

## 3.17

# TRANSPORTATION, TRAFFIC, AND SAFETY

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This section of the Program Environmental Impact Report (PEIR) describes transportation, traffic, and safety in the SCAG region; discusses the potential impacts of the proposed 2016-2040 Regional Transportation Plan/Sustainable Communities Strategies (“2016 RTP/SCS,” “Project,” or “Plan”) on transportation, traffic, and safety; identifies mitigation measures for the impacts; and evaluates the residual impacts. Transportation and traffic were evaluated consistent with Appendix G of the 2015 State California Environmental Quality Act (CEQA) Guidelines. The SCAG RTP/SCS PEIR addresses environmental impacts for the 2016 RTP/SCS transportation network including transportation: active transportation, aviation and airport ground access, corridor planning, goods movement, high speed rail, intelligent transportation systems, safety and security, transit, and transportation finance within the SCAG region. Transportation, traffic, and safety within the SCAG region were evaluated at a programmatic level of detail, in relation to the 2016 RTP/SCS and the Circulation or Transportation Element of the General Plans of the six counties and 191 cities within the SCAG region; a review of Congestion Management Plans for the SCAG Region, California Transportation Plan by Caltrans, and related literature germane to the SCAG region, as well as a review of the 2012 SCAG RTP/SCS PEIR.

The Southern California transportation system is a complex intermodal network designed to carry both people and goods. It consists of roads and highways, public transit, paratransit, bus, rail, airports, seaports, and intermodal terminals. The regional highway system consists of an interconnected network of local streets, arterial streets, freeways, carpool lanes, and toll roads. This highway network allows for the operation of private autos, carpools, private and public buses, and trucks. Active transportation modes, such as bicycles and pedestrians, share many of these facilities. The regional public transit system includes local shuttles, municipal and area-wide public bus operations, rail transit operations, regional commuter rail services, and interregional passenger rail service. The freight railroad network includes an extensive system of private railroads and several publicly owned freight rail lines serving industrial cargo and goods. The airport system consists of commercial, general, and military aviation facilities serving passenger, freight, business, recreational, and defense needs. The region’s seaports support substantial international and interregional freight movement and tourist travel. Intermodal terminals consisting of freight processing facilities, which transfer, store, and distribute goods. The transportation system supports the region’s economic needs, as well as the demand for personal travel.

Transit use is growing in the SCAG region. As of 2012, transit agencies in the SCAG region reported 716 million boarding. This represents growth of nearly 26 percent since 1991, but roughly 6 percent below the high point in 2008.<sup>1</sup>

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<sup>1</sup> Southern California Association of Governments. June 2015. *Fiscal Year 2011-12 Transit System Performance Report*.

## Definitions

**California Transportation Plan (CTP):** This is a statewide, long-range transportation plan to meet future mobility needs and reduce greenhouse gas emissions.<sup>2</sup> The CTP defines performance-based goals, policies, and strategies to achieve the collective vision for California's future, statewide, integrated, multimodal transportation system.

**Congestion Management Plan (CMP):** This is a State-mandated program enacted by the State legislature to address the increasing concern that urban congestion is affecting the economic vitality of the State and diminishing the quality of life in some communities. The CMP provides the analytical basis for transportation decisions through the State Transportation Improvement Program.

**Congestion Management Agency (CMA):** A CMA is a county-wide body comprising of local elective officials within a County that administers the CMP to keep traffic levels manageable. In the past, state gas tax revenue had historically been used to fund road and highways. With the passage of Proposition 111 in the 1990s, state gas tax and directed revenue are provided to fund road, bicycle, pedestrian, and public transit projects in addition to highways to help manage congestion for multi-modal purposes. CMA is charged with coordinating land use, air quality, and transportation planning among the local jurisdictions, including monitoring the levels of congestion on major roads and analyzing the impacts that a proposed development will have on future traffic congestion.

**Goods Movement:** Refers to the transportation of for-sale products from the location of their manufacture or harvest to their final retail destination.

**Level of Service (LOS):** In the context of traffic analysis, this is a measure used to relate the quality of traffic service. LOS is used to analyze highways by categorizing traffic flow and assigning quality levels of traffic based on performance measures such as speed and density.

**Million Annual Passengers (MAP):** Number of people taking public transit, airline flight, bus, or train calculated expressed in the unit of 100,000 in terms of boarding counts.

**Peak Hour:** The part of the day during which traffic congestion on roads and crowding on public transport is at its highest.

**Safety:** Protection of persons and property from unintentional damage or destruction caused by accidental or natural events.

**Transportation Demand Management (TDM):** Strategies and actions directed at influencing the mode, frequency, time, route, or length of travel in order to maximize the efficiency and sustainable use of transportation facilities. TDM strategies typically include providing information on travel choices; managing parking, marketing and communications, financial incentives, and disincentives; providing and operating facilities that make the use of non-solo driving more attractive; and encouraging telework and flexible work strategies.

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<sup>2</sup> California Department of Transportation. April 2013. *California Transportation Plan 2040: Fact Sheet*.

**Transportation System Management (TSM):** Transportation system management refers to a set of strategies that largely aim to reduce greenhouse gas (GHG) emissions by reducing congestion, primarily by improving transportation system capacity and efficiency. TSM strategies may also address a wide range of other externalities associated with driving such as pedestrian/driver safety, efficiency, congestion, travel time, and driver satisfaction. Some TSM strategies are designed to reduce total and systemic congestion and improve system-wide efficiency, while other strategies target particularly problematic areas where improvements could greatly affect congestion, safety, efficiency, and GHG emissions.

**Vehicle Miles Traveled (VMT):** The number of VMT provides an indicator of the travel levels of the roadway system by motor vehicles in a given time period. This number is estimated based upon traffic volume counts and roadway length.

### 3.17.2 Regulatory Framework

This regulatory framework focuses on the federal, State, and local statutes and regulations where the primary objective is improvement of transportation systems, standards, and travel demand measures. However, there are other regulations that are focused on increased energy efficiency and reduction of greenhouse gas emissions, that if accomplished would be expected to contribute to improvement in traffic levels. Those regulations have been addressed respectively in Section 3.6, *Energy*, and Section 3.8, *Greenhouse Gas Emissions and Climate Change*.

#### Federal

##### *Federal Clean Air Act (CAA) Transportation Conformity*

Congress passed the first major CAA (42 U.S. Code [USC] 7506(c)) in the 1970s which give EPA primary responsibility to regulate mobile and stationary sources of emissions and direct states to develop SIPs and required conformity determinations for areas designated nonattainment against the NAAQS, which included all six counties in the SCAG region. Conformity analysis and determination can be done at a regional level. SCAG provides a regional transportation conformity analysis in the Plan to address all nonattainment areas within the six county- region. The regional conformity determination is updated every 4 years with the RTP and associated FTIP, and is done as a part of the project-level conformity process for regionally significant projects as they occur. A hot spot analysis is provided to confirm that the project will not cause or worsen a localized violation of the standard for carbon monoxide (CO) or particulate matter (PM10 and/or PM2.5) in the existing nonattainment area. For more information, refer to Section 3.3 Air Quality.

##### *Metropolitan Transportation Planning*

The provisions of Title 23 USC Section 134 et seq. provides direct authority for Metropolitan Planning Organizations (MPOs) such as SCAG to act as a regional transportation planning organization with direct responsibility for carrying out the Regional Transportation Plan (RTP). SCAG is tasked with carrying out the transportation planning process and adopting long-range transportation plans. Collaborating with state and public transportation operators, SCAG undertakes a performance-driven, outcome-based approach to planning for the six county regions. SCAG must prepare a transportation plan to be

updated every four years, including identification of transportation facilities and factors for each mode of non-motorized transport to major roadways, transit, multimodal and intermodal facilities, and connectors that should function as an integrated system serving regional transportation functions. The scope of transportation planning process is to provide consideration of projects and strategies that will achieve the following objectives:

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users
- Increase the accessibility and mobility of people and for freight
- Protect and enhance the environment by promoting consistency between transportation improvements and State and local planned growth and economic development patterns
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Emphasize the preservation of the existing transportation system

### *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*

In 2005, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU; Public Law 109–59) was signed into law. SAFETEA-LU provides funding for highways, highway safety, and public transportation totaling \$244.1 billion, representing the largest surface transportation investment ever. The Act followed two bills that highlighted surface transportation funding needs—the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21), which shaped the highway program to meet changing transportation needs throughout the nation. SAFETEA-LU addresses challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment. SAFETEA-LU also gives state and local transportation agencies more flexibility to solve transportation problems. SAFETEA-LU expired in 2009 but Congress extended the legislation; the most recent extension is known as Moving Ahead for Progress in the 21st Century (MAP-21). MAP-21 reauthorized most SAFETEA-LU highway, transit and Safety programs through September 2014.

### *Moving Ahead for Progress in the 21st Century (MAP-21)*

MAP-21 (Public Law 112–141) replaces SAFETEA-LU as the nation’s surface transportation program and extended the provisions for fiscal year (FY) 12 with new provisions for FY 13. MAP-21 funds surface transportation programs at over \$105 billion for FY 2013 and FY 2014 and provides additional funding by the passage of continuing resolutions. It is intended to create a streamlined, performance-based, and multimodal program to address challenges facing the U.S. transportation system. These challenges include improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, protecting the environment, and reducing delays in project delivery. MAP-21 builds on and refines many of the highway, transit, bike, and pedestrian programs and policies first established under ISTEA in 1991. One of most significant changes from MAP-21 affecting MPOs, states, and transit operators is the new requirement for performance-based planning that involves use of performance measures and target setting. The U.S. Department of Transportation (U.S. DOT) is in the process of the rulemaking effort to implement these MAP-21

requirements.

Section 1305 of MAP-21 discusses a series of programmatic approaches to conduct environmental review. The rule promulgated the Federal Transit Administration (FTA) and Federal Highway Administration (FHWA) to establish formal procedures for handling specific environmental consultation, review, and compliance. The legislation is also intended to set priorities to further define roles and responsibilities on promoting transparency, timeliness, and describe the relationship between programmatic analysis and future tiered analysis.

### ***Intelligent Transportation System (ITS)***

ITS are advanced applications aiming to provide innovative services relating to different modes of transport and traffic management and enable various users to be better informed and make safer, more coordinated, and smarter use of transport networks. With the passage of MAP-21, the ITS has fundamentally shifted from a program of research and development to one focused on infrastructure deployment. Traditionally, an ITS project is one that has information and communication technologies applied to the field of road transport, including infrastructure, vehicles, and users, and in traffic management and mobility management, as well as interfaces with other modes of transport. One way to incorporate MAP-21 vision and implement safety and security into transportation planning is through greater collaboration between transportation planning and operations. Collaboration is particularly critical in metropolitan regions and congested corridors where numerous jurisdictions, agencies, and service providers are responsible for the safety, security, and efficient operation of various aspects of the transportation system. Not only are the roadway and transit system operators themselves dependent on the transportation system, but so are police, fire, and medical services, emergency response and domestic security systems, and port authorities. Because the successful operation of ITS projects usually depend on coordination and communication between different agencies and the systems they operate, it is essential that there be a region-wide framework for cooperation to help achieve that coordination and communication in the most cost-effective manner. This framework is referred to as the Southern California Regional ITS Architecture.

### ***ITS Program in MAP-21: Southern California Regional ITS Architecture***

MAP-21 authorizes the Federal Highway Administration (FHWA) to encourage ITS deployment through demonstrations and grant program. The purpose is to promote the integrated management and operations of the transportation system, thereby improving multimodal transportation system management and operation. In the planning stage, ITS would be incorporated into existing transportation planning process. This goal of integration has resulted in a creation of a regional ITS architecture called the Southern California Regional ITS Architecture. The Southern California ITS Regional Architecture includes all six counties in the SCAG region. The goal of the project is to document the ITS Architecture, which is a framework for ensuring institutional agreement and technical integration of technologies for the implementation of projects or groups of projects under an ITS strategy. Local components to the ITS Architecture exist for Los Angeles County, Orange County, Inland Empire, Ventura County, and Imperial County.

### ***Critical Needs Assessment under MAP-21: Statewide Transportation System Needs***

There have also been several assessments of the critical state transportation infrastructure, which

include identification of the key transportation facilities.

For the SCAG region to be eligible to receive federal aid for transportation projects, it is required by federal law to prepare periodic assessment of its complex freeways, roads, bridges, rail systems, airports, public transit, and other transportation infrastructures. In 2011, the CTC commissioned a study that summarizes the state of transportation systems in the SCAG region and other Regional Transportation Planning areas from 2011 to 2020. This report includes the total cost of system preservation, system management, and system expansion projects during the 10-year study period.<sup>3</sup>

### *Aviation and Transportation Security Act (ATSA) by the 107th Congress: The Mission of the Transportation Security Administration (TSA)*

Following the September 11, 2001, attacks, the TSA was created by under the 107th Congress as Public Law 107–71. The ATSA created the TSA to oversee the security of the nation’s transportation systems. With state, local, and regional partners, the TSA oversees security for highways, railroads, buses, mass transit systems, and ports. A vast majority of its resources are dedicated to aviation security, and it is primarily tasked with screening passengers and baggage.

### *Maritime Transportation Security Act of 2002*

The Maritime Transportation Security Act of 2002 (Public Law 107–295), signed on November 25, 2002, is designed to protect the nation’s ports and waterways from a terrorist attack. This law is the U.S. equivalent of the International Ship and Port Facility Security Code (ISPS), and was fully implemented on July 1, 2004. It requires vessels and port facilities to conduct vulnerability assessments and develop security plans that may include passenger, vehicle, and baggage screening procedures; security patrols; establishing restricted areas; personnel identification procedures; access control measures; and/or installation of surveillance equipment.

### *The Disaster Mitigation Act of 2000 (DMA 2000)*

The DMA 2000 (Public Law 106–390) provides an opportunity for states, tribes, and local governments to take a new and revitalized approach to mitigation planning. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 by adding Section 322 – Mitigation Planning. Section 322 placed new emphasis on mitigation planning requiring governments to develop and submit mitigation plans as a condition of receiving any funding from the Hazard Mitigation Grant Program (HMGP) project grants. This Act reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide, and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities.

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<sup>3</sup> California Transportation Commission. Accessed 11 September 2015. *2011 Statewide Transportation System Needs Assessment*. Available at: [http://www.catc.ca.gov/reports/2011Reports/2011\\_Needs\\_Assessment\\_updated.pdf](http://www.catc.ca.gov/reports/2011Reports/2011_Needs_Assessment_updated.pdf)

## State

### *Sustainable Communities and Climate Protection Act of 2008*

The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill [SB] 375, Chapter 728, Statutes of 2008) requires MPOs to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light duty trucks in accordance with targets set by the California Air Resources Board (California Govt. Code Section 65080(b)(2)(B)). Based on EO G-12-039, the targets accepted by CARB for GHG quantification for SCAG are an 8 percent reduction in per capita GHG emissions by 2020, and a 13 percent per capita reduction by 2035, in both cases with 2005 as a base year.

### *Changes to CEQA for Transit-Oriented Development*

SB 743 codified the addition of Chapter 2.7, Section 21099 to the Public Resources Code (PRC) to provide for changes to CEQA for Transit-Oriented Development and establishes alternative metrics used for traffic levels of service (LOS) for transportation impacts inside transit priority areas. Key SB 743 language includes the following:

(1) The Office of Planning and Research shall prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the guidelines adopted pursuant to Section 21083 establishing criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. In developing the criteria, the office shall recommend potential metrics to measure transportation impacts that may include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. The office may also establish criteria for models used to analyze transportation impacts to ensure the models are accurate, reliable, and consistent with the intent of this section. (2) Upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any.

Pursuant to Public Resources Code (PRC) § 21099(b)(1), the Office of Planning and Research (OPR) is required to prepare a draft revision to the CEQA Guidelines establishing new significance criteria within transit priority areas by July 1, 2014.

Also, upon certification of those guidelines, LOS may no longer be used except if specifically identified in the guidelines (PRC § 21099(b)(2) and (c)(1)). OPR has indicated that maintaining LOS would not “promote the reduction of greenhouse gas emissions, the development of multimodal transportation

networks, and a diversity of land uses” as required by the statute.<sup>4</sup> Furthermore, in August 2014, OPR published preliminary discussion draft of updates to the CEQA Guidelines implementing SB 743 with a detailed metric setting out an alternative transportation impacts approach in compliance with SB 743 mandate.<sup>5</sup> Currently, both VMT and LOS analyses are used in assessing transportation impacts, although the more recent GHG emissions analysis is steering away from measurement based on an intersection by intersection approach to assessing a project based on its total vehicle miles traveled for the land use type that it supports. The intent for using VMT as a criterion for measurement is to encourage good incremental, walkable, transit-accessible projects. Thus, it seems possible that LOS (as the sole basis for an impact finding) could be eliminated from CEQA analysis of projects although the technical thresholds of significance for projects’ VMT levels has yet to be determined.

Furthermore, for many active transportation projects that meet the guidelines establishing performance standards for expedited review, such as urban infill projects that promotes increasing efficiencies in transportation, reducing greenhouse gas emissions, supporting transit, and improving public health, SB 743 sets provisions on expediting the project analysis to limit scope of subsequent project EIR review. The bill provide that aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site, or within a transit priority area, to be exempted from considered as significant impacts for a project.

### *California Transportation Plan (CTP)*

The CTP (SB 64; Chapter 711 Section 14536 amended 65073.1) is prepared by the California Department of Transportation every 5 years to provide a long-range policy framework to meet our future mobility needs and reduce greenhouse gas emissions. The CTP defines goals, performance-based policies, and strategies to achieve our collective vision for California’s future statewide, integrated, multimodal transportation system by envisioning a sustainable system that improves mobility and enhances our quality of life. The CTP is developed in collaboration with transportation stakeholders such as SCAG. Through ongoing engagement, the CTP is intended to provide goals and visions to support a fully integrated, multimodal, sustainable transportation system that supports the quality of life: prosperous economy, human and environmental health, and social equity. The CTP fulfills the state’s goal to meet the Federal Transportation Improvement Program.

### *Congestion Management Programs (CMPs) Established in Accordance with Proposition 111*

Proposition 111 (1990), or “The Traffic Congestion Relief and Spending Limitation Act” (Government Code 65088) enacted a statewide CMP program and provides revenues to reduce traffic congestion by building state highways, local streets, and public mass transit facilities. The CMP was established to link land use, transportation, and air quality and to prompt reasonable growth management programs that

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<sup>4</sup> Governor’s Office of Research and Planning. 6 August 2014. *Updating Transportation Impacts Analysis in the CEQA Guidelines: Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing Senate Bill 743* (Steinberg, 2013). Available at: [http://opr.ca.gov/docs/Final\\_Preliminary\\_Discussion\\_Draft\\_of\\_Updates\\_Implementing\\_SB\\_743\\_080614.pdf](http://opr.ca.gov/docs/Final_Preliminary_Discussion_Draft_of_Updates_Implementing_SB_743_080614.pdf)

<sup>5</sup> Governor’s Office of Research and Planning. 6 August 2014. *Updating Transportation Impacts Analysis in the CEQA Guidelines: Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing Senate Bill 743* (Steinberg, 2013). Available at: [http://opr.ca.gov/docs/Final\\_Preliminary\\_Discussion\\_Draft\\_of\\_Updates\\_Implementing\\_SB\\_743\\_080614.pdf](http://opr.ca.gov/docs/Final_Preliminary_Discussion_Draft_of_Updates_Implementing_SB_743_080614.pdf)



would effectively utilize existing transportation funds to alleviate traffic congestion and related impacts and improve air quality.

Under California law, CMPs are prepared and maintained by the Congestion Management Agencies (CMAs). The Los Angeles County Metropolitan Transportation Authority (Metro), Orange County Transportation Authority (OCTA), Riverside County Transportation Commission (RCTC), San Bernardino Associated Governments (SANBAG), and Ventura County Transportation Commission (VCTC) are the designated CMAs of each county and are subject to State requirements. While Imperial County is not subject to state CMP requirements, CMP-related activities there are accomplished through the development of the RTP/SCS and the Federal Transportation Improvement Program (FTIP) by the Imperial County Transportation Commission (ICTC).

Because the magnitude of congestion and degree of urbanization differ among the counties, each CMP differs in form and local procedure. Under state law, all CMPs are responsible for performing the monitoring and management functions shown below.

- **Highway Performance.** Each CMA monitors the performance of an identified highway system. This monitoring allows each county to track how their system, and its individual components, is performing against established standards, and how performance changes over time.
- **Multi-Modal Performance.** In addition to highway performance, each CMP contains an element to evaluate the performance of other transportation modes including transit.
- **Transportation Demand Management (TDM).** Each CMP contains a TDM component geared at reducing travel demand and promoting alternative transportation methods.
- **Land Use Programs and Analysis.** Each CMP incorporates a program for analyzing the effects of local land use decisions on the regional transportation system.
- **Capital Improvement Program (CIP).** Using data and performance measures developed through the activities identified above, each CMP develops a CIP. This becomes the first step in developing the County Transportation Improvement Program (TIP). Under State law, projects funded through the RTIP must first be contained in the county CIP.
- **Deficiency Planning.** The CMP contains provisions for “deficiency plans” to address unacceptable levels of congestion. Deficiency plans can be developed for specific problem areas or on a system-wide basis. Projects implemented through the deficiency plans must, by statute, have both mobility and air quality benefits. In many cases, the deficiency plans capture the benefits of transportation improvements that occur outside the county TIPs and RTIP such as non-traditional strategies and/or non-regionally significant projects.

The county CMPs together with SCAG’s RTP/SCS and FTIP fulfill the federal requirements for a “congestion management” process in transportation management areas to provide for integrated management and operation of the multimodal transportation system through the use of travel demand reduction and operational management strategies. Elements of a congestion management process include the use of congestion management objectives and performance measures, performance monitoring, identification of congestion problems and needs, and development and assessment of multimodal, demand management, and operational strategies. Federal funds may not be programmed for projects that significantly increase single-occupancy vehicle (SOV) capacity unless they are addressed through a congestion management process.

The regional transportation planning process and the county CMPs should be compatible with one another. To ensure consistency, SCAG and the CMAs have developed the Regional Consistency and Compatibility Criteria for CMPs. Information on the CMP activities and resulting data is updated on a biennial basis by each CMA and supplied to SCAG and air quality management districts.

