PLAN

PERFORMANCE

ENVIRONMENTAL JUSTICE

2016
2040
RTPSCS

APPENDIX

PLAN PERFORMANCE | ENVIRONMENTAL JUSTICE
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ENVIRONMENTAL JUSTICE

INTRODUCTION

The concept of environmental justice is about equal and fair access to a healthy environment, with the goal of protecting minority and low-income communities from incurring disproportionate negative environmental impacts. Southern California, in its unique demographic and geographic diversity, presents a keen opportunity to promote environmental justice in the administration of transportation and land use decisions that affect residents' daily lives. The Southern California Association of Governments' (SCAG) 2016-2040 Regional Transportation Plan and Sustainable Communities Strategy (2016 RTP/SCS or Plan) is designed to create region-wide benefits that are distributed equitably, while ensuring that any one group does not carry the burdens of development disproportionately. It's particularly important that the Plan considers the consequences of transportation projects on low-income and minority communities, and minimizes negative impacts. This Appendix will address the potential impacts of the 2016 RTP/SCS on low income and minority population groups, and will also examine historical trends related to environmental justice throughout the region.

TITLE VI AND ENVIRONMENTAL JUSTICE OVERVIEW

Consideration of environmental justice in the transportation planning process stems from Title VI of the Civil Rights Act of 1964 42 U.S.C. 2000 d et seq. (Title VI). Title VI establishes the need for transportation agencies to disclose to the public the benefits and burdens of proposed projects on minority populations. Title VI states that "No person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Additionally, Title VI not only bars intentional discrimination, but also unjustified disparate impact discrimination. Disparate impacts result from policies and practices that are neutral on their face (i.e., there is no evidence of intentional discrimination), but have the effect of discrimination on protected groups.

In the 1990s, the federal executive branch issued orders on environmental justice that amplified Title VI, in part by providing protections on the basis of income as well as race. These directives, which included President Clinton's Executive Order 12898 (1994) and subsequent U.S. Department of Transportation (US DOT) and Federal Highway Administration (FHWA) orders (1997 and 1998, respectively), along with a 1999 US DOT guidance memorandum, ordered every federal agency to make environmental justice part of its mission by identifying and addressing the effects of all programs, policies and activities on underrepresented groups and low-income populations. Reinforcing Title VI, these measures ensure that every federally funded project nationwide consider the human environment when undertaking the planning and decision-making process.

On August 4, 2011, 17 federal agencies signed the "Memorandum of Understanding on Environmental Justice and Executive Order 12898." The signatories, including the US DOT, agreed to develop environmental justice strategies to protect the health of people living in communities overburdened by pollution and to provide the public with annual progress reports on their efforts. The MOU advances agency responsibilities outlined in the 1994 Executive Order 12898, and directs each of the federal agencies to make environmental justice part of its mission and to work with other agencies on environmental justice issues as members of the Interagency Working Group on environmental justice.

In response to this MOU, US DOT revised its environmental justice strategy. The revisions reinforce the US DOT's programs and policies related to environmental justice and strengthen its efforts to outreach to minority and low-income populations. In addition, the Federal Transit Authority (FTA) issued two Circulars on Title VI and environmental justice in 2011 and 2012 to clarify the requirements and offer guidance. FTA Circular 4702.1A, Title VI Requirements and Guidelines for Federal Transit Administration Recipients (Docket No. FTA-2011-0054) provides information required in the Title VI Program, changes the reporting requirement from every four years to every three years, and adds a requirement for mapping and charts to analyze the impacts of the distribution of state and federal public transportation funds. The FTA Circular 4703.1, Environmental Justice Policy Guidance for Federal Transit Administration Recipients (Docket No. FTA-2011-0055) provides recommendations to MPOs (and other recipients of FTA funds) on how to fully engage environmental justice populations in the public transportation decision-making process; how to determine whether environmental justice populations would be subjected to disproportionately high and adverse human health or environmental effects as a result of a transportation plan, project, or activity; and how to avoid, minimize or mitigate these effects.

In addition to Federal requirements, SCAG must comply with California Government Code Section 11135, which states that, "no person in the State of California shall, on the basis of race, national origin, ethnic group identification, religion, age, sex, sexual orientation, color, or disability, be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency that is funded directly by the state, or receives any financial assistance from the state." California Senate Bill 115, passed in 1999, also established the definition of "environmental justice" in the California Government Code as "the fair treatment of people of all races, cultures and income with respect to development, adoption and implementation of environmental laws, regulations and policies."

The State of California also provides guidance for those involved in transportation decision-making to address environmental justice. In 2003, the California Department of Transportation (Caltrans) published the Desk Guide on environmental justice in Transportation Planning and Investments to provide information and examples of ways to

promote environmental justice. The Desk Guide identified requirements for public agencies, guidance on impact analyses, recommendations for public involvement and mitigation.

Finally, under Senate Bill 375 (SB 375), SCAG is required to include a Sustainable Communities Strategy within the 2016 RTP/SCS. The 2016 RTP/SCS represents the collective vision of the six counties in the SCAG region, and provides a framework for the future development of our regional transportation system. Through SB 375, the California Air Resources Board (ARB) established per-capita targets for greenhouse gas emissions reduction for cars and light trucks for the SCS. The targets for the SCAG region are eight percent in 2020 and 13 percent in 2035, from 2005 levels. As part of the early target setting process, the ARB appointed a Regional Target Advisory Committee (RTAC) to recommend factors to be considered and methodologies to be used for setting the targets. The RTAC report was finalized in September 2009 and included a recommendation on housing and social equity. The report recognized the impact that policies to reduce Vehicle Miles Traveled (VMT) could have on social equity, specifically calling for appropriately located affordable housing to match local wage levels. The RTAC further recommended that displacement and gentrification, as a result of changing land uses and increased housing costs, should be addressed and specifically avoided to the extent possible in the SCS. As a result of the RTAC recommendation and input from our environmental justice stakeholders, SCAG updated its methodology in the 2012 RTP/SCS to include additional areas of analysis, including gentrification and displacement, and continues this analysis in the 2016 RTP/SCS.

SCAG'S ENVIRONMENTAL JUSTICE POLICY AND PROGRAM

As a government agency that receives federal funding, SCAG is required to conduct an environmental justice analysis for its 2016 RTP/SCS. SCAG's environmental justice program includes two main elements: technical analysis and public outreach. In the regional transportation-planning context, SCAG's role is to 1) ensure that when transportation decisions are made, low-income and minority communities have ample opportunity to participate in the decision-making process, and 2) identify whether such communities receive an equitable distribution of benefits and not a disproportionate share of burdens. As such, SCAG adheres to all federal and state directives on environmental justice and is committed to being a leader in the analysis of the environmental, health, social and economic impacts of the 2016 RTP/SCS on minority and low-income populations in the SCAG region. As part of SCAG's environmental justice program, the agency also:

- Provides early and meaningful public access to decision-making processes for all interested parties, including minority and low-income populations.

- Seeks out and considers the input of traditionally underrepresented groups, such as minority and low-income populations, in the regional transportation planning process.

- When disproportionately high and adverse impacts on minority or low-income populations are identified, SCAG takes steps to propose mitigation measures or consider alternative approaches for the SCAG region.

- Continues to evaluate and respond to environmental justice issues that arise during and after the implementation of SCAG's regional plans.

Beyond the definitions outlined in federal law, executive order and state law, SCAG also considers other population characteristics in developing its environmental justice analysis. Factors such as children, elderly populations, vehicle-less households, individuals without a high school diploma, and areas designated as disadvantaged by Senate Bill 535 (DeLeon) are also included as part of SCAG's environmental justice analysis, along with several other factors.

