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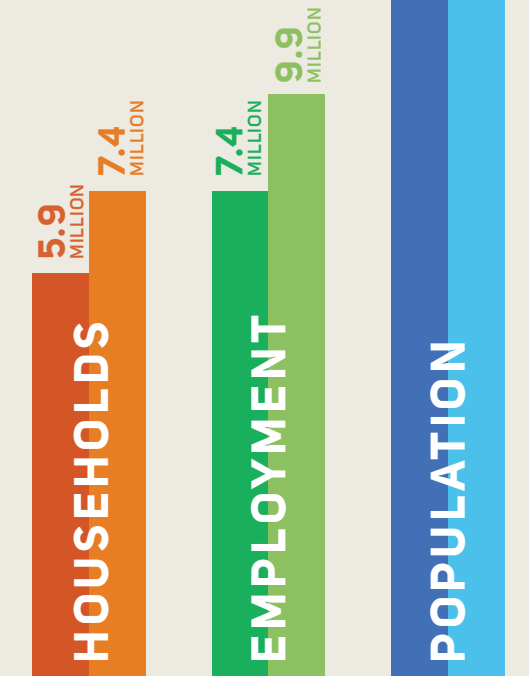
CHALLENGES IN A CHANGING REGION

The challenges facing our region are formidable and require that we strategically plan now. This chapter explores some of our more pressing challenges as we head toward 2040.

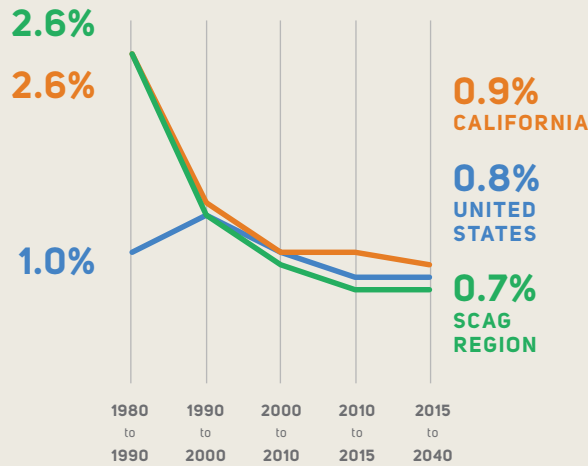
DEMOGRAPHICS

Changes in Ethnic Composition of Population

GROWTH PROJECTIONS
2012 & 2040



Average Annual Population Growth Rate

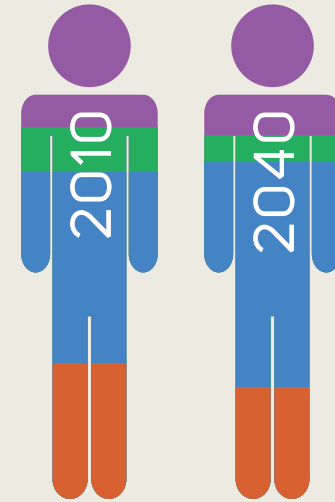


15%
ASIAN & OTHERS*

7%
AFRICAN AMERICAN*

45%
HISPANIC

34%
WHITE*



19%
ASIAN & OTHERS*

5%
AFRICAN AMERICAN*

53%
HISPANIC

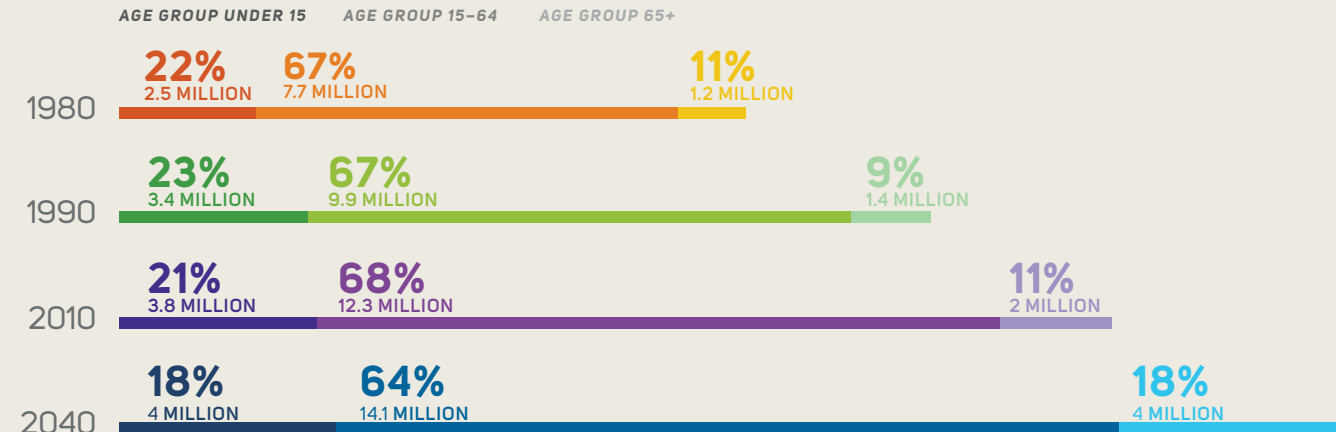
22%
WHITE*

Due to rounding total may not be 100 percent

Source: US Census Bureau, CA DOF, SCAG

* Non-Hispanic | Source: US Census Bureau, SCAG

More Baby Boomers Will Age & Retire



RECESSION, RECOVERY AND CURRENT ECONOMIC CHALLENGES

The Great Recession, which lasted from December 2007 through June 2009, caused massive job losses and had a devastating impact on our region's economic well-being and population growth. Now that the recession is behind us and our region has experienced a decline in unemployment and housing foreclosures, challenges still remain. Though the region's employment levels are now where they were in 2007, our population continues to grow slowly. Also, the region's median household income (adjusted for inflation) has declined as wages have stagnated for a larger population base. This is because of not only the lack of high income jobs for the median household, but the inability to access higher paying jobs that are available but require higher education and/or technical skills. An increase in the number of low-paying jobs, and the resulting lower income, has contributed to more people slipping into poverty.