### *Executive Order (EO) B-16-2012 on Zero Emission Vehicles*

EO B-16-2-12 was signed by Governor Brown on March 23, 2012, to encourage development of the zero emission vehicles (ZEVs) to protect the environment, stimulate the economy, and improve the quality of life in the region. The goals that are promulgated include setting aggressive targets to meet goals in 2015, 2020, and 2025, supporting the rapid commercialization of clean vehicles, and pursuing policies to promote private sector investment and made-in California technologies. Executive Order B-16-2012 also sets a target for 2050 of a reduction of greenhouse gas emissions from the transportation sector equaling 80 percent less than 1990 levels.

In February 2013, an interagency working group developed the ZEV Action Plan which identifies specific strategies and actions that state agencies will take to meet the milestones of the Executive Order. The ZEV Action Plan states:

ZEVs are crucial to achieving the state's 2050 greenhouse gas goal of 80 percent emission reductions below 1990 levels, as well as meeting federal air quality standards. Achieving 1.5 million ZEVs by 2025 is essential to advance the market and put the state on a path to meet these requirements.

Also relevant to the ZEV Action Plan are a set of strategies and actions to complete infrastructure and planning, expand customer awareness and demand, transform fleets, and grow jobs and investments in the sector. One of the goals is to transform fleets by requiring more freight and public carriers to be ZEVs, along with development of electric vehicle infrastructure planning and investment to support access near highway corridors. A subset of this requirement would mandate 25 percent of light-duty vehicle purchases to use ZEVs by 2020.

### *EO B-32-15 Integrated Action Plan to Improve California's Freight System*

On July 16, 2015, Governor Brown issued EO B-32-15, which orders the Secretary of the California State Transportation Agency, the Secretary of the California Environmental Protection Agency, and the Secretary of the Natural Resources Agency to lead other relevant state departments including the California Air Resources Board, the California Department of Transportation, the California Energy Commission, and the Governor's Office of Business and Economic Development to develop an integrated action plan by July 2016 that establishes clear targets to improve freight efficiency, transition to zero-emission technologies, and increase competitiveness of California's freight system. The action plan shall identify state policies, programs, and investments to achieve these targets, and be informed by existing state agency strategies, including the California Freight Mobility Plan, Sustainable Freight Pathways to Zero and Near-Zero Emissions, Integrated Energy Policy Report, as well as broad stakeholder input.

## Regional

### *SCAG Active Transportation Plan*

SCAG's Active Transportation Plan included in the 2012 RTP/SCS incorporates critical components in implementing sustainable community strategies, reducing greenhouse gas emissions, increasing public health, and making the region a more enjoyable place to live, work, and play consistent with the provisions of SB 743. Goals of the Active Transportation Plan are to reduce the number of bicycle and pedestrian facilities to less than 50 percent of current levels by 2035, increase the number of projects/funding in the RTIP that include bicycle and/or pedestrian components, and increase in mode share for bicycling and walking to at least 33 percent above the current estimate. SCAG's Active Transportation Plan builds into the verification process provisions used to measure a reduction of environmental footprint through identification of opportunities to provide accommodations in achieving more bicycle and pedestrian friendly region.

### *SCAG Active Transportation Strategies*

The 2016 Active Transportation Plan included in the 2016 RTP/SCS proposes strategies to continue progress made in developing regional bikeway network, assumes all local active transportation plans will be implemented, and dedicates resources to maintain and repair thousands of miles of dilapidated sidewalks. The 2016 Active Transportation Plan also considers new strategies and approaches beyond those proposed in 2012, focusing on ways to augment the plan and active transportation analysis tools in order to:

- Better align active transportation investments with land-use and transportation strategies to reduce costs and maximize mobility benefits.
- Increase the competitiveness of local agencies for federal and state funding.
- Develop strategies that serve the 8-80 crowd to reflect changing demographics and make active transportation attractive to a wider audience.
- Expand regional understanding of the role short-trips play in achieving RTP/SCS goals and performance objectives, and provide a strategic framework to support local planning and project development geared toward serving these trips.<sup>6</sup>

### *SCAG Bicycle Route 66 Concept Plan*

The Concept Plan for Bike Route 66 is a general guide to improve awareness of the route throughout the region and state. The counties within the SCAG jurisdiction in which the route traverses range from Needles to Santa Monica, including Los Angeles and San Bernardino Counties, and 32 cities within Los Angeles and San Bernardino Counties. Establishing a designated route with signage and dedicated bikeways offers commuting, utilitarian, and recreational cyclists a comfortable facility that enhances commute options. On Route 66, a mix of bikeway types is proposed. Class I bikeways covers off-street paths of trails. This class of bikeway incorporates bike paths created from historic transportation assets to provide less stressful alternatives to higher speed streets along Route 66. Class II bikeways cover on-street bike lanes, including Route 66 areas suitable for bicycles or shared use roadways. Class III

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<sup>6</sup> Southern California Association of Governments. October 2015. Transportation Committee. *Draft 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy- Proposed Active Transportation Plan Investment Framework*.

bikeways is a series of bike-friendly streets or low-speed streets that is optimized by bicycle traffic. Overall, Bike Route 66 is a part of the functional network of regional bicycle routes connecting the region and serving commuter, recreational, and touring cyclists. Local jurisdictions are encouraged to use this Concept Plan to develop, refine, and manage the Bike Route in a manner that best serves their areas.

### ***SCAG Regional Bikeway Plan***

The proposed 2016 Active Transportation Plan has developed goals for increasing bikeway miles, increase commute mode share of bicycling and walking, and improve trip connections to transit, and increases the number of sidewalks that are ADA compliant. To achieve implementation of these goals, SCAG will collaborate with other transportation agencies, local and regional government, and the California Active Transportation Program to implement a sustainability program in the six counties region. Currently, the shares of walking and biking in SCAG region combined is approximately 18 percent of the total modes available. SCAG is working with local jurisdictions to increase this percentage. By 2035, at least two-thirds of all trips shorter than three miles or half of all trips that are five miles or less could be converted to active transportation.

### ***California Transportation Commission Regional Transportation Plan Guidelines (Adopted Pursuant to California Government Code 14522)***

Under Government Code Section 14522, the CTC is authorized to prepare guidelines to assist in the preparation of RTPs. The CTC's RTP guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the U.S. Census Bureau), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance. The most recent update to the RTP guidelines was published in 2010, and includes new provisions for complying with Senate Bill 375 (see below), as well as new guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of metropolitan planning organizations (MPOs). SCAG is included in the grouping of the MPOs with population in excess of 18 million. The guidelines for regional travel demand modeling for the group, and include (among many other things) detailed guidelines and standards for validation and sensitivity testing of the model. Validation and sensitivity testing of the SCAG model was completed in August 2013.

### ***California Transportation Commission Active Transportation Program Guidelines***

Under Senate Bill (SB) 99 (Chapter 359, Statutes 2013) and AB 101 (Chapter 354, Statutes of 2013), the CTC is authorized to prepare guidelines to assist in the preparation of Active Transportation Plans (ATPs). An ATP includes bicycle, pedestrian, safe-routes to-school, and other comprehensive criteria to be included in the circulation element of its general plan in compliance with Complete Streets Act. The CTC's RTP guidelines suggest that all projects within the SCAG region must be selected through a competitive process that meets the federal aid goals. These goals are included in the environmental, design, right-of-way, and construction phases of the infrastructure and non-infrastructure projects. All projects that are selected in the ATP are required to include a discussion of the estimated bicycle and pedestrian trips, facilities report, proposed land use and bicycle transportation facilities, and policies related to parking and ADA compliance.

### *Plans and Policies Related to Complete Street Act of 2008 (AB 1358; S. 2686)*

The Complete Streets Act of 2008 (AB 1358) required cities and counties to incorporate Complete Streets in their general plan updates to ensure that transportation plans meet the needs of all users, including pedestrians, bicyclists, and transit users as well as children, older individuals, and individuals with disabilities, to travel safely and conveniently on streets and highways. In the SCAG region, all six of the counties have developed their own bicycle and pedestrian plans. Majority of these bicycle pathways are part of existing Class II path which provides on-street bike lanes, although a few are in Class I category, which mean that the path is separate from automobile traffic, and some are categorized as Class III pathways with on-street bike lanes further designated by signs.

#### ***Imperial County Bicycle Master Plan***

In 2011, Imperial County updated a Bicycle Master Plan,<sup>7</sup> which was originally created in 2003. The guiding vision of the plan is to “encourage and promote bicycling as a safe and convenient form of transportation and recreation.” The Plan will implement 253.5 miles of bikeways with intent to replace vehicular trips with bicycle trips. Providing transportation options to reduce Vehicle Miles Traveled is an important feature of this plan that is supportive of SCAG’s overall goals and visions for limiting source pollution control such as carbon dioxide, nitrogen oxides, and hydrocarbon releases and an important component of decreasing greenhouse gas emissions and improving air quality.

#### ***Los Angeles County Bicycle Master Plan***

Metro<sup>8</sup> developed a Bicycle Transportation Strategic Plan (BTSP) in 2006 to be used by “the cities, the County of Los Angeles and transit agencies in planning bicycle facilities around transit and setting priorities that contribute to regional improvements. The goal is to integrate bicycle use in transportation projects.” In addition, Metro also created a Bicycle Transportation Account Compliance Document (BTA Document) to provide an “inventory and mapping of existing and proposed facilities, and an estimate of past and future expenditures for bicycle facilities.” In 2013, SCAG and Metro developed the Bike County Data Clearinghouse to assist LA County conduct bicycle counts. The Los Angeles County Department of Public Works adopted a Countywide Bicycle Master Plan in 2012, which was developed with the over-arching goal of increasing “bicycling throughout the County of Los Angeles through the development and implementation of bicycle-friendly policies, programs, and infrastructure.” The plan recommends the development of an interconnected network of bicycle corridors, with approximately 695 miles of bikeway facilities. This plan looks at the ridership and air quality benefits from cycling and also includes a list of existing and proposed bikeways in LA County.<sup>9</sup>

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<sup>7</sup> Imperial County. Accessed 14 September 2015. *Imperial County Bicycle Master Plan Update: Final Draft*. Prepared by: Alta Planning+Design. Available at: [http://www.altaprojects.net/files/6413/2579/4308/Imperial\\_County\\_BMP\\_Final\\_Draft.pdf](http://www.altaprojects.net/files/6413/2579/4308/Imperial_County_BMP_Final_Draft.pdf)

<sup>8</sup> Los Angeles County Metropolitan Planning Authority. Accessed 14 September 2015. *Bike Planning*. Available at: <http://www.metro.net/bikes/bikes-metro/bicycle-planning/>

<sup>9</sup> Los Angeles County Department of Public Works. Accessed 14 September 2015. *Bicycle Master Plan*. Available at: <http://dpw.lacounty.gov/pdd/bike/masterplan.cfm>

### **Orange County Bicycle Master Plan**

The 2011 Orange County Bikeways Strategic Plan was developed “to encourage the enhancement of Orange County’s regional bikeways network, in order to make bicycle commuting a more viable and attractive travel option.” The plan identifies approximately 116 miles of priority bikeway projects. In 2012, the Orange County Transportation Authority provides an addendum to the existing Plan with a Commuter Bikeways Strategic Plan (CBSP) that refines the regional bikeway networks and specified which bikeways are connected to priority locations including major transit investment areas, employment centers, stations, colleges, and universities.<sup>10</sup>

### **Riverside County Non-Motorized Transportation Plans**

The Western Riverside Council of Governments (WRCOG) and the Coachella Valley Association of Governments (CVAG) have developed Non-Motorized Transportation Plans in 2010 for their respective jurisdictions covering most of Riverside County.<sup>11</sup> WRCOG’s 2010 Non-Motorized Transportation Plan proposes the development of over 440 miles of bikeways in order to provide a “regional backbone network of bicycle and pedestrian facilities to provide enhanced transportation mobility options.” The 2010 CVAG Non-Motorized Transportation plan recognizes the “value of providing opportunities for local residents and visitors to bicycle for work and recreation, as well as to use off-road trails for hiking, equestrians and jogging.”

### **San Bernardino County Non-Motorized Transportation Plans**

The Revised 2015 San Bernardino County Non-Motorized Transportation Plan’s goals include: (1) improving pedestrian access to transit; (2) removing existing barriers to pedestrian travel; (3) developing regional trails and pathways, which provide improved pedestrian access to destinations; and (4) improving the pedestrian environment on major regional arterials and at regional activity centers.<sup>12</sup> Pedestrian access, mobility, and health benefits are captured in the revised plan.

### **Ventura County Bicycle Master Plan**

The 2007 Ventura County Bicycle Master Plan “provides a broad vision, strategies and actions for the improvement of bicycling” by maximizing funding sources for implementation; improving safety and encouraging cycling; expanding the network and support facilities; and enhancing the quality of life in and overall environmental benefits. Within the County of Ventura, many jurisdictions and municipalities also has a bicycle plan to encourage non-motorized commutes.

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<sup>10</sup> Orange County Transportation Authority. Accessed 14 September 2015. *2009 OCTA Commuter Bikeways Strategic Plan*. Available at: <http://www.octa.net/pdf/2009CommuterBikewaysStrategicPlanAddendum.pdf>

<sup>11</sup> Western Riverside Council of Governments. Accessed 14 September 2015. *Western Riverside County Non-Motorized Transportation Plan*. Prepared by: Urban Crossroads. Available at: [http://www.wrcog.cog.ca.us/uploads/media\\_items/western-riverside-county-non-motorized-transportation-plan-july-2010.original.pdf](http://www.wrcog.cog.ca.us/uploads/media_items/western-riverside-county-non-motorized-transportation-plan-july-2010.original.pdf)

<sup>12</sup> San Bernardino Associated Governments. Accessed 14 September 2015. *San Bernardino County Non-Motorized Transportation Plan*. Available at: <http://www.sanbag.ca.gov/planning2/pdf/NMTP-RevisedMay2015.pdf>

### Active Transportation Plans

In addition to county plans, many local jurisdictions have developed their own active transportation plans or include active transportation components in the Circulation Element of their General Plan. Many street enhancement projects or capital improvement projects include active transportation elements as well. For example, many street improvement projects may include the striping of bikeways or new developments may include sidewalk enhancements.

### Transit and Transportation Finance

The 2016 RTP/SCS expenditure plan includes the expansion of transit facilities and service over the next 25 years. There are major transit capital projects under construction in four of the six Counties in the SCAG region: Los Angeles County, Orange County, Riverside County, and San Bernardino County (**Table 3.17.1-1, Major Transit Capital Projects**). Local county sales tax programs are funding much of this expansion.

**TABLE 3.17.1-1  
MAJOR TRANSIT CAPITAL PROJECTS**

County	Project	2016 RTP Completion Year	Project ID
Los Angeles	Crenshaw/LAX Transit Corridor	2021	LAOD198
Los Angeles	Metro Eastside Transit Corridor – Phase 2	2035	LAOG626
Los Angeles	Metro Exposition Line – Phase 2 to Santa Monica	2017	LAOF021
Los Angeles	Metro Gold Line Foothill Extension to Azusa	2017	LAOG558
Los Angeles	Metro Gold Line Foothill Extension to Claremont	2035	1120006
Los Angeles	Airport Metro Connector	2028	1TR0101
Los Angeles	South Bay Metro Green Line Extension	2036	1TR1001
Los Angeles	Regional Connector	2021	LAOG010
Los Angeles	San Fernando Valley (East) North/South Rapidways	2018	1TR0706
Los Angeles	West Santa Ana Branch Corridor	2027	1TR1011
Los Angeles	Metro Purple Line Westside Subway Extension Section 1	2023	LAOG447
Los Angeles	Metro Purple Line Westside Subway Extension to Century	2026	LAOG1052
Los Angeles	Metro Purple Line Westside Subway Extension to	2035	1TR1003
Los Angeles	Sepulveda Pass Transit Corridor	2039	1160001
Orange	Anaheim Rapid Connection	2019	2TR0701
Orange	Santa Ana/Garden Grove Fixed Guideway	2018	2TR1001
Riverside	Metrolink Perris Valley Line Extension to San Jacinto	2035	3CR0702
San Bernardino	Redlands Rail – Phase 1	2020	4TR0101
San Bernardino	Redlands Rail – Phase 2	2030	4120194

**SOURCE:**  
SCAG data, 2015.

## **Local**

### *County General Plans Circulation Element*

Each of the six counties within the SCAG region has prepared a Transportation or Circulation Element, as a required component of the General Plan. The Transportation or Circulation Element provides a summary of the existing conditions in the planning area, major issues, goals, and policies, as well as pertinent action programs related to traffic and circulation related to a variety of transportation systems (highway and local road networks, bus, rail, high speed rail, aviation network, harbors, bicycles, pedestrians, and rideshare). The Transportation or Circulation Element describes the major locations and corridors for existing and future travel based on land use patterns in order to develop a comprehensive, coordinated, and continuing transportation system for the region. Relevant policies include encouraging provision of transit service at a reasonable cost to the users and the community, encouraging the efficient use and conservation of energy and ease congestion, and, where the land use would support, providing for development of a mass transportation system that will provide a viable alternative to the automobile, and support a balance in transportation modes with public transit system that provides accessible service, particularly to the transit dependent. A transportation system will operate at regional, countywide, community, and neighborhood scales to provide connectivity between communities and mobility between jobs, residences, and recreational opportunities.

### *County General Plans Safety Element*

Each of the six counties in the SCAG region prepared a Safety Element as a required component of the General Plan. The Safety Element generally discusses measures to abate the impacts in case of catastrophe for maintenance of the transportation infrastructure. The Traffic and Transportation Division under each county is responsible for developing plans and guidelines for the maintenance of traffic control devices, emergency travel routes in the event of an emergency, placement of barricades, and control of traffic and coordination with other departments to promote integrated disaster planning, response and mitigation efforts. Included in the Safety Element discussion are strategies for continuation of adequate critical infrastructure systems and services to assure adequate circulation, communications, and transportation services for emergency response in the event of disaster related systems disruptions.

### *City of Los Angeles 2010 Bicycle Plan*

The 2010 Bicycle Plan, proposed by the Los Angeles Department of City Planning, was adopted on March 1, 2011, as a component of the City of Los Angeles Transportation Element. This plan adheres to a complete streets approach that moves Los Angeles towards a more sustainable transportation system including all forms of active transportation, not just automobiles. The three main goals established in the Plan are to increase the number and types of bicyclists who bicycle in the City, make every street a safe place to ride a bicycle, and make the City of Los Angeles a bicycle-friendly community. The 2010 Plan designates an ambitious 1,684-mile bikeway system, built off an existing 334-mile bikeway system, and introduces a comprehensive collection of programs and policies. Among the elements of the 2010 Plan are several innovations in bicycle planning for Los Angeles. Four of them deserve special mention:



a Citywide Bikeway System comprised of three bikeway networks, Bicycle Friendly Streets, the bundling of programs and policies into ten categories, and a multipronged implementation strategy.<sup>13,14</sup>

Following the passage of the bike plan, the City of Los Angeles includes a five-year implementation plan with a Bike Plan Implementation Team to ensure that the Plan's many projects are being implemented in an efficient and equitable manner to create a more inclusive community.

### 3.17.2 EXISTING CONDITIONS

The Southern California transportation system is a complex intermodal network designed to carry both people and goods. It consists of roads and highways, transit, passenger and freight rail, airports, seaports, and intermodal terminals. The regional roadway system consists of an interconnected network of interstates, freeways, highway, toll roads, arterial streets, and local streets. This roadway network allows for the operation and movement of private vehicles, commercial vehicles, private and public buses, and heavy-duty trucks. Active transportation modes, such as biking and walking use non-motorized transportation facilities, including bikeways and walkways that often share spaces with roadway facilities. SCAG is currently working on engaging local jurisdictions to expand bicycle and pedestrian network to encourage use of active transportation modes, establish safe routes to school, and educate bicyclists and pedestrians on activities around sensitive communities. The regional public transit system includes local shuttles, municipal and area-wide bus operations, light rail transit operations, regional commuter rail services, and interregional passenger rail service. The freight railroad network includes an extensive system of private railroads and several publicly owned freight rail lines serving industrial cargo and goods. The airport system consists of commercial, general, and military aviation facilities serving passenger, freight, business, recreational, and defense needs. The region's seaports support substantial international and interregional freight movement and tourist travel. Intermodal terminals consisting of freight processing facilities, which transfer, store, and distribute goods. The interconnected and complex transportation system advances the region's mobility and supports the region's economic growth, as well as the demand for safe personal travel.

#### Circulation System

##### *Commute Patterns and Travel Characteristics*

The existing transportation network serving the SCAG region supports the movement of people and goods. On a typical weekday in the six-county region, the transportation network supports a total of nearly 448 million vehicle miles of travel (VMT) and nearly 13 million vehicle hours of travel (VHT). Of this total, over half occur in Los Angeles County and less in Orange, San Bernardino, Riverside, Ventura, and Imperial Counties, respectively (**Table 3.17.2-1, Summary of Existing Daily Vehicle Miles and Percentage Vehicle Hours of Travel**).

Much of the existing travel in the SCAG region takes place during periods of congestion, particularly during the morning (6:00 a.m. to 9:00 a.m.) and evening peak periods (3:00 p.m. to 7:00 p.m.).

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<sup>13</sup> Southern California Association of Governments. Accessed 11 September 2015. *California Bicycle Route 66 Concept Plan*. Available at: <http://www.scag.ca.gov/Documents/Bike%20Route%2066%20concept%20plan.pdf>

<sup>14</sup> Los Angeles Department of City Planning. Accessed 11 September 2015. *2010 Bicycle Plan*. Available at: <http://planning.lacity.org/cwd/gnlpln/transelt/NewBikePlan/Txt/LA%20CITY%20BICYCLE%20PLAN.pdf>

Congestion can be quantified as the amount of travel that takes place in delay (vehicle hours of delay or VHD) and, alternately, as the percentage of all travel time that occurs in delay (defined as the travel time spent on the highway due to congestion, which is the difference between VHT at free-flow speeds and VHT at congested speeds). Existing travel delays and percent of regional VHT in delay ranges from a low of no delay in Imperial County on freeways and arterials to 67 percent in Los Angeles County, with an average of 17 percent in the SCAG region (**Table 3.17.2-2, Summary of Existing Delay and Work Trip Length; Figure 3.17.2-1, Base Year 2012 AM Peak Period Congestion Delay on the Regional Freeway System; Figure 3.17.2-2, Plan 2040 AM Peak Period Congestion Delay on the Regional Freeway System; Figure 3.17.2-3, Base Year 2012 PM Peak Period Congestion Delay on the Regional Freeway System; Figure 3.17.2-4, Plan 2040 PM Peak Period Congestion Delay on the Regional Freeway System**). While there is a relatively small variation in average travel distance from home to work, from 10 miles in Imperial County, to 18 miles in Riverside and San Bernardino Counties, the average travel time during the peak hours ranges from a low of 13 minutes in the a.m. peak hour in Imperial County to a high of 116 minutes in San Bernardino County (**Table 3.17.2-2**). Home-to-work trip duration and distance are both greater for the inland counties of Riverside and San Bernardino, reflecting regional housing and employment distribution patterns.

