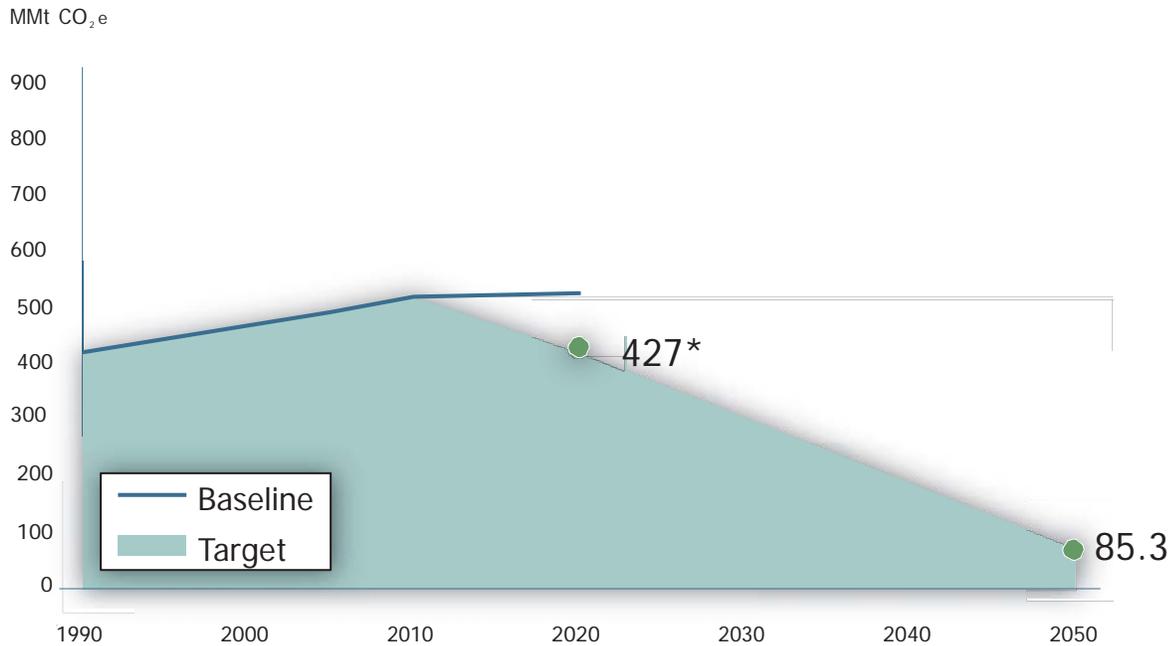


Figure 4.5 Greenhouse Gas Targets



Source: Air Resources Board—Greenhouse Gas Inventory 2020 Emissions Forecast. (October 28, 2010) <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>.

*1990 Statewide Greenhouse Gas Emissions Level and 2020 Emissions Limit, ARB, December, 2007.

TABLE 4.1 POSSIBLE SOURCES OF GREENHOUSE GAS FORECASTS FOR THE 2040 CTP

Mode	Description	Possible Sources for Greenhouse Gas Forecasts
On-Road Travel	Includes passenger cars; light-, medium-, and heavy-duty trucks; and motorcycles.	<ul style="list-style-type: none"> Fuel consumption forecasts (primary source). CSTDM (automobiles and commercial trucks used to validate primary source). CSFM (commercial trucks used to validate primary source). Regional travel demand models (automobiles used to validate primary source).
Rail	All locomotive-related emissions.	<ul style="list-style-type: none"> Fuel consumption forecasts (primary source). 2012 California State Rail Plan (contains estimates of future rail travel and rail system build-out used to adjust primary source data). CSTDM (used to validate primary source and adjustments from rail plan assumptions). CSFM (used to validate primary source and adjustments from rail plan assumptions).
Air	Aircraft-related emissions for flights that begin and end within California.	<ul style="list-style-type: none"> Fuel consumption forecasts (primary source). CSTDM (used to validate primary source).
Waterborne	Emissions from shipping activities that occur in California or within 24 nautical miles of the coast.	<ul style="list-style-type: none"> Fuel consumption forecasts (primary source). CSFM (used to validate primary source).