The health of Southern California's economy depends on the well-being of businesses and households, and a strong and efficient regional transportation system can go a long way in helping businesses and households succeed. An efficient transportation system can lead to an increase in productivity, personal income and ultimately public tax revenues. Businesses depend on a reliable transportation network to create products and services that reach their customers at a reasonable cost. Households depend on an integrated, accessible and dependable transportation network to provide reliable access to education, jobs, shopping and recreational activities. A sustainable, time-efficient and cost-effective transportation system can help neighborhood businesses compete more effectively with those in neighboring jurisdictions. Relieving congestion contributes greatly to future employment growth. For our region to remain a competitor in the global economy, SCAG must continue to invest strategically in transportation infrastructure, while ensuring that it obtains the maximum return on those investments.

CURRENT DEMOGRAPHIC TRENDS

The six counties that comprise our region have experienced significant demographic changes and they can expect even more changes over the next 25 years. The overall population will continue to grow more slowly than in the past, and it will also change in terms of its age distribution and racial and ethnic breakdown. Where people choose to live will also change. More people in our region will increase the demands on our already strained transportation system, as well as on available land for development.

According to the California Department of Finance, our region is now home to 18.9 million people, or about 5.9 percent of the U.S. population and 48.3 percent of California's population. The region is the second-largest metropolitan area in the country, after the New York metropolitan area. If it were a state, our region would rank fifth in the U.S. in terms of the size of its population, just behind New York and ahead of Illinois.

By 2040, the region's population is expected to grow by more than 20 percent to 22 million people—an increase of 3.8 million people. Importantly, we expect the region to grow differently than in the past. Before 1990, population growth was driven largely by both a natural increase and migration. That is, people moved into Southern California from other states and countries and there was additional population growth due to a net increase in the existing population (births minus deaths). Since 1990, however, any gains from immigration have been offset by domestic migration losses and Southern California's population growth has been fueled mostly by a natural increase (more births than deaths)—despite declining fertility rates. This continuing trend is expected to account for most of the Southern California's future population growth by 2040.

As we approach the middle of the century, Southern California's population will still remain racially and ethnically diverse. Currently, we are 47 percent Hispanic, 31 percent non-Hispanic White, 16 percent non-Hispanic Asian/Other and six percent non-Hispanic African American. In particular, the rapid growth of the region's Hispanic population is expected to continue; by 2040 it is projected that 53 percent of the region's residents will be Hispanic. The region's non-Hispanic Asian/Other population is also expected to increase, growing to 19 percent of the population.

Notably, the median age of our region's overall population is projected to rise, with more older people throughout Southern California as we approach the middle of the century. As the Baby Boomer generation continues to age, our region will experience a significant increase in its senior population—a trend expected nationwide. Today, people who are 65 and older represent around 12 percent of the region's total population. But by 2040, the number of seniors will increase to 18 percent (i.e., nearly one in five people in our region). This demographic shift will have major impacts on the locations and types of housing we build and our plans for transportation. This demographic group of seniors covers a wide range of needs; residents in their late sixties and early seventies will have different needs than those in their eighties and nineties. Nonetheless, a key challenge for the region will be to help seniors maintain their independence in their homes and communities.

STATE HIGHWAY SYSTEM PRESERVATION

TOTAL NEEDS =

\$65.8
BILLION

EXISTING FUNDS =

\$26.7
BILLION

GAP =

\$39.0
BILLION

Note: Numbers may not sum to total due to rounding.

As the number and share of seniors are projected to increase, the percentage share of younger people of working age is expected to fall. The ratio of people older than 65 to people of working age (15 to 64) is expected to increase to 28 seniors per 100 working age residents by 2040—up from 16 in 2010. This means that our region could face a labor shortage and a subsequent reduction in tax revenues.

As we plan for the future and face these challenges, we also expect an interesting convergence of interests between two distinct population groups—namely Millennials, who today range in age from 20 to 35, and aging Baby Boomers, who range in age from 51 to 70. Millennials represent 22.4 percent of our region’s total population and rely less on automobiles than have previous generations; they are less apt to acquire drivers licenses, drive fewer miles and conduct fewer overall trips. Research also shows that Millennials often prefer to live in denser, mixed-use urban areas well served by transit, rather than decentralized suburban areas. This trend could explain why there has been increasing demand for new multifamily housing.¹ Millennials also are more likely than other groups to embrace a range of mobility options, including shared cars, biking, transit and walking. These evolving preferences for transportation and housing are significant because Millennials will account for a large part of Southern California’s overall population in 2040. In the near term, their housing and transportation preferences, when combined with the need of Baby Boomers to maintain their independence, could significantly change how Southern California develops.

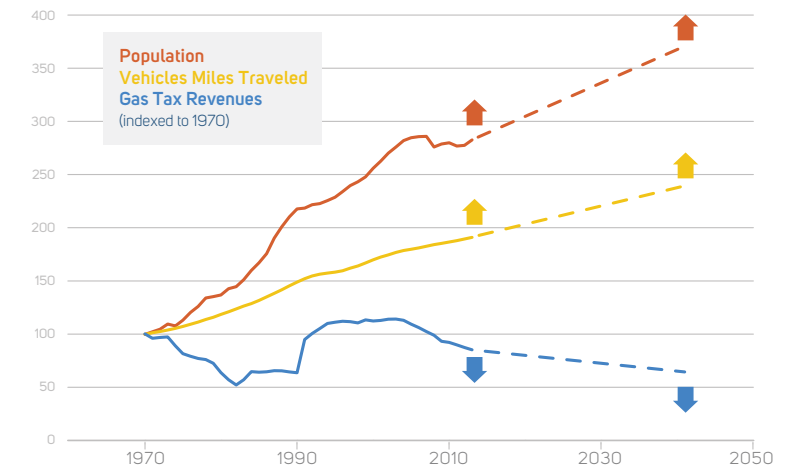
FINANCING TRANSPORTATION

Perhaps our most critical challenge is securing funds for a transportation system that promotes a more sustainable future. The cost of a multimodal transportation system that will serve the region’s projected growth in population, employment and demand for travel surpasses the projected revenues expected from the gas tax—our historic source of transportation funding. The purchasing power of our gas tax revenues is decreasing and will continue on a downward trajectory as tax rates (both state and federal) have not been adjusted in more

than two decades while transportation costs escalate, fuel efficiency improves and the number of alternative-fuel vehicles continues to grow. **FIGURE 3.1** highlights the decline in gas tax revenues, in relation to the growing population and demand for travel.