The characteristics of home-to-work trip and all daily trips vary widely among counties (**Table 3.17.2-3, Existing Travel Mode Split [Percentage of County Total]**). On average, vehicular trips account for nearly 90 percent of home to work trips, including 75.8 percent in single occupancy trips, 3.6 percent in two-person carpools, 1.8 percent in three-person carpools, and 8.2 percent in auto passenger trips. When accounting for all daily trips, on average vehicular trips account for approximately 86 percent of all daily trips, including 43.3 percent in single occupancy trips, 8.0 percent in two-person carpools, 7.7 percent in three-person carpools, and 27.6 percent in auto passenger trips. Public transit in all forms (including school buses) carries approximately 2.4 percent of all trips in the SCAG region. Of these, the greatest number of travelers is carried by buses, with lesser patronage on Metro Rail, paratransit, commuter rail, and other forms of public transit services. Trips made via public transit account for 6.1 percent of all home-to-work trips in the region and 2.4 percent of all daily trips (**Table 3.17.2-3**). Non-motorized trips account for 4.0 percent of all home-to-work trips in the region and 11 percent of all daily trips (**Table 3.17.2-3**).

FIGURE 3.17.2-1

# Base Year 2012 AM Peak Period Congestion Delay on the Regional Freeway System



Speed in Miles Per Hour

- Less than 35
- 36 to 50
- Greater than 50

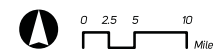
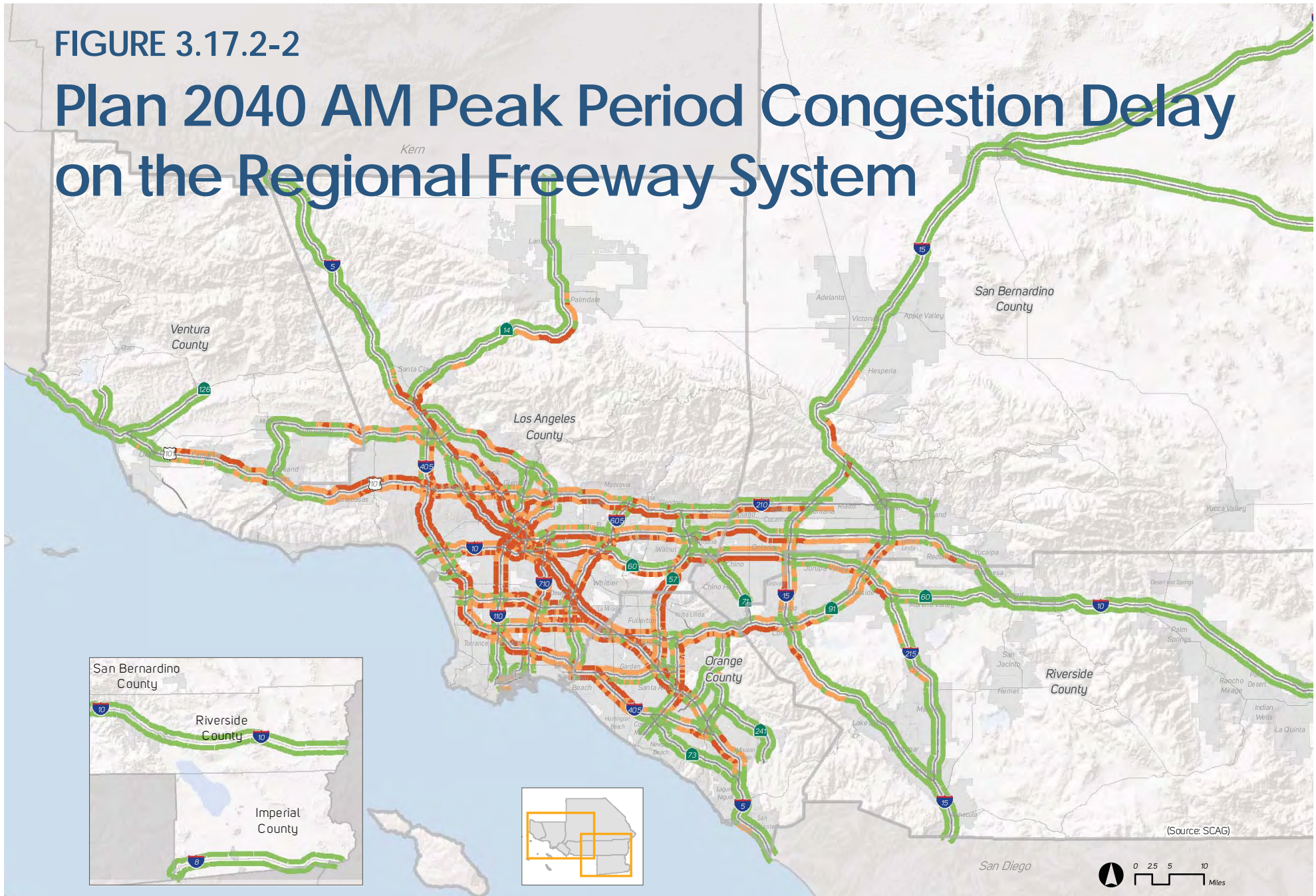
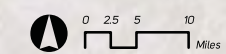


FIGURE 3.17.2-2

# Plan 2040 AM Peak Period Congestion Delay on the Regional Freeway System



(Source: SCAG)



Speed in Miles per Hour  
▬ Less than 35    ▬ 36 to 50    ▬ Greater than 50

FIGURE 3.17.2-3

# Base Year 2012 PM Peak Congestion Delay on the Regional Freeway System

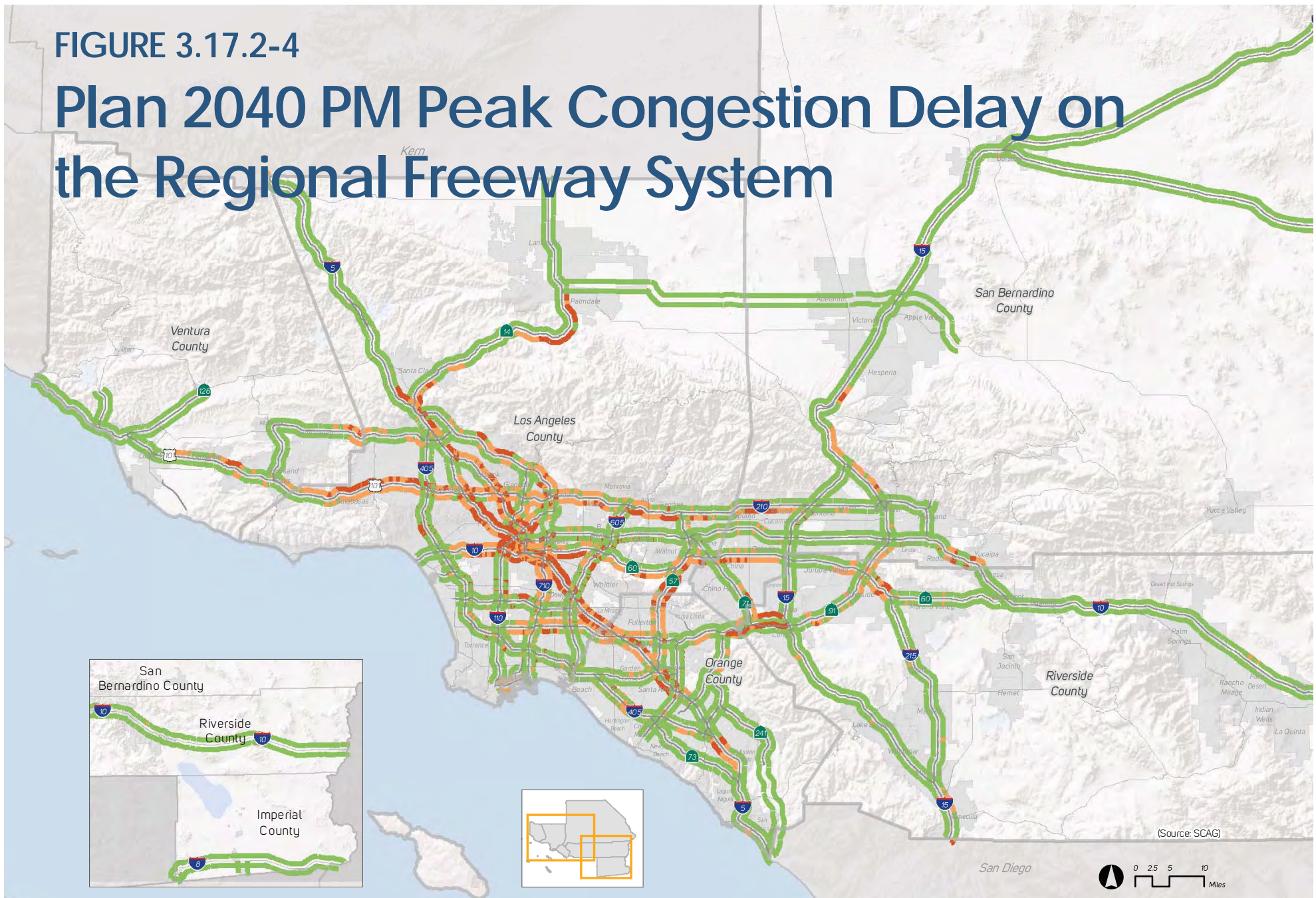


Speed in Miles Per Hour

- Less than 35
- 36 to 50
- Greater than 50

FIGURE 3.17.2-4

# Plan 2040 PM Peak Congestion Delay on the Regional Freeway System



**TABLE 3.17.2-1  
SUMMARY OF EXISTING DAILY VEHICLE MILES AND PERCENTAGE VEHICLE HOURS OF TRAVEL**

County	Vehicle Miles of Travel (VMT)						Vehicle Hours of Travel (VHT)					
	A.M. Peak Period		P.M. Peak Period		Daily		A.M. Peak Period		P.M. Peak Period		Daily	
	Miles	% of Region	Miles	% of Region	Miles	% of Region	Hours	% of Region	Hours	% of Region	Hours	% of Region
Imperial	847,760	1%	1,643,000	1%	5,255,956	1%	15,777	1%	24,691	1%	96,178	1%
Los Angeles	43,216,977	51%	74,635,000	51%	225,544,016	50%	1,462,755	58%	2,639,343	59%	7,159,240	56%
Orange	14,756,181	18%	24,793,000	18%	76,505,802	17%	463,633	18%	841,818	19%	2,265,450	18%
Riverside	10,424,649	12%	18,817,000	12%	58,224,510	13%	240,365	9%	402,747	9%	1,287,880	10%
San Bernardino	11,118,720	13%	18,944,000	13%	62,311,825	14%	263,319	10%	429,208	10%	1,391,850	11%
Ventura	3,702,642	4%	6,929,000	5%	19,650,017	4%	92,874	4%	167,232	4%	487,042	4%
<b>Total</b>	<b>84,066,929</b>	<b>100%</b>	<b>145,761,000</b>	<b>100%</b>	<b>447,492,126</b>	<b>100%</b>	<b>2,538,723</b>	<b>100%</b>	<b>4,505,039</b>	<b>100%</b>	<b>12,687,640</b>	<b>100%</b>

SOURCE: SCAG modeling, 2015.

**TABLE 3.17.2-2  
SUMMARY OF EXISTING DELAY AND WORK TRIP LENGTH**

County	Vehicle Hours of Delay			% of Travel in Delay			Average Home-to-Work Trip Distance (miles)	Average Home-to-Work Trip Duration (minutes)	
	A.M. Peak Period	P.M. Peak Period	Daily	A.M. Peak Period	P.M. Peak Period	Daily	Vehicle Trips (A.M. Only)	Vehicle Trips (A.M. Only)	Transit Trips (A.M. only)
Imperial	146	299	1,199	0%	0%	0%	10	13	66
Los Angeles	472,560	1,039,218	2,000,016	67%	67%	67%	14	26	69
Orange	140,319	320,755	578,293	20%	21%	19%	13	21	78
Riverside	33,522	73,436	149,383	5%	5%	5%	18	29	95
San Bernardino	45,114	85,902	186,160	6%	6%	6%	18	29	116
Ventura	14,118	39,096	68,338	2%	3%	2%	16	27	109
<b>Total</b>	<b>705,779</b>	<b>1,558,706</b>	<b>2,983,389</b>	<b>17%</b>	<b>17%</b>	<b>17%</b>	<b>15</b>	<b>26</b>	<b>73</b>

SOURCE: SCAG modeling, 2015.

**TABLE 3.17.2-3  
EXISTING TRAVEL MODE SPLIT (PERCENTAGE OF COUNTY TOTAL)**

County	Person Trip Type	Drive Alone	2-Person Carpool	3-Person Carpool	Auto Passenger Trip	Transit	Non-Motorized	Total
Imperial	Home-Work/Univ	80.4%	2.8%	1.2%	5.9%	0.7%	8.9%	100%
	All Daily Trips	44.3%	7.8%	6.1%	23.0%	0.4%	18.5%	100%
Los Angeles	Home-Work/Univ	73.8%	3.5%	1.9%	8.2%	7.5%	5.1%	100%
	All Daily Trips	39.9%	7.5%	8.2%	28.5%	3.2%	12.7%	100%
Orange	Home-Work/Univ	79.0%	3.9%	1.8%	8.4%	2.2%	4.6%	100%
	All Daily Trips	44.2%	7.9%	8.0%	28.2%	1.0%	10.7%	100%
Riverside	Home-Work/Univ	81.2%	3.5%	2.2%	9.1%	0.7%	3.3%	100%
	All Daily Trips	45.6%	8.2%	7.5%	27.1%	0.4%	11.1%	100%
San Bernardino	Home-Work/Univ	80.1%	3.6%	2.4%	9.6%	1.0%	3.4%	100%
	All Daily Trips	45.5%	8.2%	7.6%	27.3%	0.4%	11.0%	100%
Ventura	Home-Work/Univ	84.5%	2.7%	1.3%	5.8%	1.1%	4.7%	100%
	All Daily Trips	48.6%	7.7%	6.9%	25.0%	0.5%	11.3%	100%
Total	Home-Work/Univ	76.8%	3.5%	1.9%	8.4%	4.8%	4.6%	100%
	All Daily Trips	42.3%	7.7%	8.0%	27.9%	2.1%	12.0%	100%

SOURCE:  
SCAG modeling, 2015.

### *Regional Freeway, Highway, and Arterial System*

The regional freeway, highway, and arterial system is the primary means of person and freight movement for the region (**Table 3.17.2-4, Existing Regional Freeway Route Miles and Lane Miles by County**). This system provides for direct auto, bus and truck access to employment, services and goods. The network of freeways, interstates, and highways serves as the backbone of the system offering very high capacity limited-access travel and serving as the primary heavy-duty truck route system. As discussed in Chapter 3 of the 2016 RTP/SCS, the rate of deterioration is expected to accelerate significantly as maintenance cost continues to be deferred on our roadway systems such that to bring back these assets to a state of good repair would improve security and lead to efficiency although costly. The SCAG region will focus on preserving the existing transportation network, including preservation of roads, highways, bridges, railways, bicycle and pedestrian facilities, and transit infrastructures that lead to maintain mobility and provide cost-efficiency without increasing capacity.



**TABLE 3.17.2-4  
EXISTING REGIONAL FREEWAY ROUTE MILES AND LANE MILES BY COUNTY**

County	Freeway Route Miles	Freeway Lane Miles
Imperial	95	379
Los Angeles	538	4,231
Orange	201	1,525
Riverside	298	1,697
San Bernardino	453	2,471
Ventura	91	516
<b>Total</b>	<b>1,676</b>	<b>10,820</b>

SOURCE: SCAG modeling, 2015.

### *Regional High-Occupancy Vehicle (HOV) System and Park and Ride System*

The regional HOV system consists of exclusive lanes on freeways and arterials, as well as busways and exclusive rights-of-way dedicated to the use of high-occupancy vehicles (HOVs). It includes lanes on freeways, ramps and freeway-to-freeway connectors (**Table 3.17.2-5, Existing Regional High-Occupancy Vehicle Lane Miles by County**). The regional HOV system is designed to maximize the person-carrying capacity of the freeway system through the encouragement of shared-ride travel modes. HOV lanes operate at a minimum occupancy threshold of either two or three persons. Many include on-line and off-line park and ride facilities, and several HOV lanes are full “transitways” including on-line and off-line stations for buses to board passengers.

**TABLE 3.17.2-5  
EXISTING REGIONAL HIGH-OCCUPANCY VEHICLE LANE MILES BY COUNTY**

County	HOV Total Lane Miles
Imperial	0
Los Angeles	507
Orange	244
Riverside	82
San Bernardino	105
Ventura	0
<b>Total</b>	<b>938</b>

SOURCE:  
SCAG modeling, 2015.

Park and ride facilities are generally located at the urban fringe along heavily traveled freeway and transit corridors and support shared-ride trips, either by transit or by carpool or vanpool. Most rail transit stations have park and ride lots nearby. Park and ride lots in the SCAG region include: 106 in Los Angeles County, 25 in Orange County, 26 in Riverside County, 18 in San Bernardino County, and 20 in Ventura County.<sup>15</sup>

<sup>15</sup> IE511.org. Accessed 11 September 2015. *Find a Park & Ride Lot*. Available at: <http://www.ie511.org/rideshare/park-and-ride>

## Arterial Street System

The local street system provides access for local businesses and residents. Arterials account for over 80 percent of the total road network and carry a high percentage of total traffic (**Table 3.17.2-6, Existing Regional Arterial Route Miles and Lane Miles by County**). In many cases arterials serve as alternate parallel routes to congested freeway corridors. Peak period congestion on the arterial street system occurs generally in the vicinity of activity centers, at bottleneck intersections and near many freeway interchanges.

**TABLE 3.17.2-6  
EXISTING REGIONAL ARTERIAL ROUTE MILES AND LANE MILES BY COUNTY**

County	Arterials	Lane Miles
Imperial	Principal	614
	Minor	557
Los Angeles	Principal	8,349
	Minor	8,946
Orange	Principal	3,493
	Minor	2,729
Riverside	Principal	1,208
	Minor	2,871
San Bernardino	Principal	1,799
	Minor	3,865
Ventura	Principal	804
	Minor	992
<b>SCAG Total</b>	<b>Principal</b>	<b>16,267</b>
	<b>Minor</b>	<b>19,960</b>

**SOURCE:**

SCAG modeling, 2015.

## Goods Movement

Wholesale and retail trade, transportation, and manufacturing support over approximately 3.3 million jobs in the SCAG region according to statistics provided by the State's Employment Development Department.<sup>16</sup> Goods movement includes trucking, rail freight, air cargo, marine cargo, and both domestic and international freight, the latter entering the country via the seaports, airports, and the international border with Mexico. Additionally, many cargo movements are intermodal, for example, sea to truck, sea to rail, air to truck, or truck to rail. The goods movement system includes not only highways, railroads, sea lanes, and airways, but also intermodal terminals, truck terminals, railyards, warehousing, freight consolidation/de-consolidation terminals, freight forwarding, package express, customs inspection stations, truck stops, and truck queuing areas.

<sup>16</sup> State of California Employment Development Department. 21 August 2015. News Release No. 15-32. Available at: [http://www.edd.ca.gov/About\\_EDD/pdf/urate201508.pdf](http://www.edd.ca.gov/About_EDD/pdf/urate201508.pdf)

## Heavy-Duty Trucks

One of the key components of the region's goods movement system is the fleet of heavy-duty trucks, defined as cargo-carrying vehicles with a gross weight rating in excess of 8,500 pounds. Trucks provide a vital link in the distribution of all types of goods between the region's ports (sea and air), railroads, warehouses, factories, farms, construction sites and stores. The size and weight of heavy-duty trucks gives them unique operating characteristics; that is, they accelerate and decelerate more slowly than lighter vehicles and require more road space to maneuver. Dedicated truck lanes currently exist at two major freeway interchanges: the junction of Interstate 5 (I-5) with the I-210 and State Route 14 (SR-14) and at the junction of the I-405 with the I-110. In addition, truck climbing lanes are located on northbound I-5 in northern Los Angeles County.

The trucking industry, including common carrier, private carrier, contract carrier, drayage and owner-operator services, handles both line-haul and pick-up and delivery. The industry uses the public highway system for over-the-road and local service. However, it is also served by a considerable infrastructure of its own. This infrastructure includes truck terminals, warehousing, consolidation and trans-loading facilities, freight forwarders, truck stops and maintenance facilities. These various facilities are especially prevalent in the case in the South Bay and Gateway Cities areas, including Wilmington and Carson and extending generally between Los Angeles International Airport (LAX) and the San Pedro Bay Ports, along the I-710 Corridor north to Vernon, Commerce, and Downtown Los Angeles, east through the San Gabriel Valley to Industry, Pomona, and Ontario and then to the Inland Empire in Fontana and Rialto as well as in Glendale, Burbank and Bakersfield. Specialized facilities for trucking that provide air cargo ground transport are located around regional airport facilities, notably LAX and LA/Ontario International Airport.

## Railroads

The SCAG region is served by two main line commercial freight railroads—the Burlington Northern/Santa Fe Railway Co. (BNSF) and the Union Pacific Railroad (UP). These railroads link Southern California with other United States regions, Mexico, and Canada either directly or via their connections with other railroads. They also provide freight rail service within California. In 2012, railroads moved approximately 154.8 million tons of cargo throughout California.<sup>17</sup>

The SCAG region is also served by three short line or switching railroads:

- The Pacific Harbor Line (formerly the Harbor Belt Railroad), which handles all rail coordination involving the Ports of Los Angeles and Long Beach, including dispatching and local switching in the harbor area
- Los Angeles Junction Railway Company, owned by BNSF, which provides switching service in the Vernon area for both the BNSF and UP
- The Ventura County Railroad, owned by Rail America, Inc., which serves the Port of Hueneme and connects with the UP in Oxnard

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<sup>17</sup> Association of American Railroads. 2012. U.S. Freight Railroad Industry Snapshot: California. Available at: <https://www.aar.org/data-center/railroads-states#state/CA>

These railroads perform specific local functions and serve as feeder lines to the trunk line railroads for moving goods to and from Southern California.