Figure 4.6 shows the emissions contribution of these four categories plus all nontransportation emissions included in the California ARB 2020 GHG emissions forecast. The forecast is an estimate of the emissions expected in the year 2020 if none of the foreseeable measures included in the AB 32 Scoping Plan are met. The on-road category accounts for about 92 percent of transportation emissions, and slightly more than one-third of the total 2020 inventory GHG emissions.

4.2 EARLY ACTIONS TO SUPPORT SB 375 IMPLEMENTATION

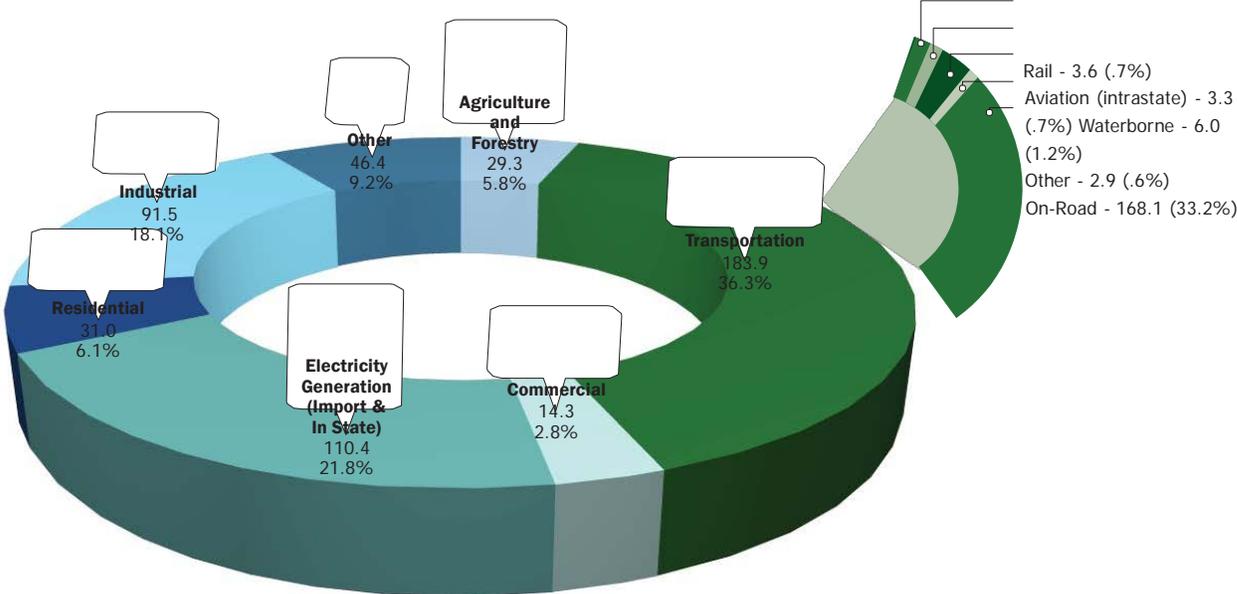
MPOs have worked collaboratively with Caltrans, the California ARB, and other State agencies to identify an effective planning approach for implementing SB 375. Through the Regional Targets Advisory Committee Report, the 2010 Regional Transportation Plan Guidelines, and specific methodological

guidance provided by the California ARB, the MPOs have obtained guidance from the State as to how to formulate RTP/SCS plans, and how these documents should be reviewed and processed.

In addition, the California ARB will periodically review the SB 375 GHG emission reduction targets in accordance with SB 375 requirements. Recent enhancements in the modeling capabilities of the MPOs should be taken into account and work to ensure consistent approaches to planning assumptions and performance measurement should be undertaken.