OUTREACH EFFORTS

A key component of the 2016 RTP/SCS development process is seeking public participation. Public input from our environmental justice stakeholders helped SCAG prioritize and address needs in the region. As part of the environmental justice outreach effort, SCAG compiled a list of key stakeholders to be contacted regarding the 2016 RTP/SCS programs and policies. This list is comprised of more than 600 individuals and organizations that were involved with the 2012 RTP/SCS, as well as additional stakeholders such as advocacy groups concerning environment, poverty, public health, and housing; public agencies; and other involved groups. SCAG maintains this list regularly and allows interested stakeholders to sign up online for the mailing list.

SCAG held five environmental justice workshops on the 2016 RTP/SCS to ensure that all members of the public had an opportunity to participate meaningfully in the planning process. To maximize participation from a wide range of stakeholders, two of the workshops were held in the Inland Empire region and four of the five workshops were held in the evening hours to accommodate work schedules and other circumstances. Workshops held in the SCAG Los Angeles office were also available via videoconference at the other five SCAG regional offices to ensure that geography would not be a limiting factor for participation. Each workshop was attended by at least 25 participants who represented a variety of stakeholders and environmental justice interests. The workshop dates and locations were: November 20, 2014 (SCAG–Los Angeles); April 15, 2015 (Fairmount Park–City of Riverside); April 23, 2015 (SCAG–Los Angeles); August 18, 2015 (SCAG–Los Angeles); and August 31, 2015 (Ovitt Family Community Library–Ontario).

The purpose of the workshops were to share information and updates on the environmental justice process and analysis as part of the 2016 RTP/SCS, and to receive input on specific environmental justice topics. While the first workshop was designed as a review of the

2012 RTP/SCS environmental justice analysis, the remaining workshops were designed to maximize interaction with all participants and receive input on specific topics of evaluation and analysis for the 2016 RTP/SCS environmental justice analysis. For these four workshops, SCAG staff provided a brief overview of the purpose of environmental justice and updates on the 2016 RTP/SCS environmental justice process, after which small breakout sessions were held. Each breakout session focused on one of four specific environmental justice topics and was headed by a SCAG staff facilitator and notetaker. The SCAG staff facilitator led a dialogue with participants and encouraged thoughts and input to be expressed on the topic. Following the first breakout session, another session with the same format was held, after which session volunteers verbally summarized input received during their respective sessions. In addition to the special environmental justice workshops, SCAG included environmental justice as a component of the 2016 RTP/SCS Open Houses, held between May and July 2015.

In addition to the workshops, SCAG conducted focus groups and one-on-one interviews with stakeholders to address specific topics that needed additional follow up prior to the final two workshops. All focus groups and interviews were conducted by a third-party consultant contracted by SCAG to allow stakeholders to share their thoughts and concerns candidly and comfortably. More than 75 individual stakeholders were contacted to participate in focus groups centered around specific environmental justice areas of concern, such as public health, housing, impacts on racial and ethnic minority groups, and environmental impacts. Stakeholders who were unable to participate in the set focus group date were invited to participate in a one-on-one interview with similar questions asked at the focus groups. Twenty-three stakeholders participated in the focus groups, which took place on July 21 and 22, 2015 at the SCAG Los Angeles office, and on July 23, 2015 at the SCAG Riverside office. A focus group took place during the evening hours on July 21, 2015 to accommodate work schedules of stakeholders who could not participate during the day.

In response to comments made at the workshops, SCAG followed up by organizing focused meetings to further discuss methodology and ensure that it addressed the concerns raised by our environmental justice stakeholders. Participants were also urged to attend subsequent public workshops. Many of those who attended the environmental justice workshops also attended the 2016 RTP/SCS workshops. Furthermore, to address the comments made during SCAG's workshops, the environmental justice analysis has been updated from prior years as follows:

- Expand analysis beyond regional impacts, and include a community-based approach.

- Examine historic conditions and assess the impacts of the 2016 RTP/SCS on Urban and Rural communities.

- Examine the distribution of transportation infrastructure investments throughout the region.

- Expand the previous analysis on jobs-housing balance/jobs-housing mismatch and include findings on the pattern of low-wage jobs and affordable rental housing throughout the region.

- Examine the availability of employment, shopping, schools and parks within short distances for low-income and minority residents.

- Tabulate the proximity of air quality monitoring stations near communities with the highest concentrations of low-income and minority populations.

- Examine the impacts of air pollution for minority and low income population who live in areas near freeways and highly traveled corridors (also known as "high volume roadways").

- Include additional analysis to identify environmental justice concerns for active transportation modes, including possible roadway hazards for bicyclists and pedestrians.

- Expand the public health analysis in the Appendix to include more information on existing conditions.

- Include analysis on the potential risks of climate change on environmental justice groups, and provide recommendations for local jurisdictions to reduce harms.

- Include a broader range of tools for addressing potential environmental justice impacts for local agencies.

- Expand the analysis of existing conditions and identify trends at a place-by-place basis.

- Increase the number of maps and visual aids in the 2016 RTP/SCS Environmental Justice Appendix.

BACKGROUND ON TECHNICAL ANALYSIS

The following section summarizes the technical approach employed for the 2016 RTP/SCS environmental justice analysis. Detailed methodologies explaining SCAG's approach to assessing impacts for each performance measure are available within their respective sections. As with previous plans, the goal of the 2016 RTP/SCS is to ensure that when transportation decisions are made, low-income and minority communities have ample opportunity to participate in the decision-making process and receive an equitable distribution of benefits, rather than a disproportionate share of burdens.

IDENTIFYING DEMOGRAPHIC GROUPS–WHO DOES THE PLAN IMPACT?

Identifying low-income and minority populations is necessary both for conducting effective public participation and for assessing the distribution of benefits and burdens of transportation plans and projects. For the purposes of this analysis, SCAG focused on all low-income groups and minority populations. Executive Order 12898 and the US DOT and FHWA Orders on environmental justice define "minority" as persons belonging to any of the following groups, as well as "other" categories that are based on the self-identification of individuals in the U.S. Census: African American, Hispanic, Asian/Pacific Islander, and Native American and Alaskan Native. SCAG based its analysis on the latest census data for ethnic/racial groups in the SCAG region, at the census tract level and by transportation analysis zone (TAZ).

The poverty classification is a federally established income guideline used to define persons who are economically disadvantaged as outlined by the U.S. Department of Health & Human Services guidelines. The poverty level applicable to the SCAG region is chosen on the basis of regional average household size for a given census year. In 2010, a family of three earning less than $17,374 was classified as living in poverty.

TABLE 1 lists the demographic categories that are used in SCAG's environmental justice analysis. In addition to complying with federal guidance, SCAG also conducts income equity analyses by breaking down total regional income figures into five income quintiles. A quintile, by definition, is a category into which 20 percent of the ranked households fall, and is updated based on the most recent census data on household income. Once the income quintiles are established, the incidence of benefits and costs can be estimated and compared across these income categories for multiple data sets. Examples include the number of income tax returns, households, workers/commuters, and consumer units. From statistics provided by the U.S. Census Bureau, the Bureau of Labor Statistics (BLS), Bureau of Transportation Statistics (BTS), and the National Household Travel Survey (NHTS), staff produced various distributions by income quintile, which were further allocated by racial/ethnic groups within each income quintile. In the analysis of the Plan, behavioral differences that are largely determined by income levels are processed to determine a number of variables (e.g. mode usages by trip purposes—work versus non-work, consumer expenditures by categories—taxable items and gasoline, adjusted gross income, tax paid, etc). With the framework and information described above, key environmental justice determinants, with respect to major policy instruments for the 2016 RTP/SCS, can be allocated to geographic areas based on various mode usage assumptions for each income quintile at areas as small as Tier 2 Transportation Analysis Zones (TAZs) (11,000+ zones equivalent to census block groups). Using the 2009-2013 American Community Survey (ACS), SCAG staff produced a regional household distribution by income quintile. Household income ranges for these groups are presented in **TABLE 2**.