The two main line railroads also maintain and serve major facilities in the SCAG region. Intermodal facilities in Commerce (BNSF-Hobart), East Los Angeles (UP), San Bernardino (BNSF), and Carson near the San Pedro Bay Ports (UP-ICTF), the Los Angeles Transportation Center (UP-LATC), and the UP-City of Industry yards serve on-dock rail capacity at the Ports of Los Angeles (UP/BNSF) and Long Beach (UP/BNSF).

All of the major rail freight corridors in the region have some degree of grade separation, but most still have a substantial number of at-grade crossings on major streets with high volumes of vehicular traffic. These crossings cause both safety and reliability problems for the railroads and for those in motor vehicles at the affected crossings. Trespassing on railroad rights of way by pedestrians is another safety issue affecting both freight and commuter railroads.

As an example, the Alameda Corridor, a 20-mile, four-lane freight rail expressway, began operations in April 2002. In 2014, approximately 17,061 intermodal trains transited the Alameda Corridor, an approximate increase of 2.9 percent since 2013.<sup>18</sup>

### Public Transit

In Southern California public transit service is comprised of local and express buses, transitways, Rapid Bus, bus rapid transit (BRT), urban rail, including subway and light rail principally centered in the core of Los Angeles County, commuter rail that spans five counties and shuttles/circulators that feed all transportation modes and activity centers (**Table 3.17.2-7, SCAG Region Annual Fixed Route Transit Ridership**). Transit service is provided by approximately 67 separate public agencies. Twelve of these agencies provide 91 percent of the existing public bus transit service. Local service is supplemented by municipal lines and shuttle services. Private bus companies provide additional regional service.

**TABLE 3.17.2-7  
SCAG REGION ANNUAL FIXED ROUTE TRANSIT RIDERSHIP**

<b>Total Trips</b>	<b>2001</b>	<b>2005</b>	<b>2008</b>	<b>2012</b>
Metro Rail	61,802,000	74,243,000	86,707,000	101,516,533
Commuter Rail	7,398,000	10,693,000	12,681,000	13,155,790
Bus	548,728,000	609,795,000	622,286,000	587,830,836
<b>Total</b>	<b>617,928,000</b>	<b>694,731,000</b>	<b>721,674,000</b>	<b>702,503,159</b>
<b>Passenger Miles</b>	<b>2001</b>	<b>2005</b>	<b>2008</b>	<b>2012</b>
Metro Rail	339,799,942	442,916,123	524,813,417	597,916,365
Commuter Rail	274,625,402	359,938,222	436,565,493	433,650,956
Bus	2,206,840,397	2,375,502,229	2,461,654,000	2,487,359,821
<b>Total</b>	<b>2,821,265,741</b>	<b>3,178,356,574</b>	<b>3,423,032,910</b>	<b>3,518,927,142</b>

**SOURCE:**

SCAG modeling, 2015.

<sup>18</sup> Alameda Corridor Transportation Authority. Accessed 11 September 2015. *Number of Trains Running on the Alameda Corridor*. Available at: <http://www.acta.org/pdf/CorridorTrainCounts.pdf>

Many people depend on reliable transit service to participate in the economic, cultural, and social benefits of Southern California, and transit use is growing in the SCAG region (**Table 3.17.2-8, Statistics for Major Transit Operators for 2010**). As of 2012, transit agencies in the SCAG region reported over 716 million annual boarding. This represents growth of 14 percent between 2001 and 2012, but only 3 percent growth in per capita trips due to population growth. In the same period, Metrolink saw annual ridership grow by 78 percent, and Metro Rail (Los Angeles County) by 64 percent.

**TABLE 3.17.2-8  
STATISTICS FOR MAJOR TRANSIT OPERATORS FOR 2010**

County	Largest Transit Operator	Average Weekday Boardings	Annual Boardings	Annual Vehicle Revenue Miles(VRM)	Passenger Fares as a % of Operation Expenses*
<b>FIXED ROUTE BUS SERVICE</b>					
Imperial	IVT	2,000	593,000	666,000	15.2%
Los Angeles	Metro	1,579,000	503,071,000	139,274,000	24.4%
Orange	OCTA	182,000	58,104,000	21,666,000	25.1%
Riverside	RTA	36,000	11,368,000	10,163,000	15.2%
San Bernardino	Omnitrans	49,000	15,685,000	10,035,000	22.9%
Ventura	Gold Coast Transit	15,000	4,880,000	3,853,000	19.6%
<b>METRO RAIL – HEAVY RAIL</b>					
Los Angeles	Metro	150,000	47,906,000	5,885,000	38.7%
<b>METRO RAIL – LIGHT RAIL</b>					
Los Angeles	Metro	146,000	46,409,000	9,646,000	18.3%
<b>REGIONAL COMMUTER RAIL</b>					
Various	SCRRA (Metrolink)	38,000	12,006,000	10,479,000	42.4%

SOURCE: National Transit Database, 2011.

### **Metro Rail System**

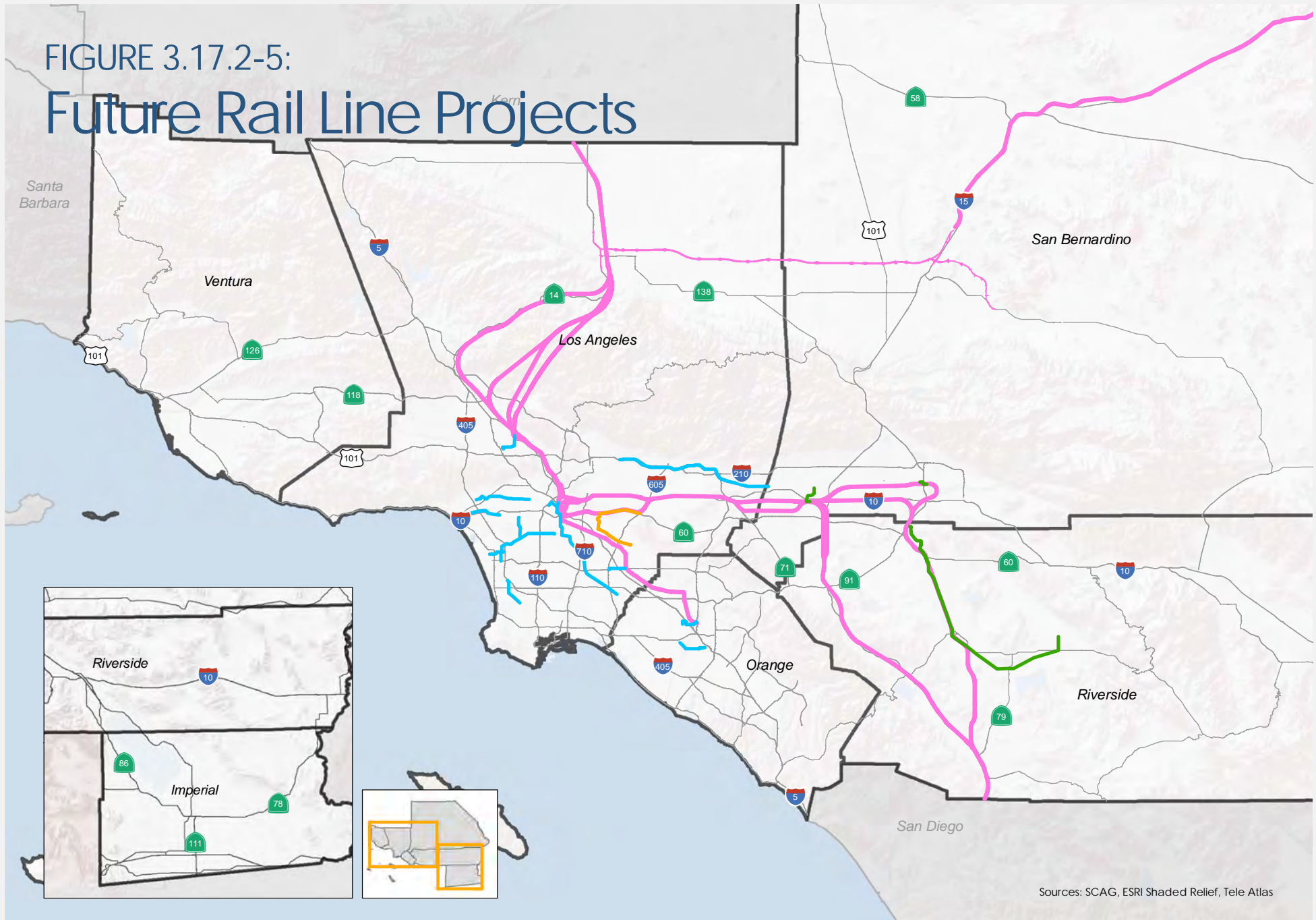
Existing urban rail lines (Metro Rail) are located in Los Angeles County and are operated by Metro. They include the Metro Blue Line from Long Beach to Downtown Los Angeles, the Metro Green Line from Redondo Beach to Norwalk, the Metro Expo Line from Downtown Los Angeles to Culver City, and the Metro Red Line subway from Union Station to North Hollywood. The Metro Purple Line subway follows the Red Line from Union Station to Wilshire and Vermont but branches off to Western Avenue, and the Metro Gold Line that runs from East Los Angeles (Atlantic station) to Pasadena via Union Station (shown in **Figure 3.17.2-5, Future Rail Line Projects**). The Metro Rail system is operated seven days a week. A system total of 87.7 route miles serves a total of 80 stations. Ridership on the Metro Rail system is approximately 323,870 boardings every day.<sup>19</sup>

### **Commuter Rail and Intercity Passenger Rail**

Commuter rail service is operated by the Southern California Regional Rail Authority (SCRRA). In October of 1992, the SCRRA began initial operation of the Metrolink commuter rail system on three lines. Service on the initial system was greatly expanded after the 1994 Northridge earthquake.

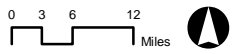
<sup>19</sup> Los Angeles Metropolitan Transportation Authority. October 2014. *Facts at a Glance*. Available at: <http://www.metro.net/news/facts-glance/>

# FIGURE 3.17.2-5: Future Rail Line Projects



Sources: SCAG, ESRI Shaded Relief, Tele Atlas

- High Speed Rail
- Urban Rail
- Metrolink
- Urban Rail Alternative



Currently SCRRRA operates seven routes including five from Downtown Los Angeles to Ventura, Lancaster, San Bernardino, Riverside, and Oceanside, from San Bernardino to Oceanside, and from Riverside via Fullerton or City of Industry to Downtown Los Angeles. As of September 2014, the system operated 169 trains on weekdays, 44 on Saturdays, and 38 on Sundays to 55 stations on 512 route miles. Average weekday ridership is approximately 43,667 passengers.<sup>20</sup>

Amtrak provides significant regional and interregional service on the Los Angeles–San Diego–San Luis Obispo (LOSSAN) Corridor (also known as Amtrak’s Pacific Surfliner corridor) operating 12 daily round-trip services, with service to Los Angeles Union Station (**Figure 3.17.2-6, Amtrak Railways**). Additionally, Amtrak operates four interstate routes within the region (Coast Starlight, Sunset Limited, Southwest Chief and Texas Eagle) that on average have one daily trip.<sup>21</sup>

### **Shuttles and Demand-Responsive Services**

One component of the region’s public transit system consists of publicly operated or funded demand-response taxis and dial-a-ride services; some open to the general public, others limited to elderly and disabled use. It also includes locally operated or funded shuttle buses (e.g., Los Angeles DASH, Pasadena ARTS, Glendale Beeline, Cerritos on Wheels, El Monte Transit, Riverside Orange Blossom, etc.). Access Paratransit, the largest provider of transportation services for the disabled in the region, operates in the vicinity of fixed-route bus and rail lines in Los Angeles County and extends into portions of the surrounding counties of San Bernardino, Orange and Ventura. These systems serve as local shuttles, internal circulators, connectors to other public transit, or as shoppers’ shuttles. Service on these systems is usually limited to a prescribed geographic area.<sup>22</sup>

### **Active Transportation and Non-Motorized Transport**

The California Active Transportation Program (ATP) was created to ensure all active modes of transportation, such as biking and walking, was accounted to meet the development of active transportation plans in disadvantaged communities as well as the implementation of non-infrastructure projects (i.e. education, enforcement activities). The use of bicycle as a means of transportation has several appealing aspects for an increasing share of travelers.

### **Bicycle and Pedestrian Facilities**

Biking and walking primarily constitutes non-motorized transportation. Non-motorized transportation plays a bigger role in the densely-populated, mixed-land-use areas of the region. Bicycling has positive air quality, economic, and health impacts, and can reduce automobile-related congestion and energy use. Similar to bicycle use, walking can also reduce auto emissions of both criteria pollutants and greenhouse gases from auto trips. Health in communities improve when there are options to increase physical outcome of activities, lower body weight, lower rates of traffic injuries, lower air pollution, and

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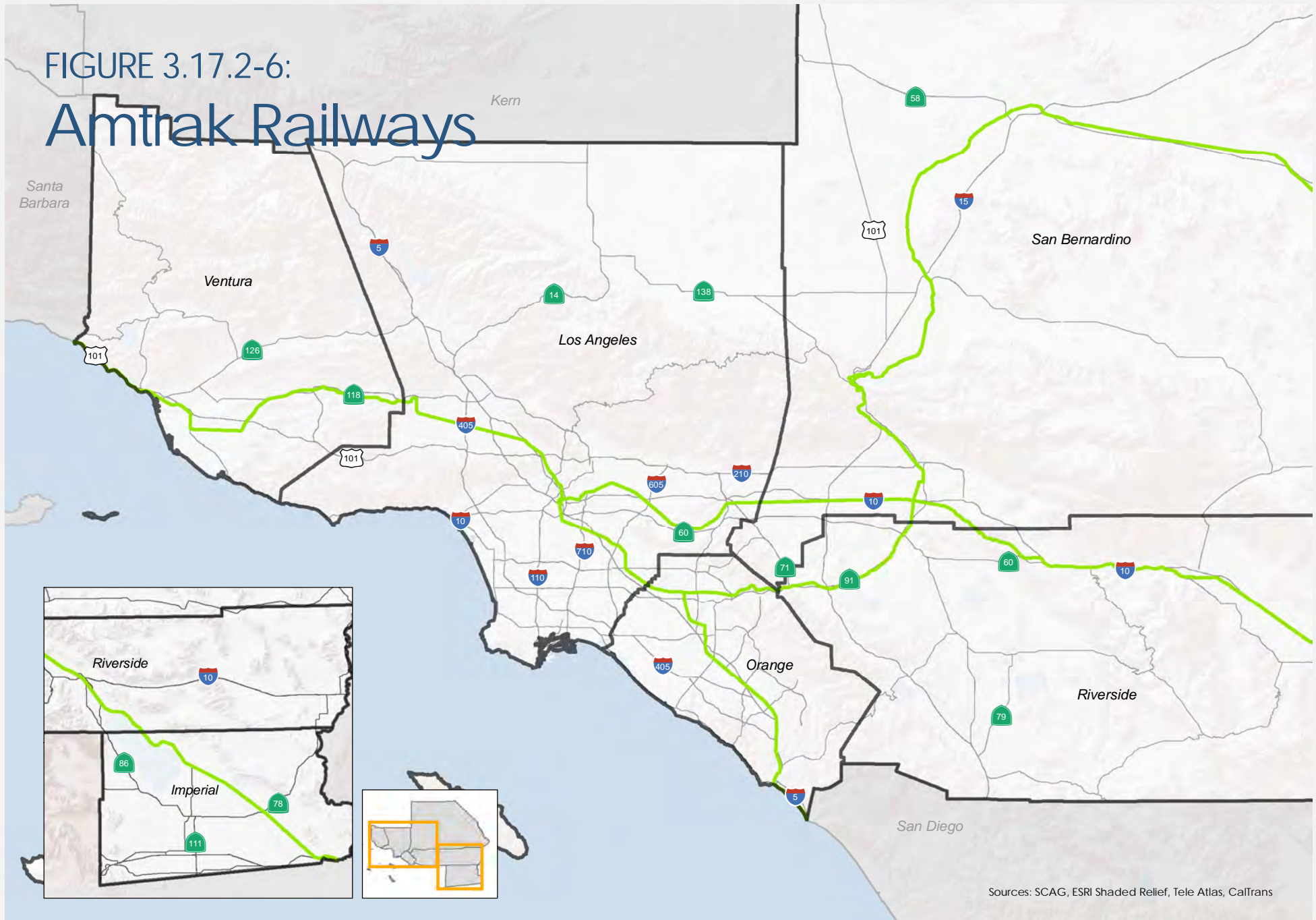
<sup>20</sup> Southern California Regional Rail Authority. 2014. *Fact Sheet*. Available at: [http://www.metroinktrains.com/pdfs/Facts&Numbers/Fact\\_Sheets/Fact\\_Sheet\\_2014\\_Q4.pdf](http://www.metroinktrains.com/pdfs/Facts&Numbers/Fact_Sheets/Fact_Sheet_2014_Q4.pdf)

<sup>21</sup> Amtrak. Accessed 11 September 2015. *Routes*. Available at: <http://www.amtrak.com/servlet/ContentServer?c=Page&pagename=am%2FLayout&p=1237405732511&cid=1237608331430>

<sup>22</sup> Access Services. Accessed 11 September 2015. *About Us*. Available at: [http://www.asila.org/about\\_us/overview.html](http://www.asila.org/about_us/overview.html)

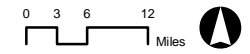
FIGURE 3.17.2-6:

# Amtrak Railways



Sources: SCAG, ESRI Shaded Relief, Tele Atlas, Caltrans

— Amtrak Railway





improve mobility for nondrivers. Currently, the average walking and bicycling distances in commutes from the SCAG region is between zero to three miles, although approximately 34 percent of the population walks or bicycles one-quarter to one-half mile, and more than 15 percent walk between one-half and one mile per day. Both modes of non-motorized transport would not require consumption of scarce fuel, and can be used for work and nonwork purposes. In 2012, biking and walking accounted for approximately 13.4 percent of total trips in SCAG region; 18.7 percent of these trips are originated from school, and 10.4 percent are shopping trips.<sup>23</sup>

The region's bikeways encourage non-motorized travel, serve as recreational facility, and provide inexpensive, environmentally friendly transportation opportunities. Some of the strategies to encourage active transportation currently being considered are focused on improving local mobility for those who walk less than three miles a day, improving multimodal strategies for shared mobility, and improving compact community development through targeted High Quality Transit Areas (HQTAs). The bikeways are also designated to provision for allowable use and to encourage active use. Class I bikeways are separate shared-use paths also used by pedestrians, Class II bikeways are striped lanes in streets, and Class III bikeways are signed routes. There are approximately 3,919 bikeway miles in the region, with the majority in Los Angeles County, followed by Riverside and Orange County. Approximately 746 miles are Class I bikeways, 2,150 Class II Bikeways, and 1,021 Class III Bikeways. Bike rack, locker, and station programs are ongoing in a number of cities and transit operators. In addition, transit operators are integrating bicycle transportation with transit via bus bike racks, bike-on-train programs and bicycle lockers at transit centers. **Figure 3.17.2-7, Existing Regional Bikeways, and 3.17.2-8, Existing and Proposed Regional Bikeways (2040)**, show the existing and proposed bikeways in the SCAG region.

Pedestrian access at and near public transit, in most major commercial areas, and many residential areas is facilitated by sidewalks, a number of pedestrian malls, and in some cases local jogging and pedestrian trails or paths.

### *Regional Aviation System*

The SCAG region supports the nation's largest regional airport system in terms of number of airports and aircraft operations, operating in a very complex airspace environment. The SCAG region contains 56 public use airports, including six active commercial service airports, 44 general aviation, two active limited-commercial service (commuter) airports, two former military airfields (now public use airports) and two joint-use facilities. The existing active commercial service airports handle the majority of passenger air traffic (see **Figure 3.9.2-1, Airports in the SCAG Region**, in **Section 3.9, Hazards and Hazardous Materials**).

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<sup>23</sup> Southern California Association of Governments. October 2015. *SCAG Active Transportation Plan*.