Furthermore, implementation of the SCS plan is not guaranteed when an MPO adopts its RTP. Implementation challenges will need to be overcome to realize the full benefits of SCS planning efforts. While some potential State roles were described in Section 3.5, the State could consider how to take additional early actions on the following key

Figure 4.6 California 2020 GHG Emissions Inventory (Million Metric Tons of CO₂ Equivalent)



Source: Air Resources Board—Greenhouse Gas Inventory 2020 Emissions Forecast. <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>.

implementation issues by working in collaboration with California's MPOs and RTPAs:

programs cannot

- **Streamlined Project Delivery:** To achieve planned GHG emission reductions, some SCS projects and programs must be implemented relatively rapidly. Extended processing time for environmental clearances, federal permits, and reviews increase project costs and may delay project completion. These delays need to be addressed without undermining the intent of the requirements, and projects must have strong local champions to ensure they will ultimately be implemented. Some efforts to streamline project delivery at the State and federal levels are underway, such as reduced CEQA requirements for infill projects under SB 226. Caltrans should continue to assist in streamlining transportation project delivery by providing clear guidance to its district offices regarding ways it can support and promote shared use of State highway rights-of-way. This guidance could address sharing rights-of-way with bus rapid transit (BRT) projects, transit stations, and other necessary transportation projects that support alternative travel modes.
- **Adequate Funding for Transportation Projects and Services:** Caltrans took an active role in developing the 2011 STSNA. Caltrans will continue taking an influential role in the periodic updates of the STSNA and in the formulation of policy recommendations for transportation funding to support further advocacy efforts. Caltrans also will continue to provide research and support in the ongoing discussion regarding user taxes and fees.
- **Adequate Funding for Transit Supportive Development:** Many MPOs in California have initiated programs to provide funding for infrastructure needed to support transit-oriented development. However, these

Caltrans' Smart Mobility Performance Measures could serve as a starting place for evaluating performance results throughout the State.

meet all the identified needs. The State could assist by targeting the use of Caltrans funds to support projects that lead to transit supportive development. These funds could support interregional planning partnerships focused on improving interregional transit service and "first mile—last mile" transit access strategies that provide greater opportunities for transit supportive development at transit stations located along State highways.

- Improvements in Performance Measurement and Monitoring: The need to accurately predict how transportation and land use strategies affect GHG emissions have brought to light the broader challenges associated with measuring the overall performance of long-range transportation plans over time. As a result, much greater attention is being paid to performance measurement methods, including the use of models, forecasting techniques, selection of relevant performance measures and

targets, and evaluation of results. Caltrans' Smart Mobility 2010 report recommended "SMPMs" that could serve as a starting place for evaluating performance results throughout the State.

- Continued State and Regional Collaboration on SCS Development and Implementation: In recent years, MPOs and State agencies have shared experience and knowledge in how to develop and implement an RTP/SCS plan. In particular, a technical working group composed of MPOs and

the various State agencies involved in SB 375 implementation has been meeting regularly over the past years and has developed guidance on how to address many complex SCS implementation issues. This collaborative process could continue and lessons learned can be incorporated into the next update of the 2010 Regional Transportation Plan Guidelines. This update should be completed in advance of the next round of RTP updates to maximize their usefulness.

4.3 CONCLUSIONS

The CIB is Caltrans' strategic framework for linking statewide transportation goals and regional transportation and land use goals to produce a unified transportation strategy in the CTP 2040. This CIB Interim Report lays the groundwork for the CTP 2040 by summarizing regional efforts with respect to transportation-related GHG emission reduction, and their potential effects on the statewide transportation system. Chapters 2 and 3 described how most regional governments are well underway developing RTP/SCS plans. SANDAG, SACOG, and SCAG have adopted their first RTP/SCS plans, and demonstrated that they can reduce GHG emissions to target levels required by SB 375.

The CTP 2040 will need to build on and incorporate these regional strategies because such strategies could influence interregional travel patterns and GHG emissions. Key aspects of completed RTP/SCS plans were summarized in Chapter 3, and include:

- Greater regional investments in transit capacity, connectivity, and "active transportation" infrastructure.
- Multiple new proposals for managed lanes, especially in Southern California.