To backfill limited state and federal gas tax revenues, our region has continued to rely on local revenues to meet transportation needs. In fact, 71 percent of SCAG’s core revenues are local revenues. Seven sales tax measures have been adopted throughout the region since the 1980s, so the burden of raising tax dollars has shifted significantly to local agencies. In reality, we need a stronger state and federal commitment to raising tax dollars for the Southern California transportation system—given its prominence and importance to the state and national economy, particularly when it comes to the movement of goods. Our region’s transportation system should be able to rely on more consistent tax revenues raised at all levels of government.

FIGURE 3.1 CALIFORNIA POPULATION, TRAVEL AND GAS TAX REVENUE TRENDS



Source: Caltrans, California Department of Finance, California State Board of Equalization, White House Office of Management and Budget

¹ Dutzik, T., Inglis, J., & Baxandall, Ph.D., P. (2014). Millennials in Motion: Changing Travel Habits of Young Americans and the Implications for Public Policy. U.S. PIRG Education Fund.

TABLE 3.1 PROPOSED 2016–2040 RTP/SCS GROWTH FORECAST

REGION	POPULATION				HOUSEHOLDS				EMPLOYMENT			
	2012	2020	2035	2040	2012	2020	2035	2040	2012	2020	2035	2040
IMPERIAL	180,000	234,000	272,000	282,000	49,000	72,000	89,000	92,000	59,000	102,000	121,000	125,000
LOS ANGELES	9,923,000	10,326,000	11,145,000	11,514,000	3,257,000	3,494,000	3,809,000	3,946,000	4,246,000	4,662,000	5,062,000	5,226,000
ORANGE	3,072,000	3,271,000	3,431,000	3,461,000	999,000	1,075,000	1,135,000	1,152,000	1,526,000	1,730,000	1,870,000	1,899,000
RIVERSIDE	2,245,000	2,480,000	3,055,000	3,183,000	694,000	802,000	1,009,000	1,055,000	617,000	849,000	1,112,000	1,175,000
SAN BERNARDINO	2,068,000	2,197,000	2,638,000	2,731,000	615,000	687,000	825,000	854,000	659,000	789,000	998,000	1,028,000
VENTURA	835,000	886,000	945,000	966,000	269,000	285,000	306,000	312,000	332,000	375,000	409,000	420,000
SCAG	18,322,000	19,395,000	21,486,000	22,138,000	5,885,000	6,415,000	7,172,000	7,412,000	7,440,000	8,507,000	9,572,000	9,872,000

Source: SCAG

Note: All figures are rounded to the nearest 1,000. The County numbers may not sum to the region total due to rounding.

IMPORTANCE OF SYSTEM PRESERVATION

We Will Pay More—If We Do Not Fix-it-First

EACH \$1 SPENT HERE...

Seals, Thin Overlays (Preventive Maintenance)

SURFACE DAMAGE

4–7 Years



DELAYS SPENDING \$3 HERE...

Thicker Overlays

MINOR DAMAGE

6–7 Years



DELAYS SPENDING \$8 HERE...

Rehabilitation/Reconstruction

MAJOR DAMAGE

10+ Years



Source: 2013 State of the Pavement Report

The State of Disrepair

17%

OF HIGHWAYS ARE DISTRESSED

6%

OF LOCAL ROADS IN FAILED CONDITION IN 2012

25%

OF LOCAL ROADS WILL BE IN **FAILED CONDITION** IN 2022 UNDER CURRENT (2012) FUNDING

18%

OF BRIDGES RATED AS **FUNCTIONALLY OBSOLETE**

10%

OF BRIDGES RATED AS **STRUCTURALLY DEFICIENT**



of all proposed expenditures through **2040** are allocated to highway & arterial system operations & maintenance in the **2016 RTP/SCS**

Source: Federal Highway Administration National Bridge Inventory & 2014 State Highway Operation & Protection Program

A Bumpy & Costly Ride

Annual Vehicle Maintenance Costs by Metropolitan Area Due to Poor Road Conditions



Bumpy Roads Ahead Study & TRIP, A National Transportation Research Group, 2013

PRESERVING OUR TRANSPORTATION SYSTEM

Southern California's transportation system is in an unfortunate state of disrepair due to decades of underinvestment. Quite simply, investments to preserve the system have not kept pace with the demands placed on it. The inevitable consequence of this deferred maintenance is poor road pavement, which is particularly evident on our highways and local arterials. The rate of deterioration is expected to accelerate significantly as maintenance continues to be deferred. And as maintenance is deferred, the cost of bringing these assets back to a state of good repair is projected to grow exponentially. SCAG estimates that the cost to maintain our transportation system at current conditions, which is far from ideal, will be in the tens of billions of dollars beyond what is currently committed. For instance, the gap between needs and existing funding for the State Highway System through 2040 is now estimated at \$39.0 billion. It should be noted that Caltrans is the owner and operator of the State Highway System and is responsible for funding the operation and maintenance of state highways, while local jurisdictions are responsible for the funding of operations and maintenance of local arterials.

Moving forward, the region needs to continue to "Fix-it-First" as a top priority—that is, focusing the necessary funds on preserving the existing transportation network while strategic investments are made in system expansions. Failing to adequately invest in the preservation of Southern California's roads, highways, bridges, railways, bicycle and pedestrian facilities, and transit infrastructure will only lead to further deterioration, which has the potential to worsen our congestion challenges. In addition, potholes and other imperfections in the roadway come with real costs to motorists, estimated by one study at more than \$700 per household each year. The region's transportation system represents billions of dollars of investments that must be protected in order to serve current and future generations. The loss of even a small fraction of these assets could significantly compromise the region's overall mobility.