TABLE 1 Demographic Categories

Ethnic/Racial/Other Categories (Persons)
Hispanic (Latino)
White (Non-Hispanic)
African-American (Non-Hispanic)
Native American (Non-Hispanic)
Asian/Pacific Islander (Non-Hispanic)
One or More Race/Some Other Race (Non-Hispanic)
Disabled/Mobility Limited
Seniors, Age 65 and Above
Young Children Age 4 and Under
Children Ages 5-12
Non-English Speakers
Individuals without a High School Diploma
Foreign Born Population
Households without a Vehicle

Income Categories (Households)
Households Below Poverty (Poverty 1)
Households at 1.5x Poverty Level (Poverty 2)
Households at 2x Poverty Level (Poverty 3)
Households by Ranked Income Quintile
Households by Race/Ethnicity and Ranked Income Quintile

TABLE 2 Income Distribution by Quintile

Income Quintiles	Income Range
Quintile 1	$0 to $24,581
Quintile 2	$24,582 to $46,436
Quintile 3	$46,436 to $73,554
Quintile 4	$73,555 to $99,999
Quintile 5	$100,000 and Higher

Source: 2009-2013 American Community Survey

ESTABLISHMENT OF GEOGRAPHIES FOR ANALYSIS–WHERE SHOULD IMPACTS BE ASSESSED?

In measuring the outcomes of the Plan, SCAG conducted analysis on all topics to identify any potential disproportionately high and adverse impacts for various environmental justice groups.

Adverse effects are defined by the Federal Transit Administration (FTA) in the 2012 Environmental Justice Policy Guidance for Federal Transit Administration Recipients as:

- "the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness, or death; air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or non-profit organizations; increased traffic congestion, isolation, exclusion or separation of individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of benefits of [Department of Transportation] programs, policies, or activities".

Adverse effects are disproportionate when they are:

- (1) "predominately borne by minority population and/or low income population", or (2) "will be suffered by the minority population and/or low-income population and is appreciably more sever or grater in magnitude than the adverse effect that will be suffered by the non-minority and/or non-low-income population" (Federal Register Volume 77, Issue 137).

In order to determine if there are disproportionately high and adverse impacts to environmental justice communities, SCAG conducted a regional analysis, and also drilled down into specific areas of concern to address the impacts of the 2016 RTP/SCS for a selection of performance areas. This "community-based approach" was also developed by the Bay Area's Metropolitan Transportation Commission (MTC), and has been tailored to suit our region based on guidance from stakeholders.

Specific areas of concern include:

- **Environmental Justice Areas (EJAs):** Transportation Analysis Zones (TAZs), which are similar to Census Block Groups, that have a higher concentration of minority population OR low-income households than is seen in the region as a whole. The inclusion of this geography helps to fulfill SCAG's Title VI requirements, along with other state and federal environmental justice guidelines (**EXHIBIT 1**).

- **SB 535 Disadvantaged Communities (DACs):** Census tracts that have been identified by the California Environmental Protection Agency (Cal/EPA) as Disadvantaged Communities (DACs) based on the requirements set forth in SB 535, which seek to identify areas disproportionately burdened by and vulnerable to multiple sources of pollution (**EXHIBIT 2**). **EXHIBIT 3** shows the overlap of SB 535 Disadvantaged Communities with Environmental Justice Areas.

- **Communities of Concern (CoCs):** Census Designated Places (CDPs) and City of Los Angeles Community Planning Areas (CPAs) that fall in the upper one-third of all communities in the SCAG region for having the highest concentration of minority population AND low income households (**EXHIBIT 4**).

- **Urban Areas:** Urban Areas in the SCAG region represent densely developed territory, and encompass residential, commercial and other non-residential Urban land uses where population is concentrated over 2,500 people in a given locale.[1] For the purpose of this report, SCAG will be analyzing the 2010 Adjusted Urban Areas, which are developed by the U.S. Census Bureau and updated by Caltrans with guidance from FHWA (**EXHIBIT 5**).

- **Rural Areas:** Rural locales consist of all of the areas within the SCAG region that are not within Urban Areas (**EXHIBIT 5**).

Building on the analysis of the 2012 RTP/SCS, SCAG is also continuing to examine the impacts of the Plan for areas that are known to have specific environmental concerns. These include:

- Areas within 500 feet of highways, highly traveled corridors and passenger/commercial rail roads;

- Areas within a one-half mile of existing rail transit stops and areas that have transit service with peak headways of 15 minutes or less;

- Neighborhoods that fall within potential future emissions hotspots (based the 2016 RTP/SCS's modeled on-road emissions outcomes for particulate matter (PM) and carbon monoxide (CO)); and

- Areas that are impacted by highway and aviation noise.

Potential impacts are determined if the Plan results in negative circumstances for these areas, and if they have a greater concentration of environmental justice groups than is seen in the greater region.

EXHIBIT 1 Environmental Justice Areas

NEVADA

Kern

San Bernardino
County

*Santa
Barbara*

Ventura
County

Los Angeles
County

ARIZONA

Riverside
County

Orange
County

San Diego

Imperial
County

0 5 10   20
              Miles

MEXICO
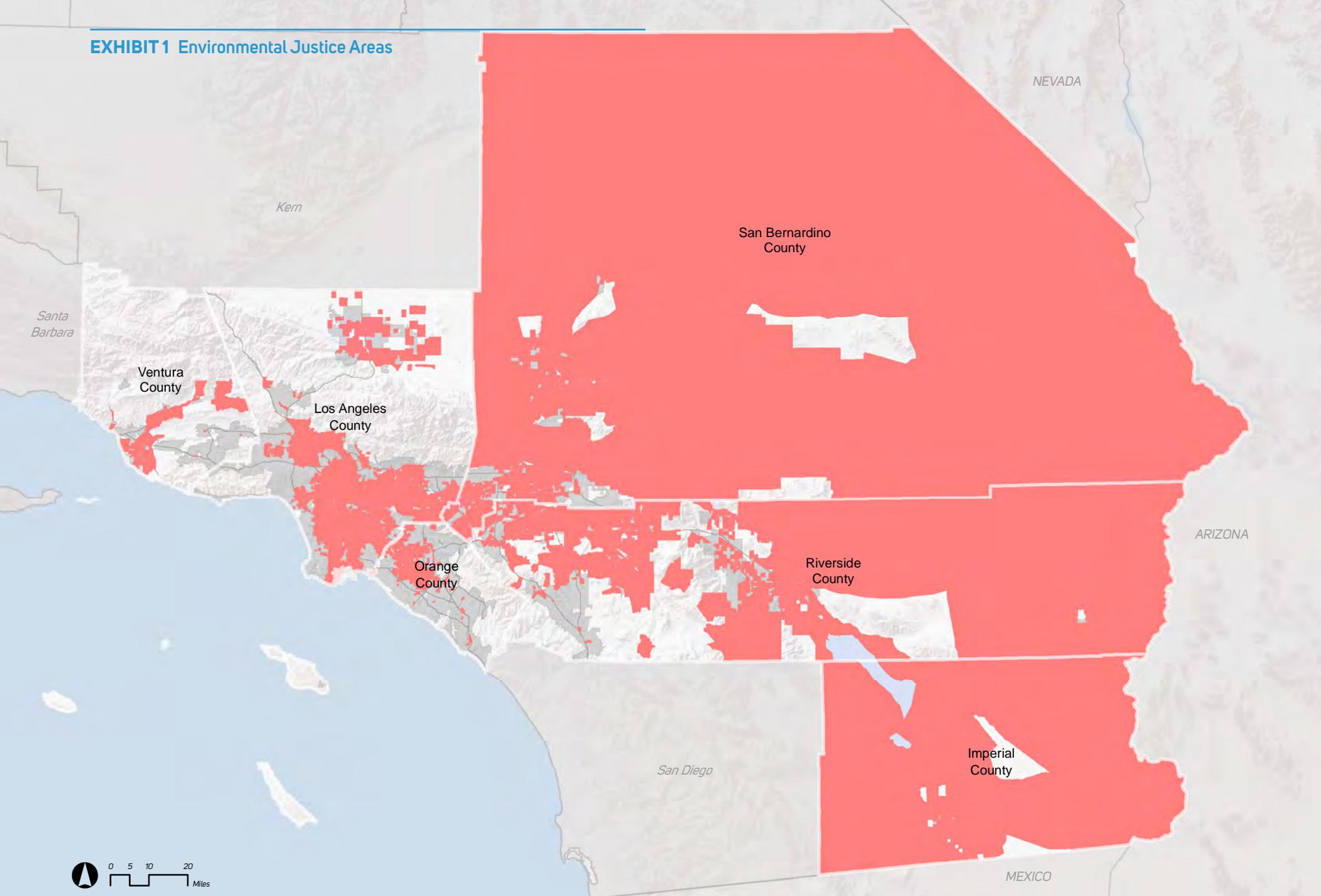
Environmental Justice Areas

Qualifying Transportation Analysis Zones (TAZs)