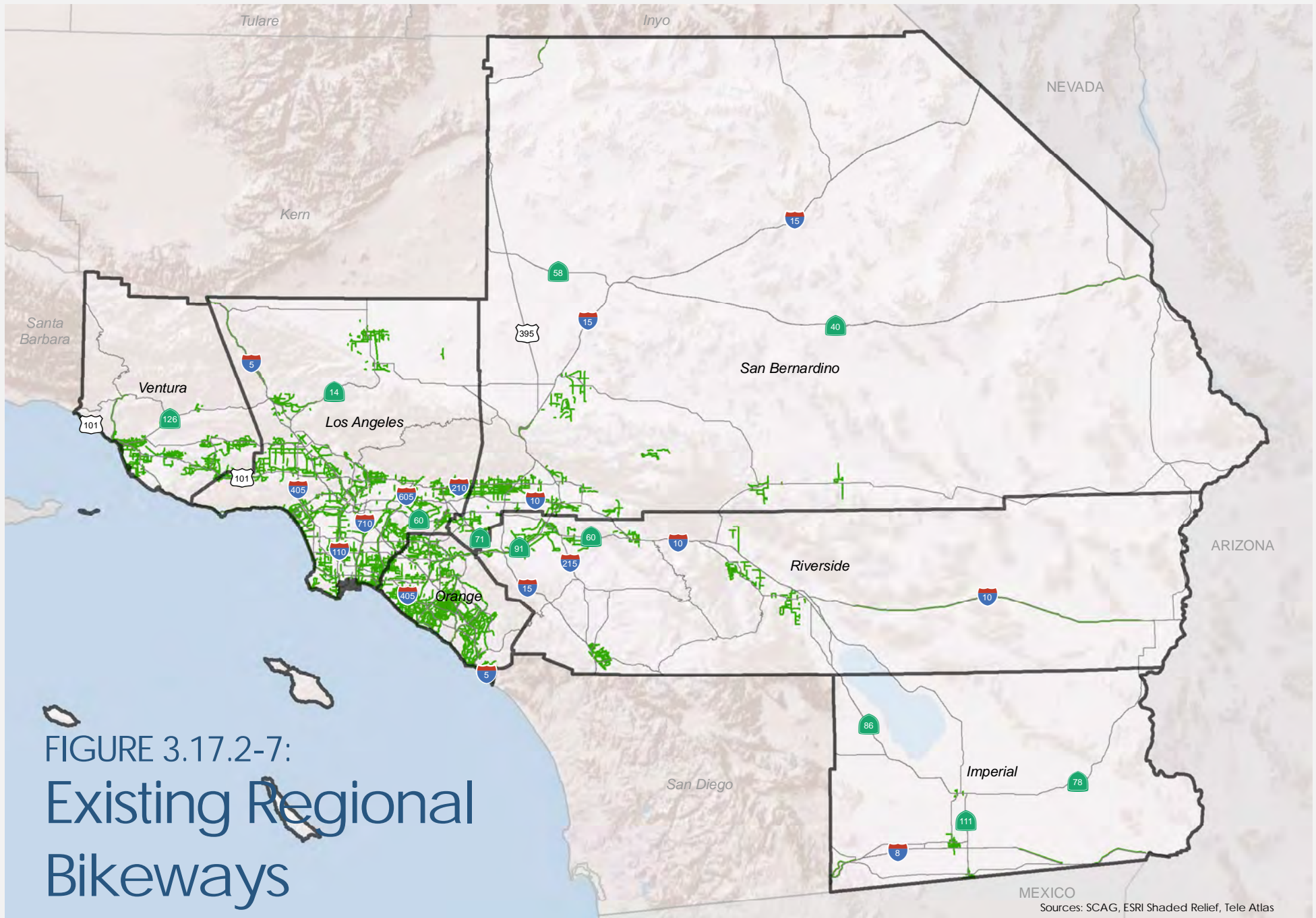
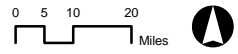


FIGURE 3.17.2-7:  
Existing Regional  
Bikeways

Existing bikeway

Sources: SCAG, ESRI Shaded Relief, Tele Atlas



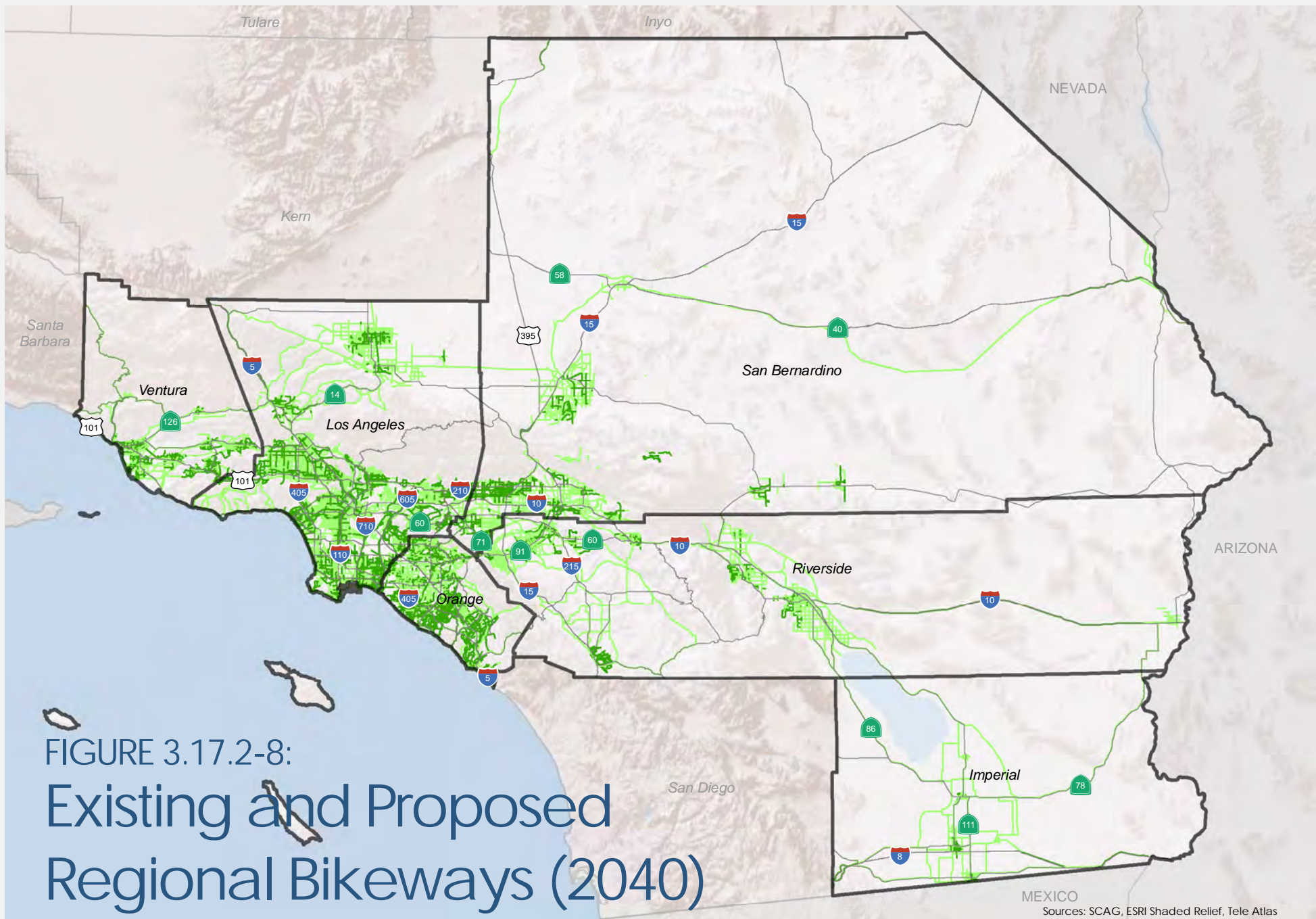


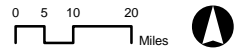


FIGURE 3.17.2-8:  
 Existing and Proposed  
 Regional Bikeways (2040)

Sources: SCAG, ESRI Shaded Relief, Tele Atlas

-  Existing bikeway
-  Proposed bikeway



- Los Angeles International Airport
- Ontario International Airport
- John Wayne/Orange County Airport
- Burbank/Bob Hope Airport
- Riverside County/March Air Force Base (limited cargo services)
- Imperial County Airport (limited commercial service)
- Long Beach Airport
- Palm Springs International Airport
- Victorville Airport (limited commercial service)

In all, approximately 86.4 million annual passengers (MAP) were served in the region in 2012, more than double the number served in 1980. The level of regional aviation demand forecasts related to MAP has been decreasing, with approximately 170 MAP by 2030 in the 2004 RTP, 165.3 MAP by 2035 in the 2008 RTP, and 145.9 MAP by 2035 in the 2012 RTP/SCS.<sup>24</sup> In 2013, the regional total aviation demand was 88 MAP.<sup>25</sup> In 2014, Los Angeles International Airport led the largest share of air passengers with approximately 76.1%, following by John Wayne Airport at 10.1%, Ontario International Airport at 4.5% and Burbank/Bob Hope Airport at 4.3%.<sup>26</sup> While none of the individual airports is the largest in the U.S., the region's airports collectively are the busiest of any region in the country. LAX accounts for the largest proportion of passenger volume, cargo, and annual operations (**Table 3.17.2-9, Existing [2014] Activity at Major Commercial Airports in the SCAG Region**). A brief discussion of the location, major access routes, and facilities at each of these airports follows. In addition, the six other regional airports at which major improvements and/or conversion to civilian uses are contemplated are described below.

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<sup>24</sup> Southern California Association of Governments. 2012. *Aviation and Ground Access*. Available at: <http://rtpscsc.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx>

<sup>25</sup> Southern California Association of Governments. 23 July 2015. *Staff Report: 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecast Update*. Transportation Committee.

<sup>26</sup> Southern California Association of Governments. 6 August 2015 (Continued from July 23, 2015). *Staff Report: 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) – Regional Aviation Forecast Update*. Transportation Committee.

**TABLE 3.17.2-9  
EXISTING (2014) ACTIVITY AT MAJOR AIRPORTS IN THE SCAG REGION**

	BUR	IPE	LAX	Long Beach	ONT	Palm Springs	Santa Ana	VCV	RIV	Region Total
Passenger Volume (1,000)	3,909	5	69,404	2,717	4,090	1,889	9,214	—	—	<b>91,228</b>
Percentage of Regional Total	4%	0%	76%	3%	4%	2%	10%	0%	0%	<b>100%</b>
Cargo Volume (tons)	54,967	1,131	2,071,611	28,840	469,434	373	20,965	—	880	<b>2,648,201</b>
Percentage of Regional Total	2%	0%	78%	1%	18%	0%	1%	0%	0%	<b>100%</b>
Annual Operations	118,554	14,586	636,706	316,009	83,766	57,061	282,614	19,765	—	<b>1,529,061</b>
Average Daily Operations	324.81	39.96				156.33	774.28	54.15	—	<b>1,350</b>
Percentage of Regional Total	8%	1%	42%	21%	5%	4%	18%	1%	0%	<b>100%</b>

**NOTE:**

BUR: Burbank; IPE: Imperial; LAX: Los Angeles World Airport; VCV: Victorville; RIV: Riverside or March Air Force Base.

**SOURCE:**

Passenger and cargo data from U.S. DOT T-100 database, operations from Federal Aviation Administration Operations Network (OPSNET), 2015, except for IPL. IPL operations from FAA Terminal Area Forecast for fiscal year 2013. Operations include commercial and general aviation flights, including touch-and-go, but exclude military flights.

### ***Los Angeles International Airport***

LAX is located in the southwestern portion of the City of Los Angeles, bordered by Arbor Vitae / Westchester Parkway to the north, I-405 to the east, I-105 / Imperial Highway to the south, and the Pacific Ocean to the west (**Figure 3.9.2-1**). It is surrounded by the communities of Westchester and Playa del Rey to the north; the City of El Segundo to the south; and the City of Inglewood and unincorporated areas of Los Angeles County (Lennox and Del Aire) to the east. Major access routes include I-405 and I-105 and a complex network of surface streets extending throughout the surrounding area, including Sepulveda Boulevard, Lincoln Boulevard, La Cienega Boulevard, Aviation Boulevard, Century Boulevard, Arbor Vitae / Westchester Parkway, and Imperial Highway.

### ***Ontario International Airport***

LA/Ontario International Airport (ONT) is located in the southwest section of San Bernardino County within the city of Ontario, approximately two miles east of Ontario's Central Business District between Holt and Mission Boulevards, and between Haven and Grove Avenues (**Figure 3.9.2-1**). Major access routes include I-10 and SR-60 and the major surface streets in the surrounding area, including Holt Boulevard, Archibald, and Vineyard Avenues.

### ***John Wayne Airport***

John Wayne Airport (SNA) is located in the western portion of Orange County, directly south of I-405, one mile east of SR-55, and one mile north of SR-73 (**Figure 3.9.2-1**). Major access routes include these freeways and the major surface streets in the surrounding area, including MacArthur Boulevard and Michelson Drive. The majority of the land surrounding is within the cities of Newport Beach, Costa Mesa, and Irvine. In addition, the unincorporated community of Santa Ana Heights is located southeast of the airport.

### ***Burbank/Bob Hope Airport***

Bob Hope Airport (BUR) is located in the western portion of Los Angeles County, on the west side of the City of Burbank, one mile south of I-5, three miles east of SR-170, and three miles north of SR-134 (**Figure 3.9.2-1**). Major access routes include these freeways and the major surface streets in the surrounding area, including Hollywood Way and San Fernando Road.

### ***Imperial County Airport***

Imperial County Airport (IPA), also known as Boley Field Airport, is located just west of SR-86 and north of I-8, in the City of Imperial (**Figure 3.9.2-1**). It is a small airport serving mostly general aviation and commuter flights, and meets all general aviation, air transportation, and air cargo needs for Imperial County.

### ***Long Beach Airport***

Long Beach Airport (LGB) is located in the southern portion of Los Angeles County, in the center of the City of Long Beach, directly north of I-405, and three miles west of I-605, and three miles east of I-710

(**Figure 3.9.2-1**). Major access routes include these freeways and the major surface streets in the surrounding area, including Lakewood Boulevard (SR-19).

### ***Palm Springs International Airport***

Palm Springs International Airport (PSP) is located in the central portion of Riverside County, in the City of Palm Springs, two miles southwest of I-10 and one mile northeast of Gene Autry Trail (SR-111) (**Figure 3.9.2-1**). Major access routes include these highways and the major surface streets in the surrounding area, including Ramon Road.

### ***Palmdale Regional Airport***

Palmdale Regional Airport (PMD) is located in northern Los Angeles County, within the north central portion of the City of Palmdale in United States Air Force Plant 42 (AFP 42), one mile north of SR-138, and three miles east of SR-14 (**Figure 3.9.2-1**). Major access routes include these highways and the major surface streets in the surrounding area, including 20th Street and Avenue P.

### ***San Bernardino International Airport***

San Bernardino Airport (SBD), formerly Norton Air Force Base, is within the City of San Bernardino and is surrounded by unincorporated areas of San Bernardino County and the cities of Redlands, Loma Linda, Highland, and Colton (**Figure 3.9.2-1**). The airport is approximately three miles east of I-215, two miles north of I-10, and one mile west and two miles south of SR-30. Major access routes include these highways and the major surface streets in the surrounding area, including Tippecanoe Avenue, Mill Street and 3rd Street.

### ***Victorville Airport/Southern California Logistics Airport***

Southern California Logistics Airport (VCV), formerly George Air Force Base, is within the City of Victorville, surrounded by unincorporated areas of San Bernardino County and the cities of Victorville and Adelanto (**Figure 3.9.2-1**). It is approximately two miles east of Route 395, and three miles northwest of I-15. Major access routes include these highways and the major surface streets in the surrounding area, including Adelanto Road and Air Base Road.

### ***March Air Reserve Base/March Inland Port***

March Air Reserve Base / March Inland Port (March), formerly March Air Force Base, is located in the western portion of Riverside County east of and adjacent to I-215 and two miles south of SR-60 (**Figure 3.9.2-1**). The joint-use facility is bordered by the cities of Moreno Valley to the north and east, Riverside to the northwest, and Perris to the south. Major access routes include these freeways and the major surface streets in the surrounding area, including Van Buren Boulevard and Perris Boulevard.

Airport security planning is the joint responsibility of the federal Transportation Security Administration (TSA), the airlines, and the individual airports. Airports in the SCAG region have upgraded their security systems since 9/11 using a variety of strategies in conjunction with local, State, and federal law enforcement. However, a number of aviation vulnerabilities continue to persist. These included effective screening of passengers and baggage for threat objects and explosives, adequate controls for

limiting access to secure areas at airports, and adequate security for air traffic control computer systems and facilities.

### Transportation Hazards

Based on average accident rates provided by Caltrans, transportation-related fatalities occur at an overall rate of 0.83 fatalities per 100 million vehicle miles traveled, taking into account the varying accident rates on different facility types (freeway, arterials) and travel modes (bus transit, rail transit). The two counties with the highest vehicle miles travelled, Los Angeles and Orange, have the lowest rates of fatalities per 100 million VMT, while the county with the lowest annual VMT, Imperial County, has the highest rate of fatalities per 100 million VMT (**Table 3.17.2-10, Total Vehicle Fatalities**). In 2012, the most recent date for which data is available, approximately 1,300 people died and over 6,000 were severely injured on roadways throughout the SCAG region. Data from the California Office of Transportation Safety (OTS) are provided for transportation injuries and fatalities in the SCAG region (**Tables 3.17.2-11, Total Victims Killed and Injured; 3.17.2-12, Total Bicycle Victims Killed and Injured; 3.17.2-13, Total Pedestrian Victims Killed and Injured**).

**TABLE 3.17.2-10  
TOTAL VEHICLE FATALITIES**

County	Fatalities (2012)	Fatalities per 100 million Vehicle Miles Traveled	Annual Vehicle Miles Traveled per 100 million
Imperial	37	1.76	21
Los Angeles	589	0.76	778
Orange	154	0.59	261
Riverside	219	1.04	210
San Bernardino	236	1.11	212
Ventura	62	0.86	72
<b>Total</b>	<b>1,297</b>	<b>0.83</b>	<b>1,554</b>

**SOURCE:**

California Office of Transportation Safety (OTS), 2015.

**TABLE 3.17.2-11  
TOTAL VICTIMS KILLED AND INJURED**

County	Fatalities and Injuries (2012)	Miles Traveled	OTS Ranking
Imperial	829	5,001,622	53/58
Los Angeles	29,719	41,372,941	2/58
Orange	20,225	72,771,016	5/58
Riverside	11,160	55,336,728	33/58
San Bernardino	12,088	59,240,163	18/58
Ventura	5,244	18,703,214	10/58
<b>Total</b>	<b>79,265</b>	<b>252,425,684</b>	<b>1</b>

**SOURCE:**

California Office of Transportation Safety (OTS), 2015.



**TABLE 3.17.2-12  
TOTAL BICYCLE VICTIMS KILLED AND INJURED\***

County	Fatalities (2012)	Miles Traveled	OTS Ranking
Imperial	25	5,001,622	47/58
Los Angeles	4,958	41,372,941	21/58
Orange	1,461	72,771,016	13/58
Riverside	364	55,336,728	55/58
San Bernardino	402	59,240,163	49/58
Ventura	280	18,703,214	23/58
<b>Total</b>	<b>7,490</b>	<b>252,425,684</b>	<b>1</b>

**NOTE:**

\* Ages 15 to 65.

**SOURCE:**

California Office of Transportation Safety (OTS), 2015.

**TABLE 3.17.2-13  
TOTAL PEDESTRIAN VICTIMS KILLED AND INJURED\***

County	Fatalities (2012)	Miles Traveled	OTS Ranking
Imperial	36	5,001,622	44/58
Los Angeles	5,297	41,372,941	4/58
Orange	911	72,771,016	36/58
Riverside	451	55,336,728	54/58
San Bernardino	499	59,240,163	47/58
Ventura	256	18,703,214	23/58
<b>Total</b>	<b>7,450</b>	<b>252,425,684</b>	<b>1</b>

**NOTE:**

\* Ages 15 to 65.

**SOURCE:**

SCAG modeling, 2015.

## Safety, Security and Emergency Access

Southern California is home to significant natural disasters, including earthquakes, wildfires, flooding, and mudslides (discussed in **Section 3.7, Geology and Soils**). Although natural disasters, such as earthquakes and hurricanes, have produced significant regional casualties and property damage, none had the serious disruption to national travel and the national economy as the September 11, 2001, terrorist attacks. The 9/11 attacks created a new awareness of the vulnerabilities of transportation fleets and facilities. As concern about the threat of terrorism and consequences of natural disasters has grown, government (at all levels) has taken new measures to secure the welfare of its citizens. Transportation and transit agencies throughout the United States are taking increasing steps to protect their facilities against the threats of crime, terrorist activity, and natural disasters.

A large-scale evacuation would be difficult in the SCAG region. The region already has severe traffic congestion and mobility issues. The region encompasses 38,000 square miles with a diverse geography,

ranging from dense urban areas, to mountain ranges, to vast deserts. The interdependency of the jurisdictions and organizations makes regional cooperation and coordination essential to security and emergency preparedness. Typically, no single agency is responsible for transportation security. At the local level, especially within transit agencies, safety may be handled within one office. However, it is far less likely that the security of a surface transportation mode is managed by one entity and that this entity is even controlled by the transportation organization. For example, highways and transit networks traverse multiple police jurisdictions, local fire departments generally fill the incident command role after terrorist events, regional command and control centers respond to both natural and intentional disasters, and federal agencies intervene as needed and based on specific guidelines such as the crossing of state boundaries.<sup>27</sup>

The complexity of the SCAG region, with a range of potential terrorism targets, presents significant challenges in coordinating and implementing effective homeland security programs. The unexpected and complex nature of these natural and human-caused incidents require extensive coordination, collaboration and flexibility among all of the agencies and organizations involved in planning, mitigation, response and recovery.

*Safety* is defined as the protection of persons and property from unintentional damage or destruction caused by accidental or natural events. Safety of people and goods is one of the most important considerations in developing, maintaining, and operating our diverse transportation systems. Safety and concerns related to project implementation addresses how well the transportation system minimizes collisions in fatalities, property damages, through changes in modal or facility shifts. SCAG region has an extensive transportation system, with more than 70,000 miles of freeway and arterial lanes and 3,900 miles of bikeways. As of 2014, the region had 14.9 million licensed drivers and 11.8 million registered vehicles. As of 2012 (most recent year data was available), more than 1,300 people died and 121,000 were injured in traffic collisions in the region. Therefore, safeguarding the Southern California transportation safety to minimize accidents on-road for vehicles and pedestrians is an important focus of the region.

*Security* is defined as the protection of persons or property from intentional damage or destruction caused by vandalism, criminal activity or terrorist attacks. The Transportation Research Board has classified emergency events that affect transportation agencies into several categories (**Table 3.17.2-14, Transportation Security Vulnerabilities**).<sup>28</sup>

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<sup>27</sup> Transportation Research Board of the National Academies. Accessed 11 September 2015. National Cooperative Highway Research Project. Report 525, Volume 3, Transportation Planning Process. Available at: [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_525v3.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_525v3.pdf)

<sup>28</sup> Transportation Research Board of the National Academies. Accessed 11 September 2015. National Cooperative Highway Research Project. Report 525, Volume 9, Guidelines for Transportation emergency Training Exercises. Available at: [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_525v9.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_525v9.pdf)

**TABLE 3.17.2-14  
TRANSPORTATION SECURITY VULNERABILITIES**

<b>Roadways and Freeway</b>	
Freeway Lanes Miles (excluding carpool)	10,820 miles
Carpool Lane Miles	938 miles
Road Lane Miles	58,588 miles
<b>Public Transit</b>	
Buses	5,549 vehicles
Metro Rail	87 miles and 80 stations
Metrolink	536 miles and 59 stations
<b>Aviation/Ports</b>	
Commercial/General Aviation Airports	56
Regional Airport Activity Levels	170,000 daily departing seats on 64 airlines
Long Beach/Los Angeles rank among world container ports	9th
Share of United States Maritime Trade	40 percent

**SOURCE:**

SCAG modeling, 2015.