Preservation of the region's transit system, for example, is more important than ever as Baby Boomers, one of the fastest growing groups requiring transportation services, age. The region needs to plan for this projected increase in seniors with increased funding for transit and paratransit maintenance and preservation. Preserving infrastructure that encourages active transportation, such as walking and biking, is also important for maintaining mobility for those unable or uninterested in driving. It is also a cost-effective way to increase the number of roadway users without increasing roadway congestion.

MOVING GOODS EFFICIENTLY IN A HUGE AND COMPLEX REGION

The smooth and efficient movement of goods is critical to our regional economy, particularly as our region continues to recover from the recession. A number of key trends and drivers are expected to impact our region's goods movement system. Some of these, along with associated challenges, are highlighted below.

Population and Employment Growth: The regional population and rate of employment in our region are key indicators of economic health, and both are projected to grow rapidly over the next two decades. Our region's population growth is expected to fuel consumer demand for products and the goods movement services that provide them. This increased demand will drive stronger growth in freight traffic on already constrained highways and rail lines. Truck volumes on many key corridors are anticipated to grow substantially, as shown in [EXHIBIT 3.1](#). Truck and auto delays will increase, as will truck-involved accidents. Levels of harmful emissions also will rise. The increase in rail volumes is expected to exacerbate vehicle hours of delay at rail and highway crossings.² Moreover, growing demand for commuter rail services on rail lines owned by the freight railroads will create additional capacity challenges.

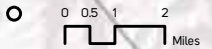
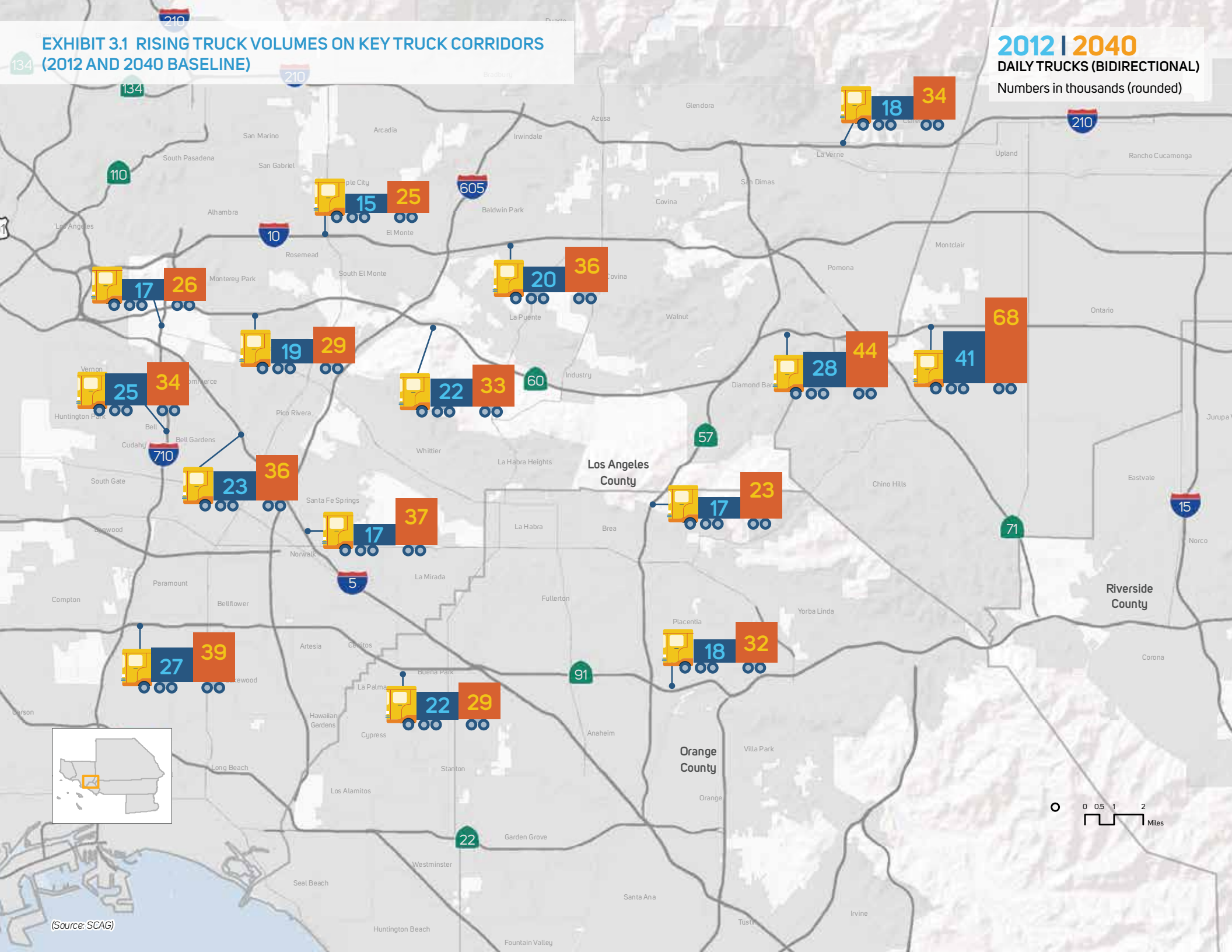
Continued Growth in International Trade: The San Pedro Bay Ports anticipate cargo volumes to grow to 36 million containers by 2040—despite increasing competition with other North American ports, the expansion of the Panama Canal and more recent delays at port terminals due to labor negotiations. Port of Hueneme in Ventura County is also positioned to grow as a preferred port for specialized cargo such as automobiles, break bulk and military cargo. This growth will place further demands on marine terminal facilities, highway connections and rail intermodal terminals. If port-related rail traffic and commuter demands are to be met, mainline rail capacity improvements will be required as well. Meanwhile, mitigating the impacts of increased train traffic in communities will continue to be a challenge.