(Source: SCAG, 2015)

EXHIBIT 2 SB 535 Disadvantaged Communities
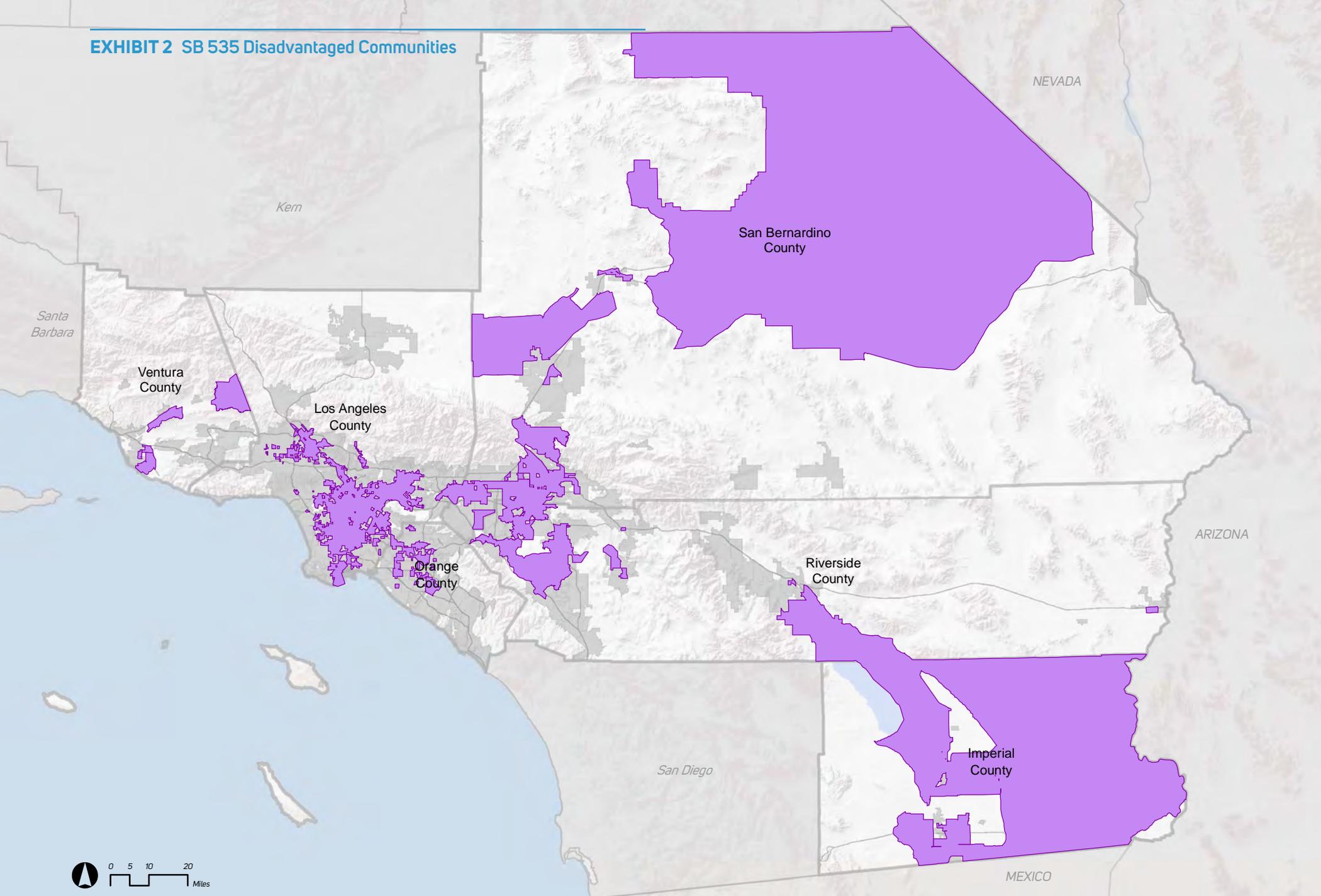
**SB 535 Disadvantaged Communities
in the SCAG Region**

SB 535 Disadvantaged Areas

(Source: SCAG, 2015)

EXHIBIT 3 Intersection of Environmental Justice Areas and SB 535 Disadvantaged Communities
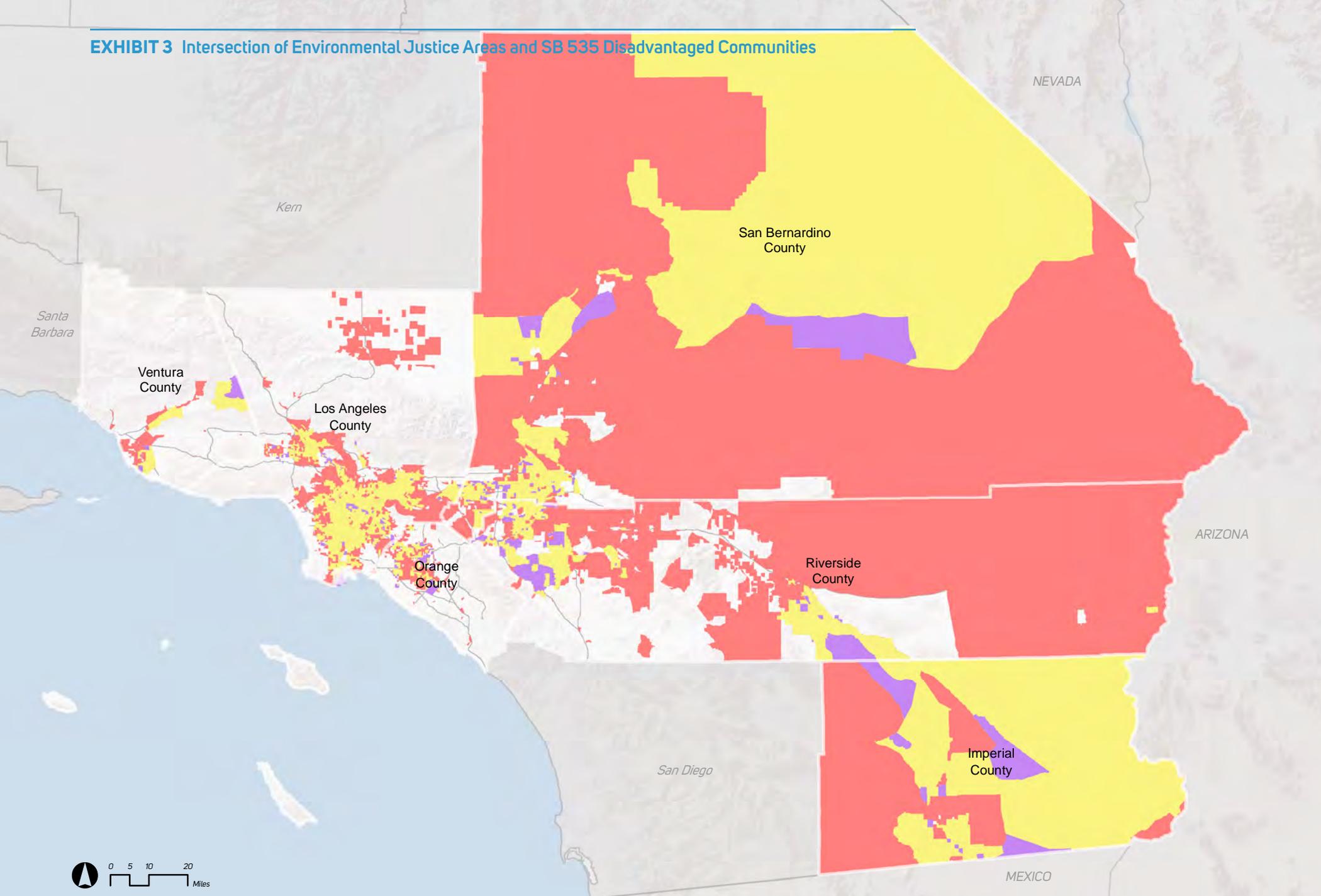
Environmental Justice Areas