### *Rail and Mass Transit*

The dispersed nature and the daily volume of passengers using public transportation services, which include intercity passenger rail, commuter rail, subway systems, and bus transportation, make it an attractive target for terrorists and criminals. Today, regional transit in the SCAG region is comprised of:

- Approximately 640 bus routes
- Approximately 67 local bus (demand response and paratransit) operators
- Thirteen commuter express bus services
- Two subway lines and three light rail lines situated within Los Angeles County

The numbers of customers using public transportation each and every day creates ongoing challenges for enhancing security within transit environments. A number of plans have been implemented to provide for basic protection. In the early 1990s, the California Public Utilities Commission required that transit agencies operating rail systems prepare a comprehensive System Safety Program Plan (SSPP) that also included a security component. Since 2004, all transit agencies are required to include a security and emergency management plan, which details how the agency would coordinate with first responder (law enforcement and fire) agencies, their respective County Office of Emergency Services and the Statewide Standardized Emergency Management System (SSEMS).

### *International Border Crossings*

Within the SCAG region, there are three international ports of entry along the Mexico–Imperial County border: two at Calexico (Calexico and Calexico-East); and, one at Andrade (near Yuma, Arizona). Traffic from these ports enters California on the I-8 corridor. U.S. Customs and the Border Protection Agency within the Department of Homeland Security (DHS) are charged with the management and control of the official ports of entry. Security planning includes local emergency services, as well as the CHP.

Caltrans District 11 has developed the California–Baja California Border Master Plan, which establishes a process to institutionalize dialogue among local, state and federal stakeholders in the United States and Mexico. A key objective was to develop criteria that can be used in future studies to coordinate and prioritize projects related to existing and new Ports of Entry (POEs), as well as roads leading to the California Mexico POEs. Security was a major consideration in the development of the Border Master Plan.

### *Maritime Ports*

Southern California is served by three major deep-water seaports. These ports—Hueneme, Long Beach, and Los Angeles—handle Asia–North America trade and are served by the two major railroads and numerous trucking companies in Southern California (**Figure 3.17.2-9, Ports in the SCAG Region**). The Port of Hueneme, with its recent expansion, ranks as one of the premier automobile and agricultural product-handling facilities in California. The Ports of Long Beach and Los Angeles are full-service ports with facilities for containers, autos and various bulk cargoes. With an extensive landside transportation network, the three ports moved more than 310 million metric tons of cargo in 2010.<sup>29,30</sup>

In particular, the San Pedro Bay Ports (Long Beach and Los Angeles) dominate the container trade in the Americas by shipping and receiving more than 11.8 million 20-foot Equivalent Units (TEUs) of containers in 2009.<sup>31</sup> Together these two ports rank third in the world, behind Rotterdam and Hong Kong, as the busiest maritime ports.

### *Security at Seaports*

The DHS has designated the seaports of Long Beach, Los Angeles, and Port Hueneme as at risk for potential terrorist actions.<sup>32</sup> Security at the ports is the joint responsibility of the U.S. Coast Guard, the U.S. Customs and Border Protection Agency, federal and State Homeland Security offices, Port police agencies, Harbor Patrols and emergency service agencies. The U.S. Coast Guard leads the local Area Maritime Security Commission, which coordinates activities and resources for all port stakeholders.

The Port of Los Angeles has a dedicated police force, the Los Angeles Port Police, to patrol the area within the jurisdiction of the Port of Los Angeles. The Port Police enforce federal, State, and local public safety statutes, as well as environmental and maritime safety regulations, in order to maintain the free flow of commerce and produce a safe, secure environment that promotes uninterrupted Port operations. In addition, the Port Police partner with other law enforcement agencies, such as the Los Angeles Police Department, CHP, and Customs and Border Protection in the Cargo Theft Interdiction Program (CTIP), which investigates cargo theft, and the High Intensity Drug Trafficking Area, which targets drug trafficking at the Ports of Los Angeles and Long Beach. Furthermore, per the Maritime Transportation Security Act of 2002, the Port of Los Angeles works with the Coast Guard to develop security plans for facilities at the port.

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<sup>29</sup> Port of Los Angeles. 2010. *2010 Financial Statement and 2010 Tonnage Statistics*.

<sup>30</sup> Port of Long Beach. December 2010. *Monthly Tonnage Summary Report*.

<sup>31</sup> Southern California Association of Governments. 2011. *Port Activity and Competitiveness Tracker (PACT)*.

<sup>32</sup> U.S. Department of Homeland Security. 25 September 2006. *Fiscal Year 2006 Infrastructure Protection Program*.

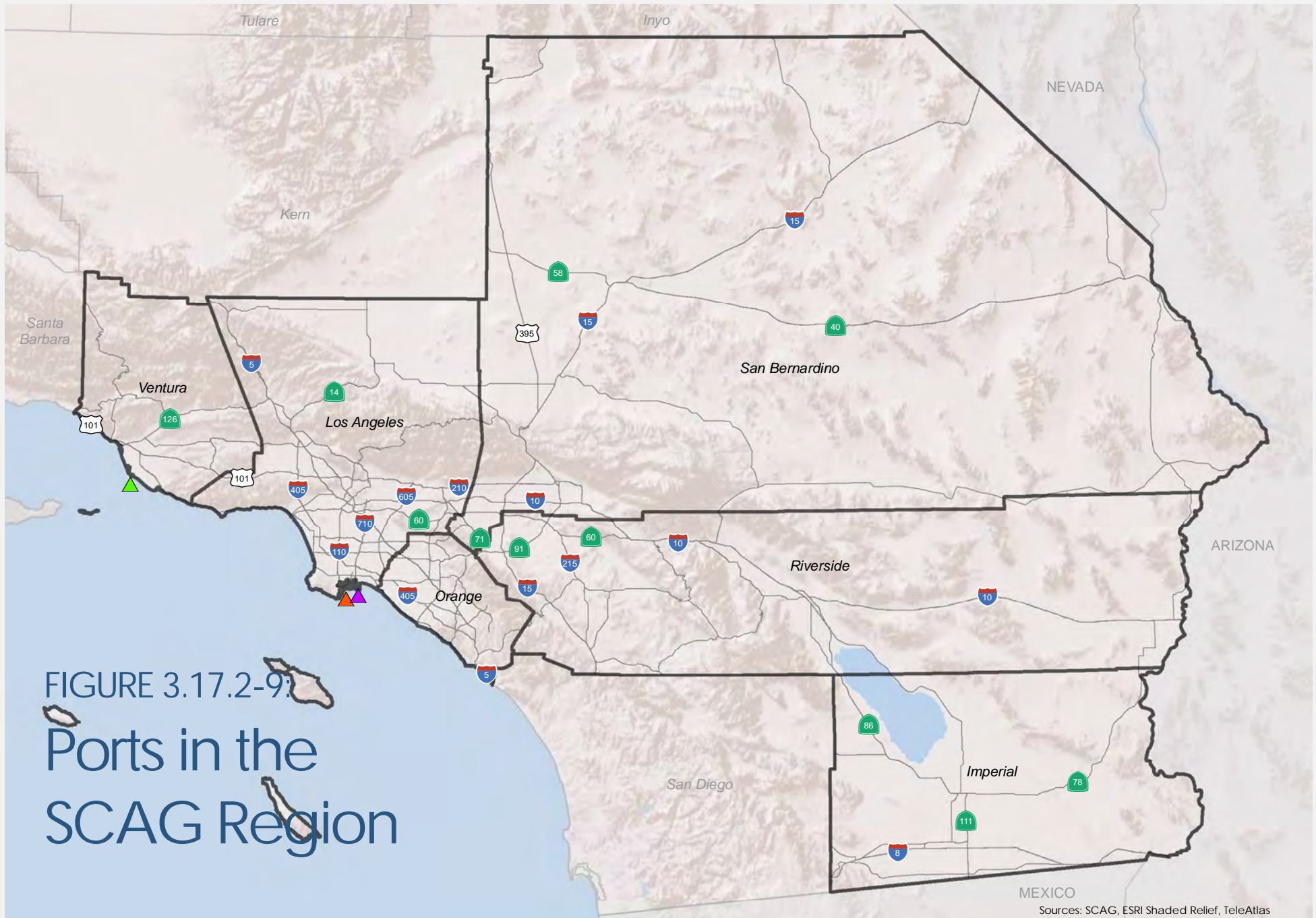
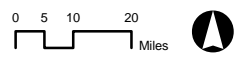


FIGURE 3.17.2-9:  
Ports in the  
SCAG Region

Sources: SCAG, ESRI Shaded Relief, TeleAtlas

- Port
- ▲ Hueneme
  - ▲ Long Beach
  - ▲ Los Angeles



Similar to the Port of Los Angeles, security at the Port of Long Beach entails physical security enhancements, police patrols, coordination with federal, State, and local agencies to develop security plans for the port area and investigate suspicious incidents, and obtaining federal funding to pay for these enhancements. As with the Port of Los Angeles, the Port of Long Beach works with the Coast Guard to develop security plans for facilities at the port. In contrast to the Port of Los Angeles, however, the Port of Long Beach does not have its own dedicated police force. Instead, the Long Beach Police Department is responsible for patrolling the port area. In doing so, the Port reimburses the Long Beach Police and Fire Departments for their port-related activities and expenses. The Port also funds its own Harbor Patrol to supplement law enforcement work conducted by other agencies such as the Coast Guard.

In addition to the above, several programs are in place to effectively monitor and screen seaport cargo. They include:

*Investigations:* The federal Container Security Initiative (CSI) directs Customs agents, working with host governments, to inspect and examine all cargo containers deemed high-risk before they are loaded on U.S.-bound vessels. The CSI contains four core elements: identifying high-risk containers, pre-screening containers before they reach U.S. ports of entry, using technology to prescreen high-risk containers and developing and using smart and secure containers.

*Inspections:* The 24-hour rule requires manifest information on cargo containers to be delivered to U.S. Customs 24 hours before the container is loaded onto a vessel in a foreign port. Customs has the right to stop any container from being loaded, for any reason, while the container is still overseas.

*Partnerships:* Most of the largest U.S. importers and their trading partners participate in the Customs-Trade Partnership Against Terrorism (C-TPAT), a public-private partnership designed to improve security standards throughout the cargo supply chain.

*Technology:* U.S. Customs uses X-ray, gamma ray and radiation-detection devices to screen incoming cargo at U.S. ports.

### **3.17.3 THRESHOLDS OF SIGNIFICANCE**

Consistent with Appendix G of the CEQA Guidelines, the following specific thresholds were developed by SCAG based on precedence as appropriate thresholds by which to determine significant impacts on transportation, traffic and security:

- Conflict with the established measures of effectiveness for the performance of the circulation system, by increasing the daily VMT, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to, VMT and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways;
- Result in a significant change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks;

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections), increased volumes or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; and
- Result in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

## Methodology

The methodology for determining the significance of impacts on transportation, traffic, and safety impacts compares current regional transportation conditions to expected future 2040 conditions with the Plan, as required by Section 15126.2(a) of the State CEQA Guidelines. SCAG utilized the Regional Travel Demand Model (RTDM) to compare the existing conditions to the Plan's 2040 potential build out. Total daily VMT is used as a measure of overall utilization of roadways which relates to vehicle emissions, traffic congestion, and the effectiveness of land use patterns and alternate mode options in reducing the need for vehicular travel. Vehicle hours of delay (VHD) measures the congestion level of the roadway. Other measures such as percentage of peak period work trips completed in 45 minutes and transportation system accident rates measure the effect of other modal choices from automobile (single and high occupancy vehicles) to transit. Percentage fatality accident rate also look at safety of motorized to non-motorized modes (bicycling and walking). The performance measure output for the Plan's horizon year 2040 was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2040 transportation model output provides a regional and cumulative level of analysis for the impacts of the Plan on transportation, traffic and safety.

The significance of impacts was determined by applying the significance criteria above to compare current regional transportation conditions to expected future conditions with the Plan. The RTDM provides performance data for future Plan conditions. The performance measure output for year 2040 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2040 transportation model output provides a regional and cumulative level of analysis for the impacts of the Plan on transportation resources.

### 3.17.4 IMPACT ANALYSIS

**IMPACT TRA-1: Potential to conflict with the established measures of effectiveness for the performance of the circulation system, by increasing the daily VMT, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

#### *Significant Impact*

Transportation projects and land use strategies considered in 2016 RTP/SCS the 2016 RTP/SCS has the potential to conflict with the established measures of effectiveness for the performance of the

circulation system, by increasing per capita VMT and increase delay over the baseline condition, constituting a significant impact. VMT has been used throughout the development of the Plan and directly relate to the performance of the region's transportation system. Total VMT in 2040 have the potential to increase when compared to current daily VMT. Due to increasing costs and environmental concerns, the expansion of highways and local arterials has not been keeping pace with the growing population. Critical gaps in the transportation network that hinder access to certain parts of the region and/or hinder efficient regional operations currently exist. Locally-developed county transportation plans have identified projects to close these gaps and complete the system, and they are included in the Plan. These projects include the Limited Access Expressway SR-115 in Imperial County, the SR-710 Gap Closure in Los Angeles County, the High Desert Corridor in Los Angeles and San Bernardino Counties, the SR-241 Improvements in Orange County, the CETAP Inter-county Corridor A in Orange and Riverside Counties, and the U.S. 101 and SR-118 Improvements in Ventura County.

Heavy investment in HOV and HOT lanes has given the region one of the nation's most comprehensive HOV and experimental HOT networks and highest rideshare rates. The 2016 RTP/SCS proposes strategic HOV gap closures and freeway-to-freeway direct HOV connectors to complete the system. Another key HOV strategy in the Plan is the conversion of certain HOV lanes in the region to allow for continuous access. Orange County has taken a leadership role on this over the past few years, and their recent studies have concluded that continuous-access HOV lanes do not perform any worse than limited-access HOV lanes.<sup>33</sup> At the same time, they provide carpoolers with greater freedom of movement in and out of HOV lanes. Highlights of these projects are projected to be completed by 2040, include various I-5 HOV projects in Los Angeles and Orange County, SR-73 HOV lane conversion from I-405 to MacArthur Boulevard, I-15 from SR-74 to I-215 Interchange in Riverside County, I-210 HOV from I-215 to I-10 in San Bernardino County, US-101 HOV project from Moorpark Road to Wendy Drive in Ventura County, and the I-405/SR-74 connector in Orange County.

Local streets and roads account for over 80 percent of the total road network and carry almost 50 percent of total traffic.<sup>34</sup> They serve different purposes in different parts of the region, or even in different parts of the same city. Many streets serve as major thoroughfares or even alternate parallel routes to congested freeways. At the same time, street right-of-ways often support different modes of transportation besides the automobile, including bicycles, pedestrians, and transit. The Plan contains a host of arterial projects and improvements to achieve different purposes in different areas. In all parts of the region, it includes operational and technological improvements to maximize system productivity in a more cost-effective way than simply adding capacity. Such strategic improvements include spot widening, signal prioritization, driveway consolidation and relocation, and grade separations at high-volume intersections.

While the Plan's multimodal strategy aims to reduce per capita VMT over the next 25 years, total demand to move people and goods would continue to grow due to the region's population increase. A strategic expansion of the transportation system is needed in order to provide the region with the mobility it needs. The Plan targets this expansion around transportation systems that have room to grow, including transit, improved rail sections, active transportation, express lanes, and goods movement network system. Some of these systems, such as transit, active transportation, and express

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<sup>33</sup> *Los Angeles Times*. November 2014. California Commute: Orange County Takes Continuous-Access Approach on Carpool Lanes.

<sup>34</sup> Southern California Association of Governments. December 2015. *Draft 2016 Regional Transportation Plan/Sustainable Communities Strategy*.



lanes, have proven over the years to be a reliable and convenient form of transportation for those who are able to easily access it.

The Plan calls for a substantial expansion of transit facilities and service over the next 25 years. While these capital projects would provide the SCAG region with a much more mature public transportation system, operational improvements and new transit programs and policies would also contribute greatly to attracting more trips to transit and away from single-occupant vehicle travel. First, the expanding HOV and express lane networks calls for the development of an extensive express bus point-to-point network. Second, transit oriented and land use development strategies call for increasing the frequency and quality of fixed-route bus service by virtue of adding new bus rapid transit service, limited-stop service, increased frequencies along targeted corridors, and the introduction of local community circulators to provide residents of smart growth developments with the option of taking transit over using a car to make short, local trips.

The Plan suggests three passenger rail strategies that would provide additional travel options for long-distance travel within the region and to neighboring regions. These are improvements to the Los Angeles to San Diego Corridor (LOSSAN), improvements to the existing Metrolink system, and other rail system improvements.

The recent release of the 2014 CA HST Business Plan confirmed the funding and implementation challenges of the project. The 2014 CA HST Business Plan now estimates a Phase I cost of \$68 billion (in year of expenditure dollars) with service extended to the region in 2033<sup>35</sup>. Within the draft CA HST Business Plan, there are a variety of strategies to connect Northern and Southern California to the State network. The Business Plan assumes that Southern California would be connected to the network in 2033, but that incremental improvements can be made in advance of and in preparation for that connection.<sup>36</sup> Therefore, stakeholders throughout Southern California are seeking to improve California's rail system and improve the region's commuter and intercity rail services.

Conversion of existing HOV lanes to HOT lanes has demonstrated to improve traffic flow. Los Angeles Metro Express Lanes pilot program is an example where mobility partners have cooperated to provide enhanced options on the I-10 and I-110 Freeways. Results from this effort have shown travel time savings, and increase in trip reliability, reduced congestion and GHG emissions.

Another emphasis on transit network improvements includes transit priority facilities, such as bus lanes and traffic signal priority. The region has a minimal amount of bus lanes, when compared to other major metropolitan areas. The Los Angeles County Metro Rapid Bus network employs bus signal priority that gives buses up to ten percent more green light time from the normal green light phase. The Plan recommends that the network should be expanded to other counties in the region. Additional recommended enhancements to the region's transit services include expanding bike-carrying capacity on transit vehicles, implementing regional and inter-county fare agreements and media, such as LA County's EZ Pass, and expanding and improving real-time passenger information systems.

Active transportation refers to transportation such as walking or using a bicycle, tricycle, velomobile, wheelchair, scooter, skates, skateboard, push scooter, trailer, hand cart, shopping car, or similar

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<sup>35</sup> California High Speed Rail Authority (CHSRA). February 2014. *Draft 2014 Business Plan*.

<sup>36</sup> California High Speed Rail Authority (CHSRA). February 2014. *Draft 2014 Business Plan*.

electrical devices. The two most common forms of active transportation are bicycling and walking. Walking and bicycling are essential parts of the SCAG transportation system and could help reduce roadway congestion. As the region works towards reducing congestion, active transportation would become more essential to meet the future needs of residents within the SCAG region.

The baseline conditions for 2015 were based on the 2012 base year transportation network, as modified to include project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS, as last amended in September 2014, thus providing the most accurate characterization possible of the baseline conditions in 2015. Substantial growth and development is anticipated to occur within the region between 2016 and 2040. Despite the regional planning efforts to reduce per capita VMT, predicted growth would increase the total amount of VMT. Average daily VMT is expected to grow from 448 million miles in 2012 to 504 million miles per day in 2040 (**Table 3.17.4-1, Daily Vehicle Miles Traveled in 2012 and 2040**). This change constitutes a 13.3 percent increase over this period and includes light, medium and heavy-duty vehicle VMT in all six counties. The greatest percentage increase in VMT would occur in Imperial County followed by Riverside County.

**TABLE 3.17.4-1  
DAILY VEHICLE MILES TRAVELED IN 2012 AND 2040\***

County	In Thousands		
	2012 Base Year*	2040 No Project	2040 Plan
Imperial	5,000	9,000	9,000
Los Angeles	226,000	249,000	228,000
Orange	77,000	84,000	79,000
Riverside	58,000	86,000	80,000
San Bernardino	62,000	89,000	86,000
Ventura	20,000	23,000	21,000
SCAG Region	448,000	540,000	504,000

**NOTE:**

Numbers are rounded to nearest thousand.

\*Please note that 2012 base year transportation network includes project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014.

**SOURCE:**

SCAG modeling, 2015.

Based on the transportation data provided by SCAG and based on forecasts developed using the RTDM and validated to standards in the California Transportation Commission RTP Guidelines, the Plan would decrease overall VMT compared to the No Project scenario, by 36,000 VMT. Emissions associated with increased VMTs would be heavily experienced on roadways, highways, and freeways at all six County regions throughout SCAG. A better mix of residential, employment, education, and service uses is necessary to allow people to accomplish their daily activities with less driving, and decrease the total amount of VMT. Policies that aim to charge drivers user fees to cover the cost of services they use can be effective in lowering emission and delays from increased VMTs. Nevertheless, this increase in VMT would constitute a significant impact requiring the consideration of mitigation measures.

**IMPACT TRA-2: Potential to conflict with an applicable congestion management program, including, but not limited to, VMT and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

**Significant Impact**

The transportation projects and land use strategies considered in the 2016 RTP/SCS have the potential to conflict with the established measures of effectiveness for the performance of the circulation system due to the increase in VMT, potentially constituting a conflict with the adopted County CMPs, within the SCAG Region, and their respective measures, constituting a significant impact.

Nevertheless, the Plan would contribute to a decrease in VHD within the SCAG region. Consistent with provisions of Section 15091 of the State CEQA Guidelines, relevant County Congestion Management Plan, and Circulation Elements of relevant County and City General Plans, SCAG shall facilitate encouraging measures to further reduce overall VHD by dispersing roadway and highway congestion hotspots with the utilization of HQTAs. HQTAs is a land use strategy within one-half mile of a fixed guideway transit stop or bus transit corridors where buses pick up passengers every 15 minutes or less during peak commute hours. With the utilization of HQTAs overall impacts to regional transportation system is lessened when comparing the future Plan with existing conditions. In accordance to SCAG modeling, total daily VHD would decrease from 2,500,000 vehicle-hours in 2012 to 2,118,000 vehicle-hours in 2040 (**Table 3.17.4-2, Total Daily Hours of Delay in 2012 and 2040**). This constitutes a decrease from existing conditions and includes light, medium and heavy-duty vehicles VHD in all six counties. Delay would decrease in Los Angeles, Orange, and Ventura Counties and increase in Imperial, Riverside, and San Bernardino Counties. Regional delays in terms of hours from vehicular trips would decrease by 13 percent by 2040.