- More emphasis on location efficient development patterns.
- Overall transportation funding constraints facing all local, regional, and State agencies.
- Increased opportunities for streamlined environmental review of development projects.
- Greater coordination between planning efforts at all levels of government.

The CIB Interim Report also describes the important roles Caltrans and other State agencies can play in integrating regional efforts and providing leadership on topics of statewide significance, both through the development of CTP 2040 and early actions that can be taken prior to the adoption of the CTP 2040. These roles may include:

- Investing in strategic capital and operations projects.
- Supporting streamlined regulation.
- Providing funding support.
- Coordinating data and analysis.
- Monitoring the statewide transportation system.
- Supporting local, regional, and leading statewide corridor planning.
- Addressing issues not fully covered by regional plans.

The challenge of maintaining a world-class transportation system while balancing the State's ambitious economic, environmental, and social equity goals is daunting. However, the partnerships formed through the implementation of SB 375 and SB 391 provide the vision and the resources to address these challenges, thereby reinforcing California's position as the national leader in planning a sustainable future.

Regional Transportation Plans

AMBAG (Association of Monterey Bay Area Governments):

http://www.ambag.org/pdf/monterey_bay_area_mobility_2035.pdf

BCAG (Butte County Association of Governments):

<http://www.bcag.org/Planning/2008-RTP/index.html>

FCOG (Fresno Council of Governments):

<http://www.fresnocog.org/rtp>

KCOG (Kern Council of Governments):

<http://www.kerncog.org/cms/transportation/rtp>

KCAG (Kings County Association of Governments):

<http://www.kingscog.org/assets/2011%20RTP.pdf>

MCTC (Madera County Transportation Commission):

http://www.maderactc.org/pdf_files/RTP/Final%202011%20RTP.pdf

MCAG (Merced County Association of Governments):

<http://www.mcagov.org/programs/trans/1460.html>

MTC (Metropolitan Transportation Commission):

http://www.mtc.ca.gov/planning/plan_bay_area/

SACOG (Sacramento Area Council of Governments):

<http://www.sacog.org/mtp/2035/>

SANDAG (San Diego Association of Governments):

<http://www.sandag.org/2050rtp>

SJCOG (San Joaquin Council of Governments):

http://www.sjcog.org/programs-projects/Transportation_files/RTP.htm

SLOCOG (San Luis Obispo Council of Governments):

http://www.slocog.org/cm/Programs_and_Projects/2010_Regional_Transportation_Plan.html

SBCAG (Santa Barbara County Association of Governments):

http://www.sbcag.org/PDFs/planning/2008_RTP/RTP/RTP_Re-Adopted_FINAL.pdf

SCRTPA (Shasta County Regional Transportation Planning Agency):

http://www.srta.ca.gov/RT_RTP.html

SCAG (Southern California Association of Governments):

<http://rtpscs.scag.ca.gov/Pages/default.aspx>

STANCOG (Stanislaus Council of Governments):

<http://www.stancog.org/rtp.shtm>

TMPO (Tahoe Metropolitan Planning Organization):

<http://www.tahoempco.org/Mobility2035/Default.aspx?SelectedIndex=1>

TCAG (Tulare County Association of Governments):

<http://www.tularecog.org/rtp.php>

A.1 MODAL PLANS AND CTC NEEDS ASSESSMENT

California Aviation System Plan (2006):

http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/Documents/integrating_modal_plans_docs/CASP2006.pdf

California State Rail Plan (2007):

<http://www.dot.ca.gov/rail/go/dor/california-state-rail-plan/index.cfm>

California Transportation Commission Statewide Transportation System Needs Assessment (2011):

http://www.catc.ca.gov/reports/2012%20Reports/Trans_Needs_Assessment_corrected_01172012.pdf

Goods Movement Action Plan (2007):

http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/Documents/integrating_modal_plans_docs/gmap-1-11-07.pdf

Interregional Transportation Strategic Plan (1998):

http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/Documents/integrating_modal_plans_docs/Strategic_Plan.pdf

Statewide Transit Strategic Plan (2011 Factsheet):

http://www.dot.ca.gov/hq/tpp/californiainterregionalblueprint/Documents/integrating_modal_plans_docs/STSP_FACTSheetdraft.pdf

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Glossary and Acronyms

B.1 GLOSSARY

Alternative Planning Strategy (APS): As part of SB 375, a region must prepare an APS if the actions and strategies outlined in its SCS will not allow the region to meet its GHG emission reduction targets.