- Environmental Justice Areas (EJAs)
- Disadvantaged Communities (DACs)
- Overlap of EJAs and DACs

(Source: SCAG, 2015)

EXHIBIT 4 Communities of Concern
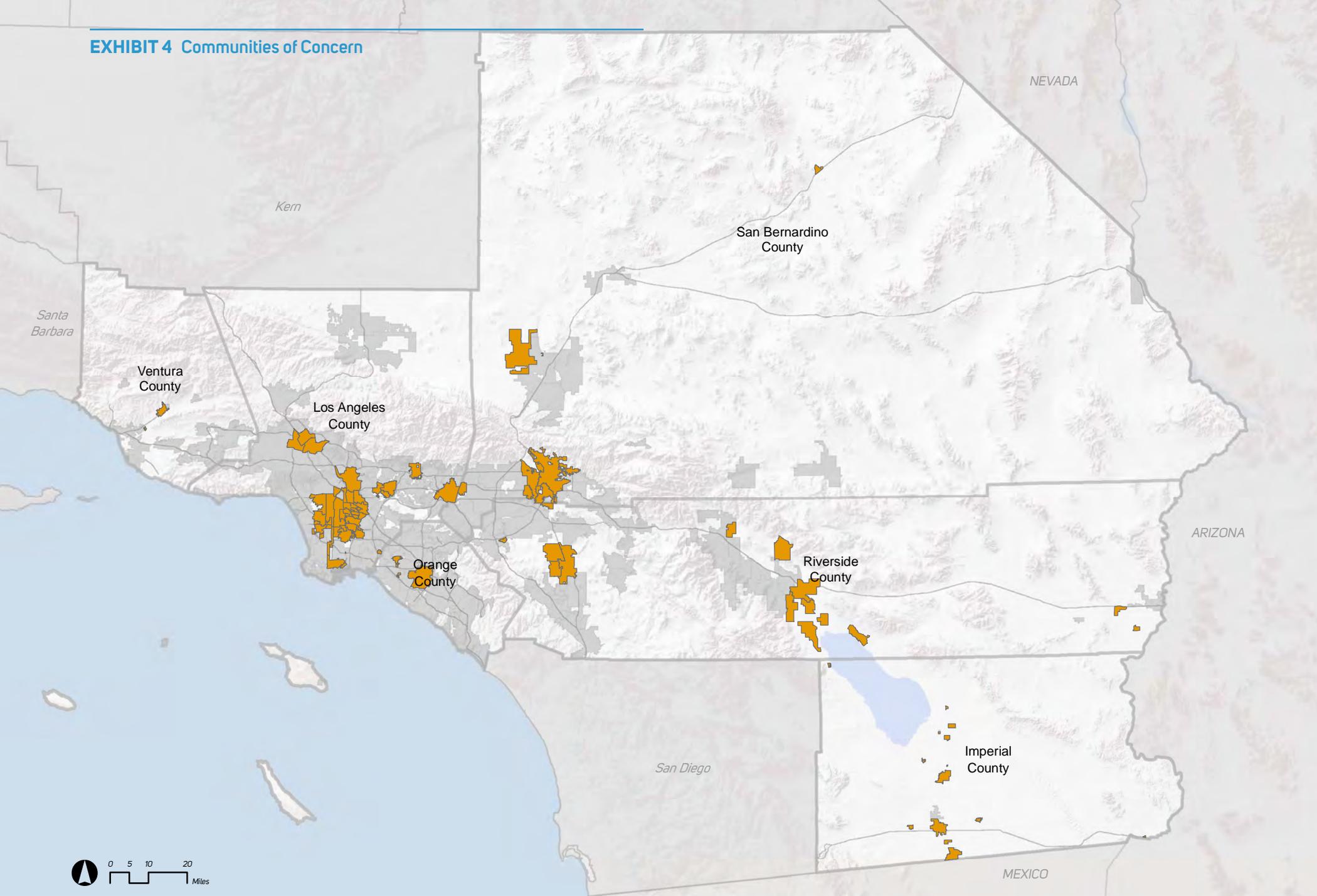
**Environmental Justice
Communities of Concern in the SCAG Region**

■ Communities of Concern

(Source: SCAG, 2015)

EXHIBIT 5 Urban and Rural Areas
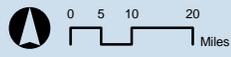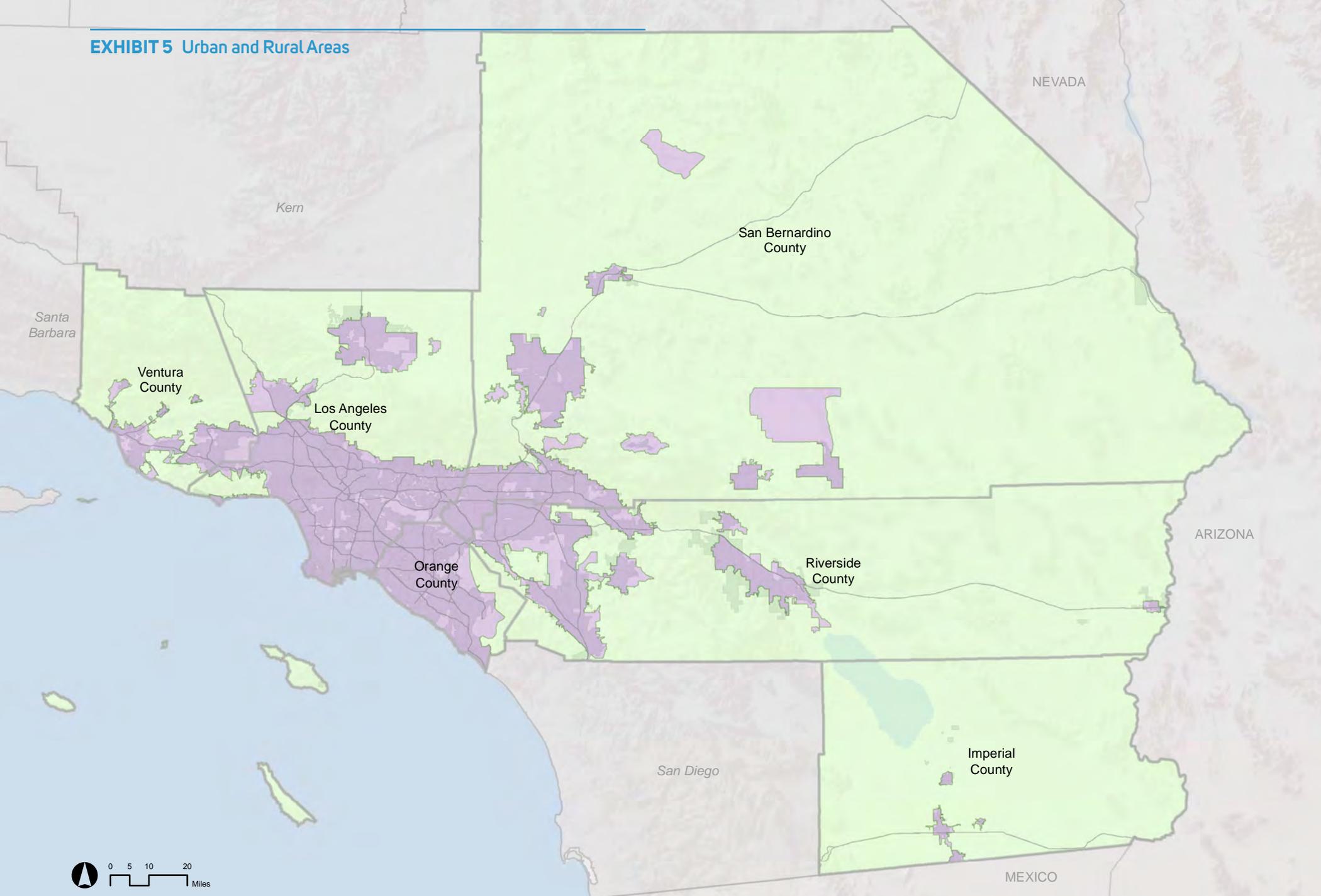
Environmental Justice
Urban and Rural Areas in the SCAG Region