Logistics Epicenter: Southern California is the nation's epicenter for distribution and logistics activity, and it will continue to be a significant source of well-paying jobs in the region through 2040. The region has close to 1.2 billion square feet of facility space for warehousing, distribution, cold storage and truck terminals.² Nearly 1.1 billion square feet of this space is occupied. By 2040,

² CoStar Realty Information, Inc. www.costar.com, based on November 2014 data downloads.

**EXHIBIT 3.1 RISING TRUCK VOLUMES ON KEY TRUCK CORRIDORS
(2012 AND 2040 BASELINE)**

2012 | 2040
DAILY TRUCKS (BIDIRECTIONAL)
 Numbers in thousands (rounded)



(Source: SCAG)

the region may experience a shortfall of more than 527 million square feet of warehouse space, relative to demand.³

Air Quality Issues: Goods movement emissions contribute to regional air pollution problems (e.g., NOx and PM 2.5) and pose public health challenges. Emissions generated by the movement of goods are being reduced through efforts such as the San Pedro Bay Ports Clean Air Action Plan, as well as regulations such as the statewide Heavy Duty Truck and Bus Rule. But these reductions alone are unlikely to be sufficient to meet regional air quality goals.

Currently, much of the SCAG region does not meet federal ozone and fine particulate air quality standards as mandated by the federal Clean Air Act. The South Coast Air Basin has a deadline to reduce ozone concentrations to 80 parts per billion (ppb) by 2023 under the revoked 1997 eight-hour ozone standards, and further down to 75 ppb by 2031 under the current 2008 eight-hour ozone standards. Moreover, new federal ozone standards are expected to be finalized by the Environmental Protection Agency (EPA) in the 2015/2016 time frame, with an expected new attainment deadline of 2037. This means that NOx emissions in the South Coast Air Basin must be reduced 65 percent by 2023 and 75 percent (beyond projected 2023 emissions) by 2032 in order to attain federal ozone standards.⁴ Additional attainment deadlines are in effect for PM 2.5.

Reducing greenhouse gas emissions is also a priority, as determined by the landmark California legislation Assembly Bill 32 and Senate Bill 375, and the more recent Executive Order B-30-15 signed by Governor Brown in April 2015. Several state measures have been implemented to reduce greenhouse gas emissions, with some implications for freight. These include the Low Carbon Fuel Standard and the inclusion of greenhouse gas emissions from transportation fuels under the California's Cap-and-Trade Program. Additional state programs are under development as part of the state's Sustainable Freight Strategy (SFS).

HOUSING AFFORDABILITY, GENTRIFICATION AND DISPLACEMENT

The cost of housing in Southern California is among the highest in the nation. Across our region, home prices and rents continue to rise, and the region continues to experience a shortage of affordable housing. The California Association of Realtors' (CAR) affordability index, which measures the percentage of households that can afford to purchase a median priced home in the state, remains around 35 percent for the SCAG region. Nearly 55 percent of renters and 45 percent of homeowners spend more than 30 percent of their income on rent or mortgage payments.

Affordability is becoming a significant issue in many communities, particularly in urban areas after the implementation of a new rail line, transit station or other major public investment. Housing unaffordability can undermine the overall goals of the RTP/SCS because it can contribute to suburban sprawl, longer job commutes and higher greenhouse gas emissions. As wealthier "outsiders" move into established communities, the increased demand for housing and business/retail space can lead to escalating costs for residential and commercial real estate. Many traditionally low-income, urban core communities at risk for gentrification are seeing dramatic changes in housing, retail stores, schools and other neighborhood amenities.

The region's overall affordability issues are particularly troubling because the region has a disproportionately high concentration of low-income and minority populations that are unemployed, live under the poverty line, have lower educational attainment, and live in close proximity to environmentally stressed areas. The region accounts for 67 percent of Californians who live in disadvantaged communities, as defined by Senate Bill 535, which requires investment in disadvantaged communities from California's Cap-and-Trade revenues. This represents more than 6.36 million people. Investments in transportation and other public infrastructure, affordable housing, economic development and job creation can help these communities in need.