Assembly Bill 32 (AB 32): Also known as the Global Warming Solutions Act of 2006, this law called for the adoption of State GHG emission reduction targets for 2020 and directed the California ARB to prepare a scoping plan to determine how to reach the 2020 reduction targets.

Bus Rapid Transit: Corridor-level services providing fast and frequent transit services that are designed to take advantage of freeway improvements such as HOV and managed lanes in order to serve longer distance regional trip-making.

California Air Resources Board (ARB): The State agency responsible for adopting State air quality standards, establishing emission standards for new cars sold in the State, overseeing activities of regional and local air pollution control agencies, and setting regional targets for reducing GHG emissions.

California High-Speed Rail Authority (CHSRA): The CHSRA was created by the California State Legislature in 1996 to develop a plan for the construction, operation, and financing of a statewide, intercity high-speed passenger rail system.

California Transportation Commission (CTC): A State agency that sets State spending priorities for many State and federally funded highway and transit projects and allocates funds to those projects. CTC members are appointed by the governor.

Commuter Rail: Conventional rail passenger service within a metropolitan area. Service primarily is in the morning (home-to-work) and afternoon (work-to-home) travel periods.

Congestion: Travel time or delay in excess of what is normally experienced under free-flow traffic conditions. Congestion is typically accompanied by lower speeds, stop-and-go travel conditions, or queuing, such as behind a highway bottleneck ramp meters or heavily used intersections.

Corridor Mobility Improvement Account: A \$4.5 billion congestion relief component of Proposition 1B, a measure approved by voters in 2006 that provides nearly \$19.9 billion in infrastructure bonds.

Council of Governments (COG): A voluntary organization of local governments that strives for comprehensive regional planning. SANDAG is the COG in the San Diego region.

Environmental Justice: The fair treatment of people of all races, cultures, and incomes during the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

EPA: See U.S. EPA.

Freeway: A divided highway with limited access and grade-separated junctions, and without traffic lights or stop signs.

Fuel Excise Tax or Gas Tax: The tax applied to each gallon of fuel sold. Currently, the federal government has imposed a per-gallon tax of 18.4 cents, and the State has imposed a per-gallon excise tax of 35.3 cents per gallon.

Geographic Information System (GIS): A system designed to store, analyze, and present various types of geographical data. GIS analysis is commonly used in planning processes and is generally designed specifically for a jurisdiction or organization.

Grade Separation: A physical and/or structural separation between intersecting roads and/or railway tracks. One road or railway track typically travels over or under the other via an overpass, tunnel, or other structure.

Greenhouse Gas Emissions (GHG Emissions): Gases that influence global climate change. They include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Heavy Rail: Railroad services that operate in a mixed-user environment on conventional railroad tracks. Heavy rail services include freight trains, Amtrak, Commuter Rail, and most conventional rail transit systems.

High-Occupancy Toll Lane (HOT Lane): HOT lanes are limited access lanes in which carpools, vanpools, and buses travel for free, while other vehicles gain access by paying a fee.

High-Occupancy Vehicle (HOV): A vehicle that carries more than one occupant. Examples include carpools, vanpools, shuttles, and buses.

High-Occupancy Vehicle Lane (HOV Lane): An exclusive road or traffic lane that typically has a higher operating speed and lower traffic volumes than a general purpose or mixed-flow lane. In California, vehicles that typically can use HOV lanes include carpools, vanpools, buses, other multipassenger vehicles, motorcycles, and emergency vehicles.

High-Speed Rail (HSR): Railroad passenger service that, as defined by California State law, operates at maximum speeds of more than 200 miles per hour. Because of the speed, high-speed rail normally operates on intercity (longer) routes.