**TABLE 3.17.4-2  
TOTAL DAILY HOURS OF DELAY IN 2012\* AND 2040**

County	In Thousands of Vehicle-Hours		
	2012 Base Year*	2040 No Project	2040 Plan
Imperial	1	8	7
Los Angeles	1,642	2,087	1,321
Orange	433	536	289
Riverside	162	473	214
San Bernardino	192	589	219
Ventura	70	137	67
Regional	2,500	3,831	2,118

**NOTE:**

Numbers are rounded to nearest thousand.

\*Please note that 2012 base year transportation network includes the 2015 project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014

**SOURCE:**

SCAG modeling, 2015.

Despite the overall regional decrease and dispersion of vehicular congestion, impacts would remain significant.

A greater amount of time delay is experienced in corridors (roadway and highways) that are frequently used by good movement related heavy-duty trucks. Despite the regional planning efforts to improve the efficiency of the goods movement system, an increased demand for goods would lead to increase in use on the roadway network under the Plan. Total daily heavy-duty truck trip VHD would increase from 118,000 average VHD in 2012 to 184,000 average VHD in 2040, or a difference of 66,000 VHD (**Table 3.17.4-3, Daily Heavy Duty Truck Trip Hours of Delay in 2012 and 2040**). This future 2040 Plan condition constitutes a 36 percent increase from existing condition. This increase in VHD would result in an exacerbation of the system capacity and hinder consistent traffic flow. Therefore, frequently used corridors for heavy-trucks such as the I-710 and surrounding communities are at risk of lower levels of service without proper mitigation measures to curb congestion.

**TABLE 3.17.4-3  
TOTAL DAILY HEAVY-DUTY TRUCKS TRIPS HOURS OF DELAY IN 2012\* AND 2040**

County	In Thousands of Hours		
	2012*	2040 No Project	2040 Plan
Imperial	0	1	1
Los Angeles	71	146	86
Orange	16	33	18
Riverside	11	47	31
San Bernardino	17	82	43
Ventura	2	6	3
Regional	118	314	184

**SOURCE:**

SCAG modeling, 2015.

**NOTE:**

\* Please note that 2012 base year transportation network includes the 2015 project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014

SCAG and the six Counties have worked towards the development of a metropolitan-wide strategy for new and existing transportation facilities eligible for funding under Title 23 U.S.C, and Title 49 U.S.C., to optimize the transportation system for safety and improve effectiveness. This strategy includes the development of a coherent and integrated regional goods movement system. Strategies include a Regional Freight Corridor System which would create a system of truck-only lanes for major freeway systems that are affected by haul trucks used for the goods movement; a Truck Bottleneck Relief Strategy which would mitigate top-priority truck bottlenecks; a Rail Strategy which would allow shippers the ability to move over long distances at lower costs, utilizing efficient rail strategies to include expansion and modernization of intermodal facilities; a Good Movement Environmental Strategy which would focus on a two-pronged approach for achieving an efficient, safe and economically sound freight system that reduces environmental impacts.

In order to meet federal certification requirements, SCAG and county CMAAs, specifically LA County Metro, OCTA, RCTC, SANBAG, and VCTC are developing means to monitor and maintain the existing roadway infrastructure through demand reduction techniques, land-use and operation management strategies, and strategic capacity enhancement strategies. Additional strategies include supporting land

use policies aim to focus growth in HQTAs with enhanced opportunities for Southern California residents to access destinations without the use of an automobile. This would reduce, but not eliminate, at-capacity or near-capacity conditions (LOS E and LOS F) on roadways within the region. However, congestion would be diverted and increase in public transit within HQTAs would occur.

SCAG has also worked with local CMAs to support strategies for diversifying mode choices by encouraging public transit use and non-motorized forms of commute such as walking and other active transportation in the Plan. While the actual benefits of these alternative and active transportation modes are modest, SCAG transportation modeling indicates a potential to overall improvement in peak period work trips completed within 45 minutes by personal vehicle or by other transit with implementation of the Plan. In order to determine these findings, PM peak period work trips were used to assess impacts to work commute as PM trips are prone to the greatest amount of vehicle delay. To assess impacts, 45 minutes for work trips were used as a benchmark to analyze commute lengths for both by personal vehicle and other transit modes.

Over 80 percent of the Existing PM peak period work trips would take 45 minutes or less by single occupancy vehicle, 74.2 percent of the Existing PM peak period work trips would take 45 minutes or less by high occupancy vehicle, and 28.5 percent would occur within 45 minutes by transit (**Table 3.17.4-4, Percentage of PM Peak Period Work Trips Complete within 45 minutes**).

In 2040, with the implementation of the Plan, 89.1 percent of the PM peak period work trips would take 45 minutes or less by single occupancy vehicle, 80.2 percent of the PM peak period work trips would take 45 minutes or less by high occupancy vehicle, and 30.1 percent would occur within 45 minutes by transit. The increase in vehicles achieving 45 minutes travel time by all modes of transportation would occur with the implementation of the Plan. As such, this improvement is considered regionally beneficial in reducing congestion and improving level of service on roads associated with work commutes.

**TABLE 3.17.4-4  
PERCENTAGE OF PM PEAK PERIOD WORK TRIPS COMPLETED WITHIN 45 MINUTES**

County	2012 Base Year*	2040 No Project	2040 Plan
<b>AUTOS – SINGLE OCCUPANCY VEHICLES</b>			
Imperial	95.8%	96.5%	96.9%
Los Angeles	80.4%	81.3%	89.2%
Orange	79.5%	79.7%	87.7%
Riverside	87.1%	84.7%	89.9%
San Bernardino	85.2%	84.5%	88.2%
Ventura	90.1%	89.9%	92.3%
Region	81.8%	82.4%	89.1%
<b>AUTOS – HIGH OCCUPANCY VEHICLES</b>			
Imperial	83.3%	83.7%	84.1%
Los Angeles	75.7%	76.3%	82.5%
Orange	70.4%	71.4%	79.9%
Riverside	76.5%	72.7%	76.9%
San Bernardino	71.3%	69.5%	73.3%
Ventura	72.9%	72.7%	77.5%
Region	74.2%	74.1%	80.2%
<b>TRANSIT</b>			
Imperial	16.7%	12.2%	12.0%
Los Angeles	30.6%	28.7%	32.4%
Orange	13.8%	15.1%	18.1%
Riverside	17.8%	19.1%	14.0%
San Bernardino	10.7%	10.7%	11.8%
Ventura	7.5%	6.7%	6.6%
Region	28.5%	27.0%	30.1%

**NOTE:**

Numbers are rounded to nearest thousand.

\*Please note that 2012 base year transportation network includes the 2015 project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014.

**SOURCE:**

SCAG modeling, 2015.

Despite the benefits shown by implementing the Plan, the transportation projects and land use strategies considered in the 2016 RTP/SCS have the potential to conflict with the established measures of effectiveness for the performance of the circulation system due to the increase in VMT, potentially posing a conflict with the adopted County CMPs, within the SCAG Region, and their respective measures, constituting a significant impact requiring the consideration of mitigation measures.

**IMPACT TRA-3: Potential to result in a significant change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.**

***Less than Significant Impact***

Based on the statistics in SCAG's aviation forecast, there is adequate capacity in provisioning for goods and passenger services, thus the 2016 RTP/SCS would be expected to result in impacts that are below the level of significance to air traffic patterns. The Plan would not in itself affect air traffic patterns. However, increased or dispersed population that would occur by 2040 would likely result in increased air traffic in all nine major commercial airports in Southern California as listed above in **Table 3.17.2-9**. According to the Plan, the regional-level air passenger demand forecast would be 136.2 million annual passengers (MAP) by 2040 (**Figure 3.17.4-1, Anticipated Future Passenger Demands at Major Southern California Airports**). This forecast is approximately 7 percent lower than the 2012 RTP/SCS's 145.9 MAP projection for the year 2035. The Plan's air cargo demand is more conservative in comparison to the 2012 RTP/SCS. In 2012 RTP/SCS, the demand for air cargo was estimated as 5.61 million tons, while the 2016 RTP/SCS is projecting approximately 3.78 million tons.<sup>37</sup> The 2016 RTP/SCS land use strategies aim to focus and influence new growth in HQTAs and Transit Priority Areas (TPAs) in locations away from airport clear zones and potential accident zones. Encouraging growth in HQTAs and TPAs would decrease the number of Southern California residents exposure to potential safety risks associated with air traffic.

The Plan would also recommend strategies which would support the regionalization of air demand; support regional and inter-regional projects that facilitate airport ground access; local land use efforts; development and use of transit access to the region's airports; encourage use of modes with high average vehicle occupancy; and discourage use of modes that require "deadhead" trips to/from airports. Implementation of these recommendations would avoid public safety issues associated with flight paths and safety issues as a result of collisions and congestion. Impacts would be less than significant.

**IMPACT TRA-4: Potential to substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections), increased volumes or incompatible uses (e.g., farm equipment).**

***Less than Significant Impact***

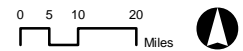
In accordance with the provisions governing hazard designs from the Southern California ITS, the Plan would not result in and overall increase hazards due to design features or increase conflicts between incompatible uses, and impact would be less than significant. The 2016 RTP/SCS land use strategies aim to focus growth in HQTAs and TPAs. These land use strategies are generally located away from high-speed facilities where potential hazards due to design features tend to be high. Moreover, development in HQTAs would increase the number of Southern California residents in proximity to transit and in areas with good opportunities for walking and biking, making it imperative to design facilities with bike racks,

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<sup>37</sup> Southern California Association of Governments. 6 August 2015. *Item No. 1: Supplemental Report for Item No. 1*. Available at: <http://www.scag.ca.gov/committees/CommitteeDocLibrary/tc080615fullagn.pdf>



▲ Major Airport      MAP= Million Annual Passengers





improved sidewalks, bikeways and greenways, and transit stations to promote pedestrian and other forms of active transportation.

The Plan includes Transportation System Management strategies to improve safety through reducing the concentration of erratic driving patterns and the clearing of incidents and accidents in a quick manner. As shown in **Table 3.17.4-5, Existing and 2040 Regional Transportation System Accident Rates**, implementation of the Plan would result in a system-wide daily injury rate of 12.93 injuries per million persons for all travel modes, which would be a decrease of 5.34 daily injuries per million persons when compared to the existing rate of 18.27, consistent with the goals and the actions outlined in the California Strategic Highway Safety Plan. Implementation of the Plan would potentially result in a system-wide daily fatality rate of 0.17 fatalities per million persons for all travel modes, a decrease of 0.03 daily fatalities per million persons when compared to the existing rate of 0.20.

**TABLE 3.17.4-5  
EXISTING AND 2040 REGIONAL TRANSPORTATION SYSTEM ACCIDENT RATES**

Daily Per Million Persons	2012*	2040 No Project	2040 Plan
Fatalities	0.20	0.18	0.17
Injuries	18.27	13.67	12.93

**SOURCE:**

SCAG modeling, 2015.

**NOTE:**

\* Please note that 2012 base year transportation network includes the 2015 project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014.

The Plan includes strategies to encourage a complete streets approach to roadway improvements. The Plan also encourages the design of facilities to enhance the safety of riders, bicyclists, and pedestrians and minimize hazards. Education and encouragement informing the public regarding safe routes to schools and other safety campaigns would also occur. Impacts from increase hazards due to a design feature or incompatible attributes are less than significant.

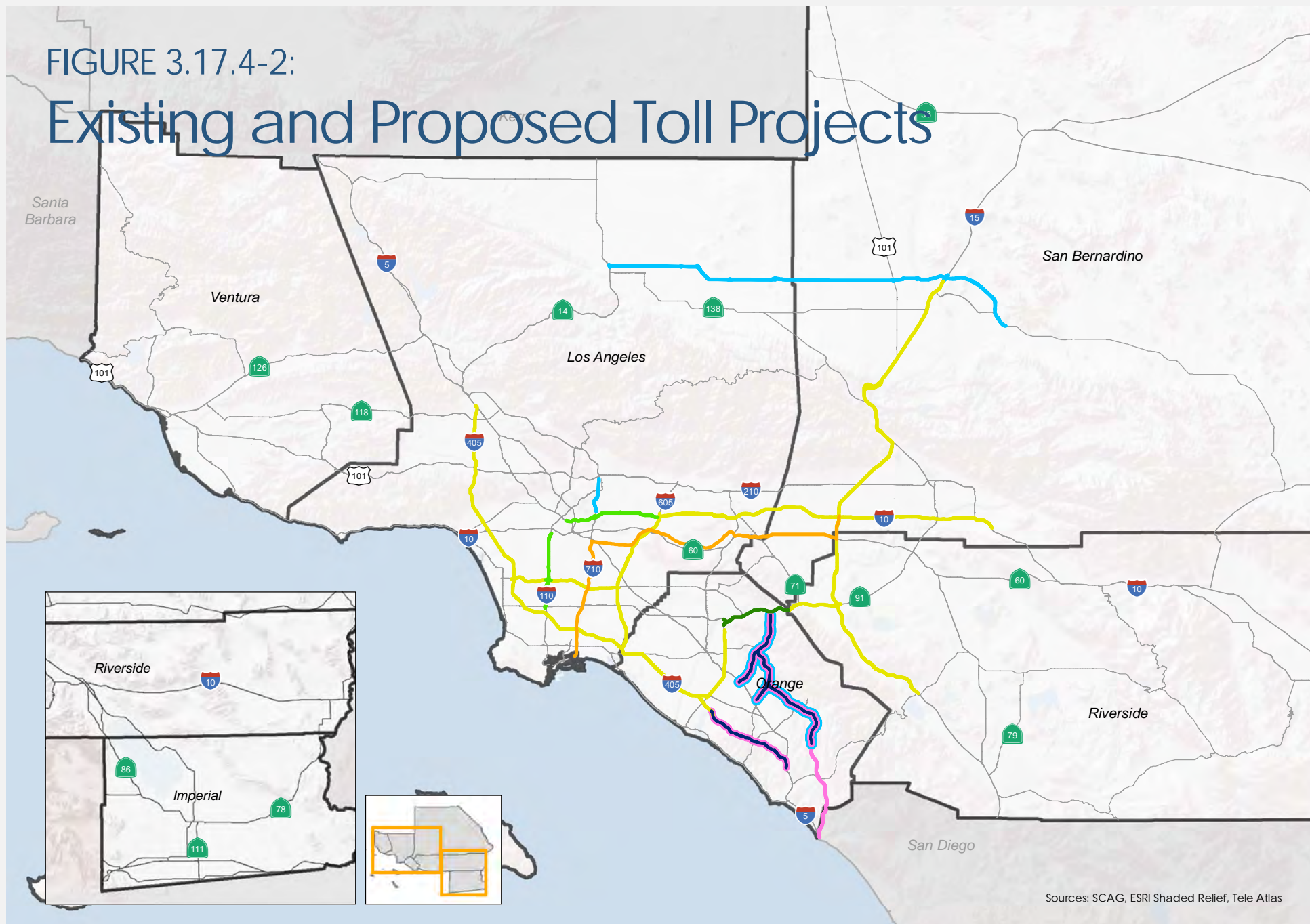
**IMPACT TRA-5: Potential to result in inadequate emergency access.**

**Significant Impact**

The transportation and land use strategies considered in the 2016 RTP/SCS have the potential to conflict with emergency access criteria, constituting a significant impact. One of the primary goals of 2016 RTP/SCS the 2016 RTP/SCS is to improve the mobility and improve accessibility to destinations. Chapter 5 of the 2016 RTP/SCS, appropriately titled “a Plan for Mobility, Sustainability, and a High Quality of Life,” provides a discussion on how to best meet the region’s population demand which is projected to grow by more than 20 percent (approximately 18 million people to more than 22 million) people in all types of communities from urban centers, cities, towns, to suburban neighborhoods. Additional provisions are stated to assist the region in remaining as a vital gateway for goods and services so residents can enjoy a high quality of life complemented by easily accessible transportation options, well-maintained infrastructures, and reduced congestion on highways and arterials, express and toll lane network, public transit and active transportation (**Figure 3.17.4-2, Existing and Proposed Toll Projects**). Depending on the timing, location, and duration of construction activities, several of the proposed

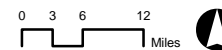
FIGURE 3.17.4-2:

# Existing and Proposed Toll Projects



Sources: SCAG, ESRI Shaded Relief, Tele Atlas

- Dark Blue: Toll Lanes (Base Year 2012)
- Light Blue: Toll Lanes (Plan 2040)
- Pink: Toll Lanes (Baseline 2040)
- Light Green: HOT Lanes (Base Year 2012)
- Light Green: HOT Lanes (Baseline 2040)
- Yellow: HOT Lanes (Plan 2040)
- Orange: Freight Corridors (Plan 2040)



transportation projects (including grade crossings, arterials, interchanges, and auxiliary lanes), would result in delayed emergency vehicle response times or otherwise disrupt delivery of emergency response services, could occur. For example, closing off one or more lanes of a roadway, emergency routes would be impaired. The closure of these lanes could potentially cause traffic delays and ultimately prevent access to calls for service. Coordination within local jurisdictions can and should be taken to maintain adequate emergency access for ambulance services and other public safety services in the design of projects entailed by the Plan. Construction and operation of the transportation projects, and related development projects associated with the land use strategies considered in the 2016 RTP/SCS would have the potential to conflict with emergency access plans, constituting a significant impact, requiring the consideration of mitigation measures.

**IMPACT TRA-6: Potential to result in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

***Less than Significant Impact***

The transportation projects and land use measures considered in the 2016 SCAG RTP/SCS encourages the adoption of policies to encourage public transit, bicycle, or pedestrian facilities, and would be expected to result in less than significant impacts. The Plan is consistent with provisions of Section 15091 of the State CEQA Guidelines, SCAG Active Transportation Plan, Passenger Rail and Transit Plans, and would not result in conflict with the regulation on non-motorized transit and pedestrian facilities. The 2016 RTP/SCS includes a series of individual improvement projects and program, including public transit, bicycle and trail, and pedestrian improvements projects, to enhance Southern California's multi-modal transportation system. The proposed 2016 Active Transportation Plan has developed goals for increasing bikeway miles by increasing commute mode sharing of bicycles and pedestrian activity and by improving active transportation pathways to public transit (including ADA compliant pathways). Additionally, the Plan recommends that development influenced by land use strategies, provide an increased amount of bicycle parking increase this mode of transportation. As shown on **Table 3.17.4-6**, it is anticipated that the region would expect up to 34.5 percent of total trips in the forms of active transportation and public transit by 2040. This is a substantial increase when compared with the 26.8 percent without the Plan in 2040, and 25.9 percent at the existing baseline. To achieve implementation of these goals, SCAG will collaborate with other transportation agencies, local and regional government, and the California Active Transportation Program to implement a sustainability program in the six counties region. Currently, the shares of walking and biking in SCAG region combined is approximately 12 percent of the total modes available. SCAG is currently working with local jurisdictions to increase this percentage to approximately 16 percent (**Table 3.17.4-6**). With all the measures included in the Plan to improve public access to transit, improve safety, and encourage Active Transportation, the Plan would reduce impacts related to transportation fatality. The Plan would promote active modes of transportation and would be in congruence with the performance requirements of the public transit, bicycle, and pedestrian facilities.

**TABLE 3.17.4-6  
PERCENTAGE OF MODE SHARE ON TRANSIT AND ACTIVE TRANSPORTATION**

Mode Share	2012*	2040 No Project	2040 Plan
Walk	10.6	10.7	13.5
Bike	1.3	1.6	2.2
Active Transportation	11.9	12.3	15.7
Transit	2.1	2.2	3.1
Total	25.9	26.8	34.5

**SOURCE:**

SCAG modeling, 2015.

**NOTE:**

\* Please note that 2012 base year transportation network includes the 2015 project information from the 2015 Federal Transportation Improvement Program (FTIP) adopted in September 2014 and approved by Federal Highway Administration in December 2014, as well as projects listed in the 2012 RTP/SCS as last amended in September 2014.

### 3.17.5 CUMULATIVE IMPACTS

**IMPACT TRA-1: Potential to conflict with the established measures of effectiveness for the performance of the circulation system, by increasing the daily VMT, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

*Significant Cumulative Impact*

The 2016 RTP/SCS, in addition to other projects from other regional plans (e.g., RTPs of adjacent jurisdictions), could result in additional impacts inside and outside the SCAG region. Therefore, when considered with other projects outside the region, the Plan would have the potential to conflict with established performance of the circulation system by increasing overall VMT, constituting a significant cumulative impact requiring the consideration of mitigation measures.

**IMPACT TRA-2: Potential to conflict with an applicable congestion management program, including, but not limited to, VMT and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

*Significant Cumulative Impact*

The 2016 RTP/SCS, in addition to other projects from other regional plans (e.g., the Air Quality Management Plan and RTPs of adjacent jurisdictions), could result in additional impacts inside and outside the SCAG region. The Plan, when considered with other plans in the region, would potentially contribute to a cumulatively considerable amount of increased VMT and VHD from areas outside the

SCAG region, including Kern County and San Diego. As mentioned previously, the RTDM analyzes the population, households, and employment projected for 2040, which is anticipated to be the year with the largest demand on the transportation system expected during the lifetime of the Plan. In accounting for the effects of regional growth, the model output provides a long-term and cumulative level of analysis for the impacts of the Plan on transportation resources. Forecasted urban development and growth that would be accommodated by the transportation investments in the Plan and increased mobility provided by the Plan would contribute to the significant impacts. Therefore, when considered with other additional projects outside the region, the Plan would have the potential to conflict with established performance of the circulation system by increasing overall delays and congestion, constituting a significant cumulative impact requiring the consideration of mitigation measures.

**IMPACT TRA-3: Potential to result in a significant change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.**

***Less than Significant Cumulative Impact***

Based on California's overall aviation forecast, there is adequate capacity in provisioning for goods and passenger services. The Plan would not in itself affect air traffic patterns. However, increased or dispersed population that would occur by 2040 would likely result in increased air traffic in all nine major commercial airports in Southern California. Other RTPs also would recommend strategies which would support the regionalization of air demand; support regional and interregional projects that facilitate airport ground access; local land use efforts; development and use of transit access to the region's airports; encourage use of modes with high average vehicle occupancy; and discourage use of modes that require "deadhead" trips to/from airports. Implementation of these recommendations would avoid public safety issues associated with flight paths and safety issues as a result of collisions and congestion. Therefore, when considered with other additional projects outside the region, the Plan would result in less than significant cumulative impacts with respect to air traffic patterns.