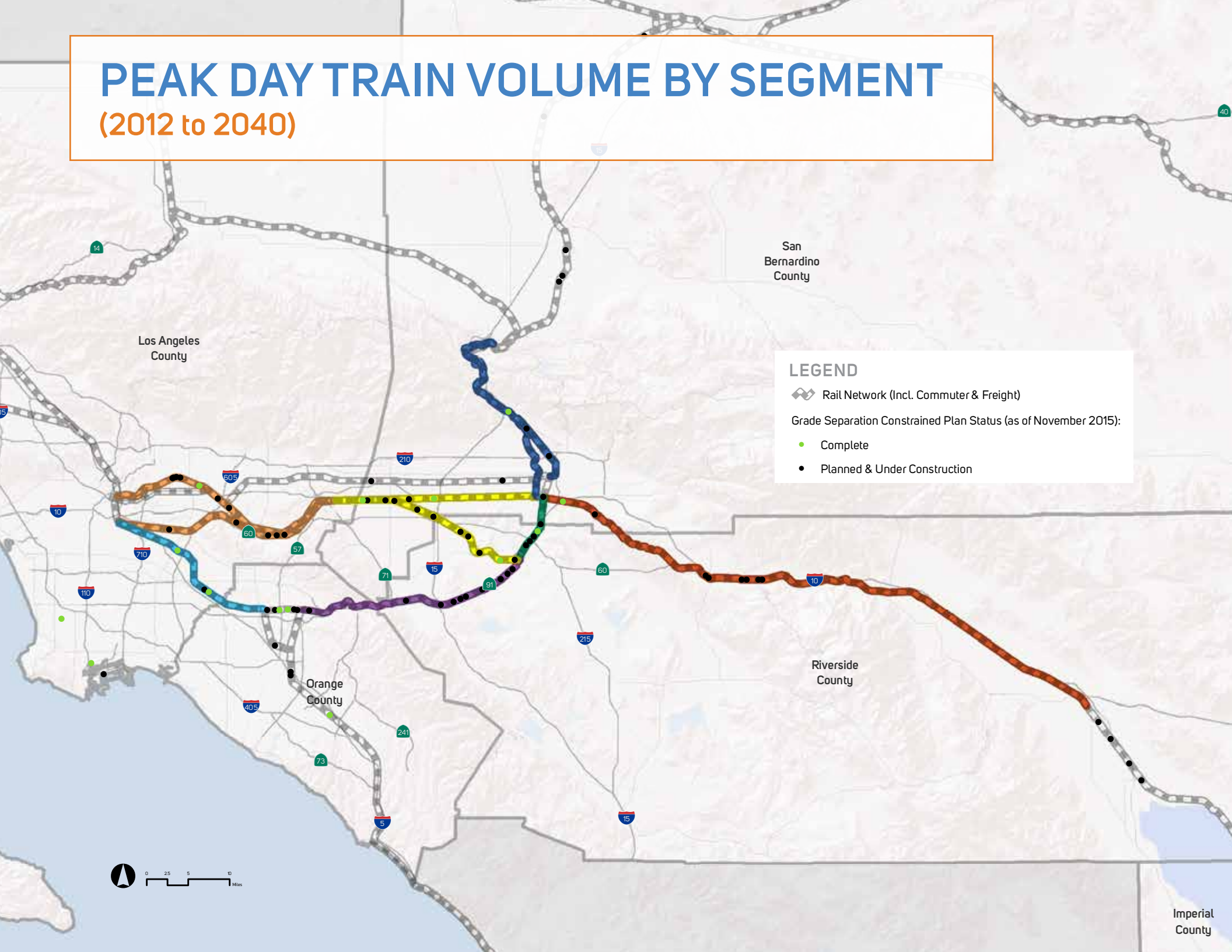
As our region builds communities that are more compact and more transit-oriented, regional greenhouse gas emissions are anticipated to decline and residents from a variety of income levels will continue to make housing choices that allow them to use an increasing number of mobility options. The overall quality of life is expected to increase for many people. Transit investments and strategies will be most effective if coordinated with land use strategies,

³ Industrial Warehousing in the SCAG Region Study, Task 4 Warehousing Demand Forecast.

⁴ Preliminary Draft AQMD Air Quality Management Plan White Paper, Goods Movement, June 2015.

PEAK DAY TRAIN VOLUME BY SEGMENT

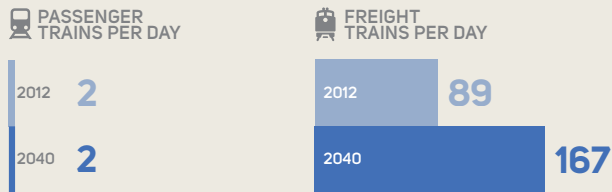
(2012 to 2040)



RAIL SEGMENTS

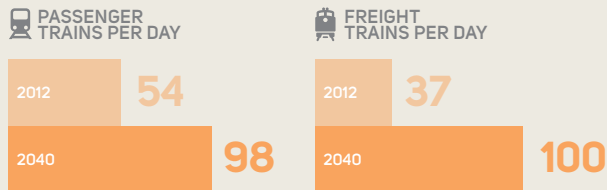
BNSF Cajon Subdivision
San Bernardino-Silverwood PLUS

UPRR Mojave Subdivision
W. Colton-Silverwood



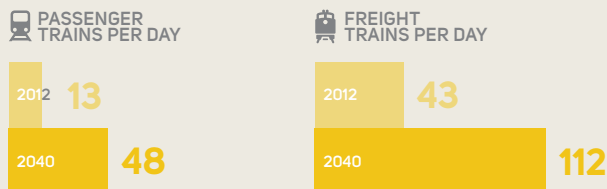
UPRR LA Subdivision
East LA-Pomona PLUS

UP Alhambra Subdivision
Yuma Jct. - Pomona

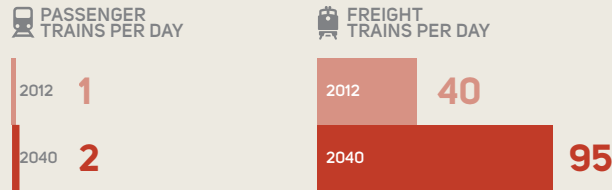


UP LA Subdivision
Pomona-W. Riverside PLUS

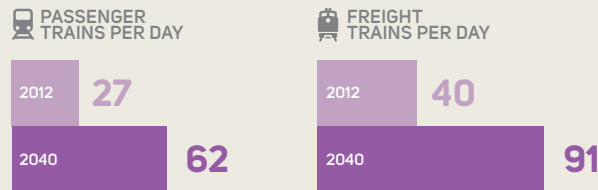
UPRR Alhambra Subdivision
Pomona-W. Colton



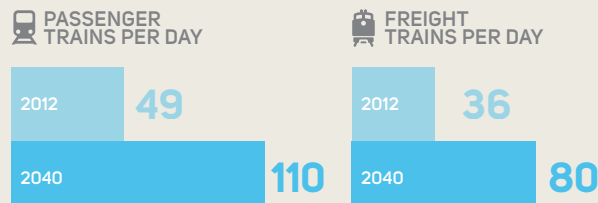
UPRR Yuma Subdivision
Colton - Indio



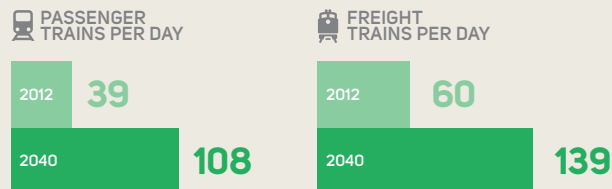
BNSF San Bernardino Subdivision
Atwood-W. Riverside