Highway: A general term usually referring to a state or federally designated urban or rural route, designed to accommodate longer trips in the region.

Intelligent Transportation Systems (ITS): A general classification of transportation technologies, management tools, and services made possible through advances in computer and communication technologies. ITS are used to make transportation systems safer and more efficient.

Intercity Rail: Railroad passenger service that primarily serves longer trips, such as those between major cities or regions.

Interim Report Working Group: A body of representatives from California MPOs, rural RTPAs, tribal governments, the California ARB, CTC, and Caltrans that met regularly for approximately one year to guide the development of the Interim Report. This group was facilitated by Caltrans.

Intermodal: Passenger or freight transportation services which involve or use more than one type of transportation facility (or mode). Aviation, automobile, rail, and transit are travel modes.

Interregional Trip: A trip that takes place in more than one region. For example, a trip from Sacramento County into the San Joaquin Valley is an interregional trip. SB 391 requires Caltrans to address these types of

trips.

Intraregional Trip: A trip that is made within one region. For example, a trip from Yolo County to Sutter County, both within the SACOG region, is an intraregional trip. SB 375 focuses on this type of trip.

Light Rail Transit (LRT): A type of transit vehicle and service that uses steel wheels and operates over railroad tracks. LRT systems generally serve stations averaging one mile apart, are not remotely controlled, and can operate in a separated right-of-way or on public streets.

Los Angeles-San Diego-San Luis Obispo (LOSSAN): The LOSSAN Rail Corridor Agency coordinates planning and programming on the coastal rail line. SANDAG, MTS, and NCTD are voting members of LOSSAN, along with regional transportation planning agencies in Orange, Los Angeles, Ventura, Santa Barbara, and San Luis Obispo counties. LOSSAN sets priorities for improvements in the corridor that will increase the capacity of the rail line and the reliability of service.

Managed Lanes (or Express Lanes): These lanes provide access for carpools, vanpools, bus, and solo drivers who pay a fee to use the lanes. The lanes can be barrier-separated and some lanes can be reversed to go with the flow of traffic.

Metropolitan Planning Organization (MPO): A federally recognized agency that is responsible for regional transportation planning in each metropolitan area.

Mode: One of the various forms of transportation, including automobile, transit, bicycle, and walking. Intermodal refers to the connection between modes; multimodal refers to the availability and/or use of multiple transportation modes.

Mode Split: The percentage of trips that use each of the various travel modes.

Pass-Through Trip: A trip in which a person or vehicle passes through a region but its origin and destination are outside that region.

Peak Hours: The time of day when the highest concentrations of vehicles or transit riders are on the road or on another transit facility. The morning peak period is generally considered to be from 6 a.m. to 9 a.m.; the afternoon peak period is from 3 p.m. to 6 p.m.

Performance Measures: Objective, quantifiable measures used to evaluate the performance of the transportation system, and to determine how well planned improvements to the system are achieving established objectives.

Port of Entry (POE): Transborder facilities that process conveyances, passengers, and goods entering and exiting the United States.

Public Transportation: Travel by bus, rail, or other vehicle, either publicly or privately owned, that provides general or specialized service on a regular or continuing basis.

Regional Transportation Plan (RTP): A minimum 20-year plan that is required by state and federal law to guide the development of the region's transportation system.

Regional Transportation Planning Agency (RTPA): A State-designated agency responsible for preparing the RTP and for administering State transportation funds.

Ridership: The number of transit users, usually reported as a yearly total or as the average for a normal workday.

Rideshare: A mode of travel in which at least two individuals share the same vehicle to get to their destination. Rideshare vehicles include private automobiles, privately owned and operated vans and buses, as well as public transportation.

Right-of-Way (ROW): The land required for the construction and/or operation of transportation infrastructure.

Rural Trip: A trip that is made entirely in a rural area; it does not cross into an urban area.

Safe Routes to School: A State and Federal Program that funds education, encouragement campaigns, and infrastructure improvements to help decrease traffic congestion around schools, and to make the journey to school on foot or bike more feasible for children.