▨ Urban ▨ Rural

(Source: SCAG, 2015; Caltrans, U.S. Census Bureau)

PERFORMANCE AREAS–HOW WILL IMPACTS BE ANALYZED?

In the development of this report, SCAG identified 18 performance measures to analyze existing social and environmental equity in the region and to address the impacts of the 2016 RTP/SCS on various environmental justice population groups. Detailed analysis is presented for the following 18 performance areas:

- Benefits and burdens analysis (three Performance Areas)
    - 2016 RTP/SCS revenue sources in terms of tax burdens
    - Share of transportation system usage
    - 2016 RTP/SCS investments
- Distribution of travel time savings and travel distance reductions
- Geographic distribution of transportation investments
- Jobs-housing imbalance or jobs-housing mismatch
- Impacts from funding through mileage-based user fees
- Accessibility to employment and services
- Accessibility to parks and natural lands
- Gentrification and displacement
- Emissions impacts analysis (two Performance Areas)
    - Regional impacts
    - Impacts along freeways and highly traveled corridors (i.e., high-volume roadways)
- Aviation noise impacts
- Roadway noise impacts
- Active transportation hazards
- Public health analysis
- Rail-related impacts
- Climate vulnerability

The primary method for gauging impacts from the 2016 RTP/SCS will be to compare the horizon year of the Plan, 2040, under two opposing paradigms. The first ("Plan") represents a future where the selected strategies contained in the 2016 RTP/SCS have been implemented. The second ("Baseline") operates under the assumption that the Plan will not be implemented and represents the year 2040 under "business as usual" conditions, which includes the completion of transportation projects currently underway or for which funds are already committed, and assumes the continuation of current land use and growth trends.

In order to understand how projected population growth will impact the current transportation system, comparisons are also made to the Base Year of the Plan, 2012. In the upcoming analysis, it can sometimes be seen that the outcomes of the Baseline or Plan do not perform as well as current circumstances. It is important to note, however, that an additional 3.8 million people will be living in the SCAG region in 2040, which will put a tremendous strain on our current infrastrcture if we do not plan for growth and change.

Several of the performance areas included in this Appendix do not assess the impacts of the Plan, but rather examine historic environmental justice trends throughout the region. These items are included to provide useful information for regional stakeholders when making decisions that impact low-income and minority population groups throughout the region, and have helped to inform the measures listed in the Environmental Justice Toolbox available at the end of this report.

SUMMARY OF TECHNICAL ANALYSIS

Presented here is a summary of the impacts of the 2016 RTP/SCS on the environmental justice population groups in the region as a whole, as well as for the total population residing within each area of concern. **TABLE 3** lists the impacts for each performance measure, comparing the outcome of the Plan to the Baseline scenario, and also includes a summary of results for measures that examine historical trends and existing conditions. Note that when impacts are noted at the regional level, this reflects the results of the Plan specifically for environmental justice groups within the region. Overall, the Plan yields benefits for the low-income and minority population in the region and reduces potential adverse impacts. Although technical tools are not available to quantify the impact, economic advantages of the Plan may also reduce the number of households in poverty in the region due to the benefits associated with job creation.

TABLE 3 Comparison of EJ Performance Measures between 2040 Plan and 2040 Baseline

EJ Topic	No.	EJ Performance Measures	Regional Impacts					
BENEFITS AND BURDENS	1	2016 RTP/SCS Revenue Sources in Terms of Tax Burdens	Improve					
	2	Share of Transprotation System Usage	Improve					
	3	2016 RTP/SCS Investments vs. Benefits	Improve					

EJ Topic	No.	EJ Performance Measures	Region	EJA	DAC	CoC	Urban	Rural
TRAVEL TIME AND TRAVEL DISTANCE SAVINGS	4	Distribution of Travel Distance Savings Reductions (30 Minute Auto)	Improve	Improve	Improve	Improve	Improve	Does Not Improve
		Distribution of Travel Time Reductions (30 Minute Auto)	Improve	Improve	Improve	Improve	Improve	Improve
		Distribution of Travel Time Reductions (45 Minute All Transit)	Improve	Improve	Improve	Improve	Improve	Improve
		Distribution of Travel Time Reductions (45 Minute Local Bus)	Improve	Improve	Improve	Improve	Improve	Improve
GEOGRAPHIC DISTRIBUTION OF TRANSPORTATION INVESTMENTS	5	Geographic Distribution of Transportation Investments in Bicycle (by lanemile)	Improve	Improve	Improve	Improve	Improve	Improve
		Geographic Distribution of Transportation Investments in Transit (by mile)	Improve	Improve	Improve	Improve	Improve	Improve
		Geographic Distribution of Transportation Investments in Highway (by lanemile)	Improve	Improve	Improve	Improve	Improve	Improve
JOBS-HOUSING BALANCE	6	Jobs-Housing Imbalance or Jobs-Housing Mismatch	Current Conditions Analysis Results show that higher wage workers tend to commute longer distances than lower wage workers. Average commute distance, however, grew in all six counties between 2002 and 2012, and especially in the Inland counties where there is a lower job-to-worker ratio than coastal counties. The Plan will contribute to improvements in jobs-housing balance throughout the region, and especially in inland counties.					
IMPACTS FROM MILE-BASED USER FEE	7	Impacts from Funding Through Mileage-Based User Fee	There is no disproportionate impact. The proposed mileage-based user fee system is deemed more equitable to low income groups than both the gasoline tax and sales tax, which are highly regressive. Under the current structure, low income households pay more per mile in gasoline tax than their higher earning counterparts due to their lower adoption rates of new (more fuel efficient) vehicles. With the mileage-based user fee system, all households will pay in proportion to their usage of the transportation system.					