BNSF San Bernardino Subdivision
Hobart-Fullerton



BNSF San Bernardino Subdivision
W. Riverside-Colton



GRADE SEPARATION PROJECTS

24
CURRENTLY UNDER CONSTRUCTION

+

42
PLANNED

WOULD SAVE AN ESTIMATED

5,500
DAILY VEHICLE HOURS OF DELAY IN 2040



AFFORDABLE HOUSING TOOLBOX FOR LOCAL JURISDICTIONS

1. Streamline the residential project permitting process
2. Reduced fees or waivers for affordable housing development
3. Reduce parking requirements, especially in transit-rich areas
4. Adopt an affordable housing overlay zone
5. Preservation of mobile homes
6. Establish a housing trust fund
7. Add inclusionary zoning to the housing ordinance
8. Density Bonus ordinance
9. Increase density in transit-rich areas
10. Link a housing program with other policies such as active transportation and public health
11. Consider new building types and models, such as accessory dwelling units or small units
12. Establish a Community Revitalization and Investment Authority (per AB 2) or Enhanced Infrastructure Financing District (per SB 628)

including transit-oriented development and providing affordable housing. However, people from low-income communities near new transit infrastructure may face displacement. Generally, displacement refers to a situation in which gentrification places pressure (through eviction or because of market forces) on people from existing communities to relocate to more affordable places. If those communities are priced out and move away from newly constructed transit facilities, those facilities lose the very people who are more likely to use

them. Research suggests that lower income residents generate fewer vehicle miles traveled (VMT) and demonstrate the largest relative VMT reductions with location efficiency.⁵

This Plan's vision and goals include ensuring that regionwide benefits improve social equity—that is, the benefits of our Plan are realized by all populations in our Southern California region while its burdens are not carried disproportionately by one group over another. Providing people throughout our region with access to high quality transit and ensuring that they also have access to more affordable housing are related objectives. Currently, SCAG is partnering with the state and other regional agencies to study issues related to displacement and travel behavior near transit. Those results will inform future regional policies. Community advocates and other housing stakeholders are working to ensure that investments in traditionally low-income communities benefit existing residents and businesses instead of dividing communities. SCAG encourages municipalities to pursue strategies that avoid displacement, especially near transit stations, and ensure that existing communities retain their housing options.

The integration of affordable housing development with the goals of Senate Bill 375 has been the focus of several recently enacted state legislative bills. Bills such as Assembly Bill 2222 (Nazarian) and Assembly Bill 313 (Atkins) aim to preserve affordable housing in rapidly changing development environments, such as in projects that apply for local density bonuses and within Enhanced Infrastructure Financing Districts, respectively. Other bills, such as Assembly Bill 744 (Chau), reduce parking requirements for housing designed for low income households and seniors and meet certain thresholds for transit access, which not only lower the cost of building affordable housing but also encourages the development of affordable housing near transit—a clear goal of Senate Bill 375.

On a local level, there are a variety of tools available for jurisdictions to consider to increase the supply of affordable housing available (please see Affordable Housing Toolbox graphic). These tools are designed to reduce the cost of building affordable housing or establish a funding source for preserving or building affordable housing. While there is not a “one size fits all” approach, SCAG encourages jurisdictions to consider these strategies in order to address local housing affordability challenges.

⁵ Newmark, Ph.D. G., & Haas Ph.D., P. (2015). Income, Location Efficiency, and VMT: Affordable Housing as a Climate Strategy. San Francisco: California Housing Partnership.

Additionally, there are a number of statewide programs and resources to assist local jurisdictions in funding the production of affordable housing. As mentioned in earlier chapters, there are several new funding opportunities to help regions and jurisdictions promote affordable housing. California's Affordable Housing Sustainable Communities (AHSC) program, funded by the statewide Greenhouse Gas Reduction Fund created by Assembly Bill 32, provides funding to certain projects that provide affordable housing through a competitive grant process. Moreover, other programs such as the California Department of Housing and Community Development (HCD)'s Housing-related Parks Program, provides funds to local jurisdictions to maintain and rehabilitate parks and open space based on the number of affordable housing units built. Other opportunities to build housing also include Senate Bill 628 (Beall) and Assembly Bill 2 (Alejo), which allow jurisdictions to establish special reinvestment districts to develop affordable housing and supportive infrastructure and amenities. As the regional MPO, SCAG is committed to providing jurisdictions and stakeholders applying for funding opportunities with data, technical and policy support in order to further the progress of establishing more affordable housing in the region aligned with the goals of the RTP/SCS.

IMPROVING PUBLIC HEALTH

Today, many people in our region suffer from poor health due to chronic diseases related to poor air quality and physical inactivity. Chronic diseases including heart disease, stroke, cancer, chronic lower respiratory disease and diabetes are responsible for 72 percent of all deaths in our region, according to the California Department of Public Health. Furthermore, more than 60 percent of residents are overweight or obese, more than eight percent have diabetes, 27 percent suffer from hypertension and more than 12 percent suffer from asthma, according to the California Health Interview Survey. Health care costs resulting from being physically inactive, obese and overweight and from asthma cost our Southern California region billions of dollars annually in medical expenses, lost life and lost productivity, research shows.⁶ For example, one study showed that health care costs resulting from physical inactivity and obesity reached an estimated \$41.2 billion in 2006 in California.

A growing body of evidence shows that how a neighborhood is laid out and linked to transportation options can shape the lifestyles that people have—

how physically active they are and how safe their everyday lives can be.⁷ As a result, regional planning for land use and transportation across the U.S. has increasingly incorporated strategies to improve public health. MPOs such as SCAG are focusing on improving transportation safety, offering people more opportunities to walk, bike and embrace other forms of active transportation, improve first/last mile connections to transit, and improve access to natural lands. They are also pursuing strategies to make neighborhoods more walkable, improve air quality, help people cope with climate change impacts such as extreme heat events, improve accessibility to essential destinations such as hospitals and schools, and work overall toward a transportation system and land use patterns that promote regional economic strength.