Senate Bill 375 (SB 375): This law, passed by the California State Legislature in 2008, established a process for the California ARB to implement AB 32 for the transportation sector and required the California ARB to adopt regional GHG emission reduction targets for cars and light trucks. Additionally, this legislation mandated that MPOs create an SCS to identify how each region will achieve its GHG emission reduction targets.

Senate Bill 391 (SB 391): This law, passed in 2010 by the California State Legislature, requires Caltrans to update the CTP by 2015. This plan is required to illustrate how the state's metropolitan regions, rural areas, and State agencies can work together to achieve the GHG emission reduction targets established by AB 32 and included in

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SB 375 as well as other statewide goals.

Smart Growth: A compact, efficient, and environmentally sensitive pattern of development that provides people with additional travel, housing, and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities, while preserving open space and natural resources.

State Highway: A State-designated roadway. It may be urban or rural.

Sustainable Communities Strategy (SCS): A new element of the RTP, as required by SB 375, that demonstrates how development patterns and the transportation network, policies, and programs can work together to achieve the state's targets for reducing GHG emissions from cars and light trucks in a region.

Transit Capital: Refers to the assets that make up a transit system, as opposed to the operating aspect of the system.

Transportation Demand Management (TDM): Programs to reduce demand by automobiles on the transportation system, by promoting telecommuting, flextime, bicycling, walking, transit use, staggered work hours, and ridesharing.

Trolley: The urban light rail transit service currently provided in the San Diego region: the San Diego Trolley.

U.S. Environmental Protection Agency (EPA): The federal agency charged with setting policy and guidelines, and carrying out legal mandates, for the protection of national interests in environmental resources.

Vanpool: A vehicle operating as a ridesharing arrangement, providing transportation to a group of individuals typically traveling directly between their homes and employment locations within the same geographic area.

Vehicle Miles of Travel (VMT): The total number of miles traveled on all roadways by all vehicles. Reducing VMT can help ease traffic congestion and improve air quality.

B.2 LIST OF ACRONYMS

AB	Assembly Bill
AMBAG	Association of Monterey Bay Area Governments
APS	Alternative Planning Strategy
ARB	California Air Resources Board
BCAG	Butte County Association of Governments
BRT	Bus Rapid Transit
CEQA	California Environmental Quality
Act CHSRA	California High-Speed Rail Authority
CHTS	California Household Travel Survey
CIB	California Interregional Blueprint
COG	Council of Governments
CSFM	California Statewide Freight Model
CSMP	Corridor System Management Plan
CSTDM	California Statewide Travel Demand Model
CTC	California Transportation Commission
CTP	California Transportation Plan
GHG	Greenhouse Gas
GIS	Geographic Information System

LIST OF ACRONYMS (CONTINUED)

GRP	Gross Regional Product
HOT	High-Occupancy Toll
HOV	High-Occupancy Vehicle
HSR	High-Speed Rail
HUD	U.S. Department of Housing and Urban Development
I	Interstate
LOSSAN	Los Angeles—San Diego—San Luis Obispo
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MTP	Metropolitan Transportation Plan
NHTS	National Household Travel Survey
PDG	Planning Directors Group
PeMS	Performance Measurement System
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
SACOG	Sacramento Area Council of Governments
SANDAG	San Diego Association of Governments
SB	Senate Bill

LIST OF ACRONYMS (CONTINUED)

SBCAG	Santa Barbara County Association of Governments
SCAG	Southern California Association of Governments
SCRTPA	Shasta County Regional Transportation Planning Agency
SCS	Sustainable Communities Strategy SGC California Strategic Growth Council
SJCOG	San Joaquin Council of Governments
SLOCOG	San Luis Obispo Council of Governments
SMPM	Smart Mobility Performance Measures
SR	State Route
STSNA	CTC 2011 Statewide Transportation Needs Assessment
TRPA	Tahoe Regional Planning Agency
UC	University of California
VMT	Vehicle Miles of Travel

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