TABLE 3   Comparison of EJ Performance Measures between 2040 Plan and 2040 Baseline Continued

EJ Topic	No.	EJ Performance Measures	Region	EJA	DAC	CoC	Urban	Rural
ACCESSIBILITY TO EMPLOYMENT AND SERVICES	8	Accessibility to Employment (time-based) (Weighted Average Job Accessibility by Auto within 30 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Employment (time-based) (Weighted Average Job Accessibility by All Transit within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Employment (time-based) (Weighted Average Job Accessibility by Local Bus within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Shopping (time-based) (Weighted Average Job Accessibility by Auto within 30 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Shopping (time-based) (Weighted Average Job Accessibility by All Transit within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Shopping (time-based) (Weighted Average Job Accessibility by Local Bus within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Employment within one mile (distance-based) (Weighted Average Job Accessibility within One Mile Distance)	Improve	Improve	Improve	Improve	Improve	Does Not Improve
		Accessibility to Shopping within one mile (distance-based) (Weighted Average Shopping Accessibility within One Mile Distance)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Employment within two mile (distance-based) (Weighted Average Job Accessibility within Two Mile Distance)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Shopping within two mile (distance-based) (Weighted Average Shopping Accessibility within Two Mile Distance)	Improve	Improve	Improve	Improve	Improve	Improve
ACCESSIBILITY TO PARKS AND NATURAL LANDS	9	Accessibility to Local Parks (Weighted Average Local Park Accessibility by Auto within 30 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Local Parks (Weighted Average Local Park Accessibility by All Transit within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Local Parks (Weighted Average Local Park Accessibility by Local Bus within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Natural Lands (Weighted Average Local Park Accessibility by Auto within 30 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Natural Lands (Weighted Average Local Park Accessibility by All Transit within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve
		Accessibility to Natural Lands (Weighted Average Local Park Accessibility by Local Bus within 45 Minutes)	Improve	Improve	Improve	Improve	Improve	Improve

TABLE 3   Comparison of EJ Performance Measures between 2040 Plan and 2040 Baseline Continued

EJ Topic	No.	EJ Performance Measures	Region	EJA	DAC	CoC	Urban	Rural
PROXIMITY TO SCHOOLS AND PARKS	10	Population within One Mile Distance From Local Parks	Does Not Improve	Does Not Improve	Does Not Improve	Does Not Improve	Does Not Improve	Improve
		Population within Two Mile Distance From Local Parks	Does Not Improve	Does Not Improve	Improve	Does Not Improve	Does Not Improve	Improve
		Population within One Mile Distance From Natural Lands	Does Not Improve	Does Not Improve	Improve	Improve	Does Not Improve	Improve
		Population within Two Mile Distance From Natural Lands	Improve	Improve	Improve	Improve	Improve	Improve
		Population within One Mile Distance From Schools	Does Not Improve	Does Not Improve	Does Not Improve	Does Not Improve	Does Not Improve	Improve
		Population within Two Mile Distance From Schools	Does Not Improve	Does Not Improve	Improve	Does Not Improve	Does Not Improve	Improve
GENTRIFICATION	11	Gentrification and Displacement	Current Conditions Analysis While comprehensive studies are underway, preliminary findings suggest potential indications of gentrification in Transit Oriented Communities (TOCs). In this analysis, TOCs were defined as the neighborhoods within a 1/2 mile distance of existing rail stations, and were analyzed to assess the levels of gentrification and displacement in these areas. Compared to the region, Hispanics and Seniors have seen less growth in TOCs during the period from 2000 to 2013. At the same time, median household income has decreased less and median gross rent increased more in TOCs than in the greater region. Median household income has also decreased less and median gross rent increased more in TOCs than in High Quality Transit Areas* (HQTAs). These different growth patterns in TOCs may be the evidence of gentrification which could cause displacement of minority and low income households. SCAG will continue to monitor gentrification and displacement in these areas.					
EMISSIONS IMPACT ANALYSIS	12	Emissions Impact Analysis (PM$_{2.5}$)	Improve	Improve	Improve	Improve	Improve	Improve
		Emissions Impact Analysis (CO)	Improve	Improve	Improve	Improve	Improve	Improve

EJ Topic	No.	EJ Performance Measures	Regional Impacts			Within 500' of Freeways and Urban Roads		
IMPACTS ALONG FREEWAYS AND HIGHLY TRAVELED CORRIDORS	13	Impacts Along Freeways and Highly Traveled Corridors (Percentage of Minority Population)	No Change			Does Not Improve		
		Impacts Along Freeways and Highly Traveled Corridors (Percentage of Low-Income Households)	No Change			Improve		
		Impacts Along Freeways and Highly Traveled Corridors (Decrease in Emissions - CO)	Improve			Improve		
		Impacts Along Freeways and Highly Traveled Corridors (Decrease in Emissions - PM$_{2.5}$)	Improve			Improve		

High Quality Transit Areas (HQTAs) represent the half mile zone surrounding all rail transit stations, ferry terminals served by bus or rail transit service, the intersection of two or more major bus routes with a frequency interval of 15 minutes or less during morning and afternoon peak commute periods, and corridors with fixed route bus service with headways of no longer than 15 minutes during peak commute hours.

TABLE 3 Comparison of EJ Performance Measures between 2040 Plan and 2040 Baseline Continued

EJ Topic	No.	EJ Performance Measures	Region	EJA	DAC	CoC	Urban	Rural
NOISE ANALYSIS	14	Aviation Noise Impacts	Improve	Improve	Improve	Improve	Improve	No Change
		Roadway Noise Impacts	Does Not Improve	Improve	Does Not Improve	Improve	Does Not Improve	Improve
AT HAZARD	15	Active Transportation Hazard	Current Conditions Analysis Collisions data from 2012 shows that low income and minority communities incur a higher rate of bicycle and pedestrian risk. Improvements in active transportation infrastructure and complete streets measures, such as those proposed in the Plan, have been shown to reduce hazard to cyclists and pedestrians. The Environmental Justice Toolbox, available at the end of this report, lists potential strategies to reduce risk at the local level					
PUBLIC HEALTH	16	Public Health Analysis	Current Conditions Analysis Recent trends indicate that air quality is improving throughout the region. For select areas that show increase, there is sometimes a higher proportion of minority and low income population. When examining public health indicators from the CalEnviroScreen tool, it appears that areas with the highest concentrations of minority and low income population incur some of the highest risks throughout the region.					

EJ Topic	No.	EJ Performance Measures	Region	Railroad Adjacent Areas	Areas Adjacent to Grade Separation Projects
RAIL RELATED IMPACTS	17	Rail-Related Impacts (Percentage of Minority Population)	No Change	Improve	Improve
		Rail-Related Impacts (Percentage of Low-Income Households)	No Change	Improve	No Change
CLIMATE ADAPTATION	18	Climate Adaptation	Current Conditions Analysis Present conditions indicate that minority and low income population are at a greater risk for experiencing negative impacts from Climate Change, such as extreme heat and other extreme events. These populations tend to have fewer resources to cope climate consequences. Lack of resources like air conditioning and automobiles may constrain people to become stranded in heat prone areas and may not be able to go to cooling centers. In addition, minority and low people may be greater impacted by the disruption to their place of work and the local economy, since many may have fewer financial reserves to sustain themselves. Please refer to the Environmental Justice Appendix for potential strategies to reduce harms at the local level.		

For items that show "Does Not Improve", strategies to reduce impacts for low income and minority groups are included in the Environmental Justice Toolbox, which is available at the end of this Appendix.

HISTORICAL DEMOGRAPHIC TRENDS

This section describes trends for various population groups in the region, and has been expanded from the 2012 RTP/SCS to include data showing trends for all areas of concern, as previously described.

The most reliable source for demographic data at multiple geographies in the SCAG region is the U.S. Census Bureau. In order to identify and analyze trends in population at the local and regional levels, three Census-derived datasets will most often be compared in this analysis. Historical information for the year 1990 and 2000 will be taken from the U.S. Decennial Census. Due to the breadth of information available at small area geographies, the 2009-2013 American Community Survey (ACS) will be used to illustrate the most recent conditions in the SCAG region. Because the 2009-2013 ACS represents a five-year estimate, SCAG utilized this information to develop a dataset for 2012, the Base Year of the Plan. In terms of future growth, projections from the Integrated Growth Forecast will also be included in the analysis for 2040, which is the horizon year of the 2016 RTP/SCS.