One of the challenges that SCAG faces as it strives to improve public health is the sheer size and diversity of our region. Public health varies widely by geographic location, income and race. There is no one size fits all approach to meeting this complex challenge. It requires flexibility and creativity to ensure that initiatives are effective in both rural and urban areas.

To gain more insight on the connection between how we use land and public health, SCAG has identified seven focus areas for further analysis: access to essential destinations, affordable housing, air quality, climate adaptation, economic opportunity, physical activity and transportation safety. For more details, see the Plan's Public Health Appendix.

CONFRONTING A CHANGING ENVIRONMENT

The consequences of continued climate change already are impacting California and more intensified changes are expected. Ongoing drought conditions, water shortages due to less rainfall as well as declining snowpack in our mountains, and an agriculture industry in crisis have become hard realities in recent years. Climate change is transforming the state's natural habitats and overall biodiversity. Continued changes are expected to impact coastlines as sea levels rise and storm surges grow more destructive. Forests will continue to be impacted by drought and wildfire. Climate change also will impact how we use energy and the quality of public health. Our statewide transportation

⁶ Peck, C., Logan, J., Maizlish, N., & Van Court, J. (2013). *The Burden of Chronic Disease and Injury: California*. 2013. California Department of Public Health.

⁷ Frank, L. D., Schmid, T. L., Sallis, J. F., Chapman, J., & Saelens, B. E. (2005). "Linking Objectively Measured Physical Activity with Objectively Measured Urban Form: Findings from SMARTRAQ." *American Journal of Preventive Medicine*, 28(2S2), 117-125.

system will experience new challenges as well as the global and regional climate continues to change.⁸

Researchers project that both coastal and inland Southern California will see many more days of extreme heat, with temperatures exceeding 95 degrees Fahrenheit.⁹ This is expected to increase heat-related mortality, lower labor productivity and boost demands for energy. Meanwhile, changing patterns of rain and snowfall—including the amount, frequency and intensity of precipitation across the state—will have serious long-term impacts on the supply and quality of water in Southern California.

It is clear that our region needs to prepare for these projected challenges and a big part of that effort is to make individual communities and the region as a whole more resilient to the consequences of climate change. “Climate resiliency” can be defined as the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization and the capacity to adapt to stress and change.¹⁰ Without advance planning and effective action, the consequences of climate change will negatively impact our transportation system, our economy and our everyday lives.

The state’s Adaptive Planning Guide encourages our region and others across California to evaluate the local impacts of climate change. These impacts include increased temperatures, reduced precipitation, rising sea levels, a fall in tourism, reduced water supplies, a heightened risk of wildfire, threats to public health related to degraded air quality and heat, stresses on endangered and threatened species, diminished snowpack and coastal erosion.¹¹ Our region is still facing a serious drought that began in 2012 and its length and severity has led to mandatory water restrictions for the first time in state history. At the same time, state programs designed to meet future climate challenges proactively are

underway. These include initiatives such as the Safeguarding California¹² plan, as well as Governor Brown’s Executive Order calling for new actions to mitigate and adapt to the impacts of climate change. These initiatives present regional agencies such as SCAG with opportunities to show leadership as the state confronts climate change challenges.

Continued climate change will impact our region in various ways and we are now getting a clearer picture of how it will impact the day-to-day lives of those of us who are most vulnerable—such as the poor, the elderly and the disabled. Responding effectively to climate change requires us to cooperate more with one another, to use limited resources more wisely, and to think more creatively to align our goals. The impacts of climate change, like other environmental challenges, are expected to hit hardest those communities that are least equipped to handle them. Particularly in Southern California, public agencies must focus on safeguarding people who are most vulnerable to extreme heat and air pollution. The elderly and children under five years old are most vulnerable to heat-related illness.¹³ As our demographics change, proactive planning that ensures the health of these distinct populations will be increasingly important.

Our region certainly cannot fight climate change alone. It will be a global effort. However, it is up to us to make sure we can adapt to climate change and mitigate its impacts in our own region. We cannot expect anyone else to do this work for us. Long-range regional planning inherently recognizes the relationship between today’s investments and tomorrow’s outcomes. Confronting climate change and building climate resilient communities is, at its core, an exercise in smart planning. We will need to build on actions we have already taken by integrating considerations of climate and sustainability into the approaches we take to grow our economy, protect the environment and public health, and plan for the future.

⁸ California Resources Agency. (n.d.) Fact Sheets on California Climate Risks [Fact Sheet]. Retrieved from http://resources.ca.gov/docs/climate/Safeguarding_Handout_All.pdf.

⁹ Rogers, J., Barba, J., & Kinniburgh, F. (2015). From Boom to Bust? Climate Risk in the Golden State. Risky Business Project. Accessed at <http://riskybusiness.org/uploads/files/California-Report-WEB-3-30-15.pdf>.

¹⁰ Safeguarding California: Reducing Climate Risk. (2014). California Natural Resources Agency. Accessed at http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

¹¹ California Adaptation Planning Guide: Planning for Adaptive Communities. (2012). California Emergency Management Agency & California Natural Resources Agency. Accessed at http://resources.ca.gov/docs/climate/01APG_Planning_for_Adaptive_Communities.pdf.

¹² California Adaptation Planning Guide: Planning for Adaptive Communities. (2012). California Emergency Management Agency & California Natural Resources Agency. Accessed at http://resources.ca.gov/docs/climate/01APG_Planning_for_Adaptive_Communities.pdf.

¹³ California Adaptation Planning Guide: Planning for Adaptive Communities. (2012). California Emergency Management Agency & California Natural Resources Agency.

CONCLUSION

We will now turn to a discussion of how SCAG developed the 2016 RTP/SCS, with a particular emphasis on the extensive public outreach that SCAG conducted to develop the best Plan possible to address our challenges. The 2016 RTP/SCS, after all, is the region's Plan for the future. By design, it reflects the region's needs, priorities and desires—as well as the statutory requirements of the State of California and the federal government.