**IMPACT TRA-4: Potential to substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections), increased volumes or incompatible uses (e.g., farm equipment).**

***Less than Significant Cumulative Impact***

In accordance with the provisions governing hazard designs from the ITS, the Plan and other projects in the region would not result in an overall increase in hazards due to design features or increase conflicts between incompatible uses. The land use strategies of other RTPs outside the SCAG region also aim to focus growth in HQTAs and TPAs. These land use strategies are generally located away from high-speed facilities where potential hazards due to design features tend to be high. Moreover, development in HQTAs would increase the number of California residents in proximity to transit and in areas with good opportunities for walking and biking, making it imperative to design facilities with bike racks, improved sidewalks, bikeways and greenways, and transit stations to promote pedestrian and other forms of active transportation. The Plan aims to facilitate such design measures. Therefore, the Plan would result in a less than significant cumulative impact with respect to hazards.

### **IMPACT TRA-5: Potential to result in inadequate emergency access.**

#### ***Significant Cumulative Impact***

The transportation and land use strategies considered in the 2016 RTP/SCS and other RTPs in surrounding areas have the potential to conflict with emergency access, constituting a significant impact. While there are provisions in many other RTPs outside the SCAG region to offer connectivity in terms of goods and services so residents can enjoy a high quality of life complemented by easily accessible transportation options, the timing, location, and duration of construction activities from transportation projects including grade crossings, arterials, interchanges, and auxiliary lanes outside the region could result in delayed emergency vehicle response times or otherwise disrupt delivery of emergency response services. For example, closing off one or more lanes of a roadway would result in impaired emergency routes. The closure of these lanes could potentially cause traffic delays and ultimately prevent access to calls for service. Construction and operation of the transportation projects, and related development projects outside the SCAG region, would have the potential to conflict with emergency access plans, constituting a significant cumulative impact requiring the consideration of mitigation measures.

### **IMPACT TRA-6: Potential to result in conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

#### ***No Cumulative Impact***

The Plan, when considered with other projects and RTPs, would not conflict with adopted policies, and plans, regarding public transit, bicycle, or pedestrian facilities, and therefore would not contribute to cumulative impacts in the SCAG region or surrounding areas.

### **3.17.6 MITIGATION MEASURES**

The transportation projects included in the 2016 RTP/SCS would result in significant impacts to transportation and traffic. Mitigation measures are presented in two categories: SCAG mitigation and project-level mitigation measures. SCAG mitigation measures shall be implemented by SCAG over the lifetime of the 2016 RTP/SCS. Project-level mitigation measures can and should be implemented by Lead Agencies for transportation and development projects, as applicable and feasible.

**IMPACT TRA-1: Potential to conflict with the established measures of effectiveness for the performance of the circulation system, by increasing the daily VMT, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

### *SCAG Mitigation Measures*

**MM-TRA-1(a)(1):** SCAG shall facilitate minimizing VMT and related vehicular delay by minimizing impacts to circulation and access, improve mobility, and encourage transit and Active Transportation by conducting and participating in workshops (i.e., Mobility 21 workshop and Regional Transportation Workgroups) and web-based planning tools for local governments, forums with policy makers, and County Transportation Planning Agencies, member cities, and state partners during consultation on development and implementation of the Plan.

**MM-TRA-1(a)(2):** SCAG shall establish transportation infrastructure practices that identify and prioritize the design, retrofit, hardening, and stabilization of critical transportation infrastructure to prevent failure, to minimize loss of life and property, injuries, and avoid long term economic disruption.

**MM-TRA-1(a)(3):** SCAG shall identify further reduction in VMT, and fuel consumption that could be obtained through land-use strategies, additional car-sharing programs with linkage to public transportation, additional vanpools, additional bicycle sharing and parking programs, and implementation of a universal employee transit access pass (TAP) program.

**MM-TRA-1(a)(4)** SCAG shall help ensure the rapid repair of transportation infrastructure in the event of an emergency. This will be accomplished by SCAG, in cooperation with local and State agencies, identifying critical infrastructure needs necessary for: a) emergency responders to enter the region, b) evacuation of affected facilities, and c) restoration of utilities. In addition, SCAG shall establish transportation infrastructure practices that promote and enhance security.

**MM-TRA-1(a)(5):** SCAG shall provide the means for collaboration in planning, communication, and information sharing before, during, or after a regional emergency. This will be accomplished by the following:

- SCAG shall develop and incorporate strategies and actions pertaining to response and prevention of security incidents and events as part of the on-going regional planning activities.
- SCAG shall offer a regional repository of GIS data for use by local agencies in emergency planning, and response, in a standardized format.
- SCAG shall enter into mutual aid agreements with other MPOs (as feasible) to provide this data, in coordination with the California OES in the event that an event disrupts SCAG's ability to function.

**MM-TRA-1(a)(6):** SCAG shall continue to analyze and develop potential implementation strategies for a regional, market-based system to price or charge for auto trips during peak hours.

**MM-TRA-1(a)(7):** SCAG shall develop a vanpool program for employees for commute trips

**MM-TRA-1(a)(8):** SCAG shall encourage new developments to incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.

### *Project-Level Mitigation Measures*

**MM-TRA-1(b):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, SCAG has identified mitigation measures capable of avoiding or reducing the potential for conflicts with the established measures of effectiveness for the performance of the circulation system that are within the jurisdiction and responsibility of Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with the adopted Congestion Management Plan, and other adopted local plans and policies, as applicable and feasible. Compliance can be achieved through adopting transportation mitigation measures as set forth below, or through other comparable measures identified by the Lead Agency:

- Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.
- Create a ride-sharing program by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.
- Provide a vanpool for employees.
- Fund capital improvement projects to accommodate future traffic demand in the area.
- Provide a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The TDM shall include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use, including:
  - Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement
  - Construction of bike lanes per the prevailing Bicycle Master Plan (or other similar document)
  - Signage and striping onsite to encourage bike safety
  - Installation of pedestrian safety elements (such as cross walk striping, curb ramps, countdown signals, bulb outs, etc.) to encourage convenient crossing at arterials
  - Installation of amenities such as lighting, street trees, trash and any applicable streetscape plan.
  - Direct transit sales or subsidized transit passes
  - Guaranteed ride home program
  - Pre-tax commuter benefits (checks)
  - On-site car-sharing program (such as City Car Share, Zip Car, etc.)
  - On-site carpooling program
  - Distribution of information concerning alternative transportation options
  - Parking spaces sold/leased separately  
Parking management strategies; including attendant/valet parking and shared parking spaces.



- Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing, and designating adequate passenger loading and unloading and waiting areas.
- Encourage bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible.
- Encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services.
- Encourage bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work.
- Build or fund a major transit stop within or near transit development.
- Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.
- Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions.
- Educate consumers, residents, tenants and the public about options for reducing motor vehicle-related greenhouse gas emissions. Include information on trip reduction; trip linking; vehicle performance and efficiency (e.g., keeping tires inflated); and low or zero-emission vehicles.
- Purchase, or create incentives for purchasing, low or zero-emission vehicles.
- Create local “light vehicle” networks, such as neighborhood electric vehicle systems.
- Enforce and follow limits idling time for commercial vehicles, including delivery and construction vehicles.
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles.
- Reduce VMT-related emissions by encouraging the use of public transit through adoption of new development standards that would require improvements to the transit system and infrastructure, increase safety and accessibility, and provide other incentives.
  
- Project Selection:
  - Give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita, while maintaining economic vitality and sustainability.
  - Separate sidewalks whenever possible, on both sides of all new street improvement projects, except where there are severe topographic or natural resource constraints.
  
- Public Involvement:
  - Carry out a comprehensive public involvement and input process that provides information about transportation issues, projects, and processes to community members and other stakeholders, especially to those traditionally underserved by transportation services.

- Transit and Multimodal Impact Fees:
  - Assess transit and multimodal impact fees on new developments to fund public transportation infrastructure, bicycle infrastructure, pedestrian infrastructure and other multimodal accommodations.
  - Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions.
- System Monitoring:
  - Monitor traffic and congestion to determine when and where new transportation facilities are needed in order to increase access and efficiency.
- Arterial Traffic Management:
  - Modify arterial roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary.
- Signal Synchronization:
  - Expand signal timing programs where emissions reduction benefits can be demonstrated, including maintenance of the synchronization system, and will coordinate with adjoining jurisdictions as needed to optimize transit operation while maintaining a free flow of traffic.
- HOV Lanes:
  - Encourage the construction of high-occupancy vehicle (HOV) lanes or similar mechanisms whenever necessary to relieve congestion and reduce emissions.
- Delivery Schedules:
  - Establish ordinances or land use permit conditions limiting the hours when deliveries can be made to off-peak hours in high traffic areas.
  - Implement and supporting trip reduction programs.
  - Support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives.
- Establish standards for new development and redevelopment projects to support bicycle use, including amending the Development Code to include standards for safe pedestrian and bicyclist accommodations, and require new development and redevelopment projects to include bicycle facilities, as appropriate with the new land use are as follows:
- Bicycle and Pedestrian Trails:
  - Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations.

- Bicycle Safety Program:
  - Develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers.
- Bicycle and Pedestrian Project Funding: Pursue and provide enhanced funding for bicycle and pedestrian facilities and access projects.
- Bicycle Parking:
  - Adopt bicycle parking standards that ensure bicycle parking sufficient to accommodate 5 to 10 percent of projected use at all public and commercial facilities, and at a rate of at least one per residential unit in multiple-family developments (suggestion: check language with League of American Bicyclists).
- Adopt a comprehensive parking policy to discourage private vehicle use and encourage the use of alternative transportation by incorporating the following:
  - Reduce the available parking spaces for private vehicles while increasing parking spaces for shared vehicles, bicycles, and other alternative modes of transportation;
  - Eliminate or reduce minimum parking requirements for new buildings;
  - “Unbundle” parking (require that parking is paid for separately and is not included in the base rent for residential and commercial space);
  - Use parking pricing to discourage private vehicle use, especially at peak times;
  - Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities;
  - Establish performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times;
  - Encourage shared parking programs in mixed-use and transit-oriented development areas.
- Establish policies and programs to reduce onsite parking demand and promote ride-sharing and public transit at large events, including:
  - Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates for peripheral parking;
  - Encourage special event center operators to advertise and offer discounted transit passes with event tickets;
  - Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking;
  - Promote the use of bicycles by providing space for the operation of valet bicycle parking service.
- Parking “Cash-out” Program:
  - Require new office developments with more than 50 employees to offer a Parking “Cash-out” Program to discourage private vehicle use.

- Pedestrian and Bicycle Promotion:
  - Work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.
- Fleet Replacement:
  - Establish a replacement policy and schedule to replace fleet vehicles and equipment with the most fuel efficient vehicles practical, including gasoline hybrid and alternative fuel or electric models.

**IMPACT TRA-2: Potential to conflict with an applicable congestion management program, including, but not limited to, VMT and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

### *SCAG Mitigation Measures*

See **MM-TRA-1(a) through TRA-1(a)(8)**.

**MM-TRA-2(a)(1):** SCAG shall facilitate minimizing impacts related to traffic congestion by complying with County Congestion Management Plans and via ongoing regional planning efforts, workshops, and web-based planning tools with County Congestion Management Agencies, member agencies, and state partners during consultation on development and maintenance of the Plan. Congestion relief efforts shall be in accordance with the approach outlined in the SCAG Congestion Management Appendix of the 2016 RTP/SCS.

**MM-TRA-2(a)(2):** SCAG shall facilitate the remote use of ITS technologies that enhance transportation security, improve surveillance, monitor and distress notification systems and to assist in the rapid evacuation of disaster areas. SCAG shall facilitate minimizing impacts related to traffic congestion by facilitating regional efforts and coordinate discussion and collaboration among public agencies related to Intelligent Transportation Systems, as described in the **Transportation Security and Safety Appendix of the 2016 RTP/SCS**.

### *Project-Level Mitigation*

**MM-TRA--2(b).** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, SCAG has identified mitigation measures, capable of avoiding conflict with an applicable congestion management program that are within the jurisdictions of the lead agencies, including, but not limited to, VMT, VHD and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with the adopted Congestion Management Plan, and other adopted local plans and policies,

as applicable and feasible. Compliance can be achieved through adopting transportation mitigation measures as set forth below, or through other comparable measures identified by the Lead Agency:

- Encourage a comprehensive parking policy that prioritizes system management, increase rideshare, and telecommute opportunities, including investment in non-motorized transportation and discouragement against private vehicle use, and encouragement to maximize the use of alternative transportation:
  - Advocate for a regional, market-based system to price or charge for auto trips during peak hours.
  - Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.
  - Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or streetlights are installed, require the use of Light Emitting Diode (LED) technology.
  - Encourage the use of car-sharing programs such as ZipCar. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation.
  - Reduce VHDs, especially daily heavy-duty truck vehicle hours of delay, through goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay.
- Determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of this project and other nearby projects that could be simultaneously under construction. Develop a construction management plan that include at least the following items and requirements:
  - A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
  - Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
  - Location of construction staging areas for materials, equipment, and vehicles at an approved location.
  - A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The Lead Agency shall be informed who the Manager is prior to the issuance of the first permit.
  - Provision for accommodation of pedestrian flow.
  - As necessary, provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces.
  - Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the project sponsor's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All

- damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the Lead Agency (or other appropriate government agency) and/or photo documentation, at the sponsor's expense, before the issuance of a Certificate of Occupancy.
- Any heavy equipment brought to the construction site shall be transported by truck, where feasible.
  - No materials or equipment shall be stored on the traveled roadway at any time.
  - Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.
  - All equipment shall be equipped with mufflers.
  - Prior to the end of each work-day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.
  - Promote “least polluting” ways to connect people and goods to their destinations.
- Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, by incorporating the following:
    - Ensure transportation centers are multi-modal to allow transportation modes to intersect;
    - Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles, light rail, and rail;
    - To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges;
    - Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers and regional destinations;
    - Coordinate schedules and routes across service lines with neighboring transit authorities;
    - Support programs to provide “station cars” for short trips to and from transit nodes (e.g., neighborhood electric vehicles);
    - Study the feasibility of providing free transit to areas with residential densities of 15 dwelling units per acre or more, including options such as removing service from less dense, underutilized areas to do so;
    - Employ transit-preferential measures, such as signal priority and bypass lanes. Where compatible with adjacent land use designations, right-of-way acquisition or parking removal may occur to accommodate transit-preferential measures or improve access to transit. The use of access management shall be considered where needed to reduce conflicts between transit vehicles and other vehicles;
    - Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets;
    - Use park-and-ride facilities to access transit stations only at ends of regional transit ways or where adequate feeder bus service is not feasible.
  - Upgrade and maintain transit system infrastructure to enhance public use, including:
    - Ensure transit stops and bus lanes are safe, convenient, clean and efficient;
    - Ensure transit stops have clearly marked street-level designation, and are accessible;
    - Ensure transit stops are safe, sheltered, benches are clean, and lighting is adequate;

- Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile.
- Enhance customer service and system ease-of-use, including:
  - Develop a Regional Pass system to reduce the number of different passes and tickets required of system users;
  - Implement “Smart Bus” technology, using GPS and electronic displays at transit stops to provide customers with “real-time” arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service);
  - Investigate the feasibility of an on-line trip-planning program.
- Prioritize transportation funding to support a shift from private passenger vehicles to transit and other modes of transportation, including:
  - Give funding preference to improvements in public transit over other new infrastructure for private automobile traffic;
  - Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, and bicycle and pedestrian access.
- Promote ride sharing programs, including:
  - Designate a certain percentage of parking spaces for ride-sharing vehicles;
  - Designate adequate passenger loading, unloading, and waiting areas for ride-sharing vehicles;
  - Provide a web site or message board for coordinating shared rides;
  - Encourage private, for-profit community car-sharing, including parking spaces for car share vehicles at convenient locations accessible by public transit;
  - Hire or designate a rideshare coordinator to develop and implement ridesharing programs.
- Support voluntary, employer-based trip reduction programs, including:
  - Provide assistance to regional and local ridesharing organizations;
  - Advocate for legislation to maintain and expand incentives for employer ridesharing programs;
  - Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes;
  - Provide public recognition of effective programs through awards, top ten lists, and other mechanisms.
- Implement a “guaranteed ride home” program for those who commute by public transit, ride-sharing, or other modes of transportation, and encourage employers to subscribe to or support the program.
- Encourage and utilize shuttles to serve neighborhoods, employment centers and major destinations.

- Create a free or low-cost local area shuttle system that includes a fixed route to popular tourist destinations or shopping and business centers.
- Work with existing shuttle service providers to coordinate their services.
- Facilitate employment opportunities that minimize the need for private vehicle trips, including:
  - Amend zoning ordinances and the Development Code to include live/work sites and satellite work centers in appropriate locations;
  - Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate.
- Enforce State idling laws for commercial vehicles, including delivery and construction vehicles.
- Organize events and workshops to promote GHG-reducing activities.
- Implement a Parking Management Program to discourage private vehicle use, including:
  - Encouraging carpools and vanpools with preferential parking and a reduced parking fee;
  - Institute a parking cash-out program;
  - Renegotiate employee contracts, where possible, to eliminate parking subsidies;
  - Install on-street parking meters with fee structures designed to discourage private vehicle use;
  - Establish a parking fee for all single-occupant vehicles.

### **IMPACT TRA-5: Potential to result in inadequate emergency access**

#### *SCAG Mitigation Measures*

**MM-TRA-5(a):** SCAG shall facilitate minimizing impacts to emergency access through ongoing regional planning efforts to improve emergency access through design refinements, safety and security improvements, and collaborative planning with local, regional, and state partners such as Department of Transportation, Congestion Management Agencies, Fire Department, and other local enforcement agencies to minimize, reduce, and avoid impacts to regional transportation facilities and comply with the county and cities regional plan during development of the Regional Transportation Plan.

#### *Project-Level Mitigation Measures*

**MM-TRA-5(b):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, SCAG has identified mitigation measures capable of avoiding or reducing impacts to emergency access that are in the jurisdiction and responsibility of fire departments, local enforcement agencies, and/or Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider improving emergency access and ensuring compliance with the provisions of the county and city general plan, Emergency Evacuation Plan, and other regional and local plans establishing access during emergencies, as applicable and feasible. Compliance can be achieved through adopting transportation mitigation measures as set forth below, or through other comparable measures identified by the Lead Agency:



- Prior to construction, project implementation agencies can and should ensure that all necessary local and state road and railroad encroachment permits are obtained. The project implementation agency can and should also comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits may require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans can and should include the following requirements:
  - Identification of all roadway locations where special construction techniques (e.g., directional drilling or night construction) would be used to minimize impacts to traffic flow.
  - Development of circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
  - Scheduling of truck trips outside of peak morning and evening commute hours.
  - Limiting of lane closures during peak hours to the extent possible.
  - Usage of haul routes minimizing truck traffic on local roadways to the extent possible.
  - Inclusion of detours for bicycles and pedestrians in all areas potentially affected by project construction.
  - Installation of traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.
  - Development and implementation of access plans for highly sensitive land uses such as police and fire stations, transit stations, hospitals, and schools. The access plans would be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions can and should be asked to identify detours for emergency vehicles, which will then be posted by the contractor. Notify in advance the facility owner or operator of the timing, location, and duration of construction activities and the locations of detours and lane closures.
  - Storage of construction materials only in designated areas.
  - Coordination with local transit agencies for temporary relocation of routes or bus stops in work zones, as necessary.
- Ensure the rapid repair of transportation infrastructure in the event of an emergency through cooperation among public agencies and by identifying critical infrastructure needs necessary for: a) emergency responders to enter the region, b) evacuation of affected facilities, and c) restoration of utilities.
- Enhance emergency preparedness awareness among public agencies and with the public at large.
- Provision for collaboration in planning, communication, and information sharing before, during, or after a regional emergency through the following:
  - Incorporate strategies and actions pertaining to response and prevention of security incidents and events as part of the on-going regional planning activities.
  - Provide a regional repository of GIS data for use by local agencies in emergency planning, and response, in a standardized format.
  - Enter into mutual aid agreements with other local jurisdictions, in coordination with the California OES, in the event that an event disrupts the jurisdiction's ability to function.

### 3.17.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

**IMPACT TRA-1: Potential to conflict with the established measures of effectiveness for the performance of the circulation system, by increasing the daily VMT, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.**

Implementation of Mitigation Measures **MM-TRA-1(a)(1)** through **MM-TRA-1(a)(8)** and **MM-TRA-1(b)** would reduce impacts to VMT. However, 2040 VMT would still be substantially greater than existing VMT. Therefore, the Plan would result in a significant and unavoidable impact related to VMT.

Impacts related to VHD were determined to be less than significant without mitigation because vehicle hours in delay would improve under the Plan.

Implementation of Mitigation Measures **MM-TRA-1(a)(1)** through **MM-TRA-1(a)(8)** and **MM-TRA-1(b)** would reduce VHD for heavy trucks. However, the 2040 heavy-duty truck VHD would still be substantially greater than the existing VHD. Therefore, the Plan would result in a significant and unavoidable impact related to heavy-duty truck VHD.

Impacts related to worker commute were determined to be less than significant without mitigation as the percentage of trips occurring within 45 minutes would increase under the Plan compared to today.

Impacts related transportation system fatality rates were determined to be less than significant without mitigation because fatality rates are anticipated to decrease.

Direct, indirect, and cumulative impacts related to transportation system injury rates were determined to be less than significant without mitigation because injury rates are anticipated to decrease.

**IMPACT TRA-2: Potential to conflict with an applicable congestion management program, including, but not limited to, VMT and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

Implementation of Mitigation Measures **MM-TRA-1(a)(1)** through **MM-TRA-1(a)(8)**, **MM-TRA-2(a)**, and **MM-TRA-2(b)** would reduce potential impacts related to conflict with an applicable congestion management program. However, due to the substantial growth and large number of projects anticipated in the Plan, direct, indirect, and cumulative impacts would remain significant and unavoidable.

**IMPACT TRA-5: Potential to result in inadequate emergency access.**

Implementation of Mitigation Measures **MM-TRA-5(a)** and **MM-TRA-5(b)** would reduce potential impacts related to inadequate emergency access. However, due to the substantial growth and large number of projects anticipated in the Plan, direct, indirect, and cumulative impacts would remain significant and unavoidable.