Existing conditions information will be presented at the regional (and county) level, and will also be summarized for each area of concern. As mentioned previously, the environmental justice impacts of the 2016 RTP/SCS will be analyzed at the regional level, and will also be measured for specific areas of concern, which have been identified as being home to a significantly higher concentration of low-income and minority population than is seen in the region as a whole, or represent areas that demonstrate substantial environmental risks to the current inhabitants (SB 535 Disadvantaged Communities).

In addition, trends are also summarized for each of the communities that are included in SCAG's "Communities of Concern" geography in the addendum to this Appendix.

REGIONAL DEMOGRAPHIC TRENDS

Southern California has experienced a steady stream of growth since 1990, adding nearly 3.7 million residents through 2012. The region has also seen a dramatic increase in diversity as both the number and share of the white population in the greater region has steadily declined. Native Americans have also experienced a similar trend. Population numbers for other groups, alternatively, have substantially increased, with Hispanic population growing by 75 percent and Asians/Pacific Islanders showing an increase of 77 percent. This pattern will continue toward 2040, as Hispanics are projected to grow by 38 percent in terms of population and Asians/Pacific Islanders will also see an increase by 58 percent from their 2012 total. Another emerging trend is that more and more people are identifying as "One or More Race" or "Some Other Race."

Along with changes in racial and ethnic diversity, the region has also seen increases in the number of people who are born in places outside the United States. From 1990 to 2012, this group has increased in number by 50 percent. Through 2040, it is projected that the immigrant population in the region will continue to grow – albeit at a slower rate. One group, however, that will see a very fast increase is the number of seniors, with adults aged 65 and older expected to increase by 90 percent from 2012 to 2040. Children under 5 years old will not have this same rate of growth, and will experience an 11 percent increase through 2040, which is slower than the growth of the region's overall population (21 percent from 2012 to 2040).

TABLES 4 - 14 and **FIGURES 1 - 4** show historic growth for a number of variables of significance to environmental justice, including a breakdown of income quintiles by county.

TABLE 4 Regional Trends and Demographic Changes in the SCAG Region (1990 to 2040)

	1990	2000	2009-2013	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**14,635,370**	**16,670,798**	**18,317,936**	**22,116,370**	3,682,566	25%	3,798,434	21%
Race & Ethnicity								
Hispanic	4,785,501	6,723,619	8,379,685	11,573,093	3,594,184	75%	3,193,408	38%
Non-Hispanic	9,849,869	9,947,179	9,938,251	10,543,277	88,382	1%	605,026	6%
White	7,284,203	6,516,817	5,981,502	4,957,808	-1,302,701	-18%	-1,023,694	-17%
African American	1,173,523	1,192,810	1,173,929	1,181,604	406	0%	7,675	1%
Asian and Pacific Islanders	1,297,835	1,725,198	2,295,666	3,625,529	997,831	77%	1,329,863	58%
Native American	64,474	61,990	50,290	82,980	-14,184	-22%	32,690	65%
Other	29,834	450,364	436,864	695,356	407,030	1364%	258,492	59%
Immigration								
Foreign Born Population	3,976,062	5,134,882	5,972,487	8,313,997	1,996,425	50%	2,341,510	39%
Language								
Non-English Speaking Population*	1,520,816	689,490	902,364	1,245,461	-618,452	-41%	343,097	38%
Age								
Population 65+ Years	1,425,604	1,677,993	2,098,937	3,996,934	673,333	47%	1,897,997	90%
Children Ages 5 and Under	1,446,527	1,274,138	1,481,429	1,650,455	34,902	2%	169,026	11%
Education								
Individuals without High School Diploma (or equivalent)**	2,434,629	2,772,441	2,149,319	3,174,020	-285,310	-12%	1,024,701	48%
Households	**4,933,562**	**5,386,491**	**5,828,093**	**7,404,155**	894,531	18%	1,576,062	27%
Poverty								
Households in Poverty	637,401	837,256	809,856	1,026,461	172,455	27%	216,605	27%
Transportation								
Households without Vehicles	440,364	546,604	487,802	669,980	47,438	11%	182,178	37%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey

TABLE 5 Households by Income Quintile and County: 2012

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total Household
Imperial	15,356	11,806	9,928	7,452	4,885	49,427
Los Angeles	721,574	665,611	630,484	608,162	629,594	3,255,425
Orange	122,029	161,374	196,253	232,723	286,982	999,361
Riverside	143,087	149,939	148,210	141,791	111,444	694,471
San Bernardino	128,467	132,584	134,358	127,178	92,788	615,375
Ventura	33,124	42,490	53,368	65,298	75,013	269,293
SCAG	1,163,637	1,163,804	1,172,601	1,182,604	1,200,706	5,883,352

Sources: SCAG, 2009-2013 American Community Survey

TABLE 6 Percent of Households by Income Quintile and County: 2012

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total Household
Imperial	31%	24%	20%	15%	10%	100%
Los Angeles	22%	20%	20%	19%	19%	100%
Orange	12%	16%	20%	23%	29%	100%
Riverside	21%	22%	21%	20%	16%	100%
San Bernardino	21%	22%	22%	20%	15%	100%
Ventura	12%	16%	20%	24%	28%	100%
SCAG	20%	20%	20%	20%	20%	100%

Sources: SCAG, 2009-2013 American Community Survey

FIGURE 1 Percent of Households by Income Quintile and County: 1990

Quintile I   Quintile II   Quintile III   Quintile IV   Quintile V
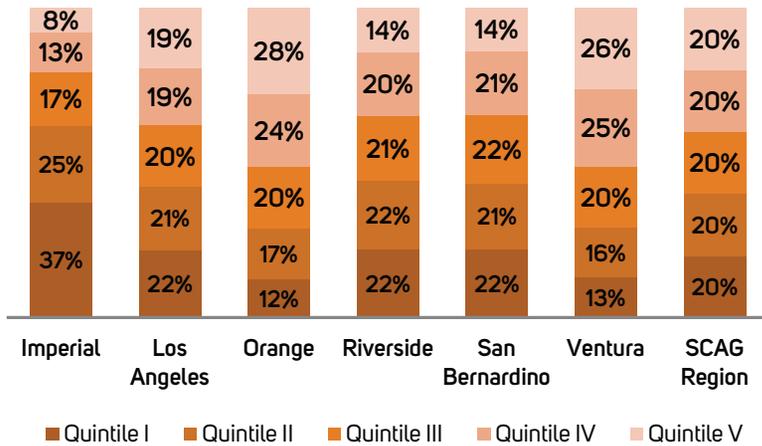
Source: SCAG. 1990 Census

FIGURE 3 Percent of Households by Income Quintile and County: 2012

Quintile 1   Quintile 2   Quintile 3   Quintile 4   Quintile 5
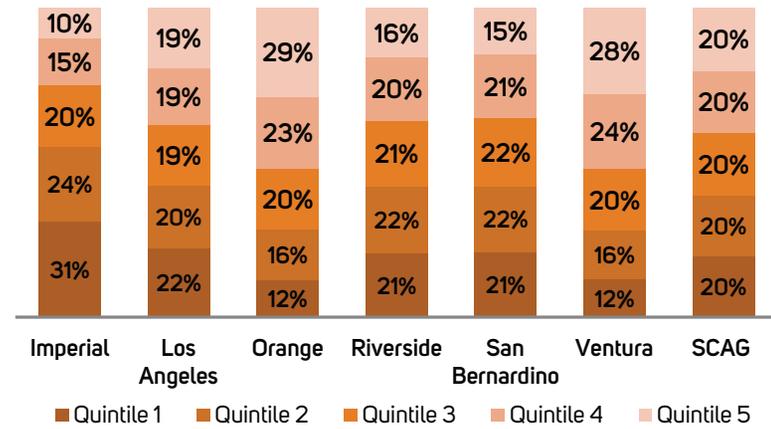
Source: SCAG, 2009-2013 American Community Survey

FIGURE 2 Percent of Households by Income Quintile and County: 2000

Quintile I   Quintile II   Quintile III   Quintile IV   Quintile V
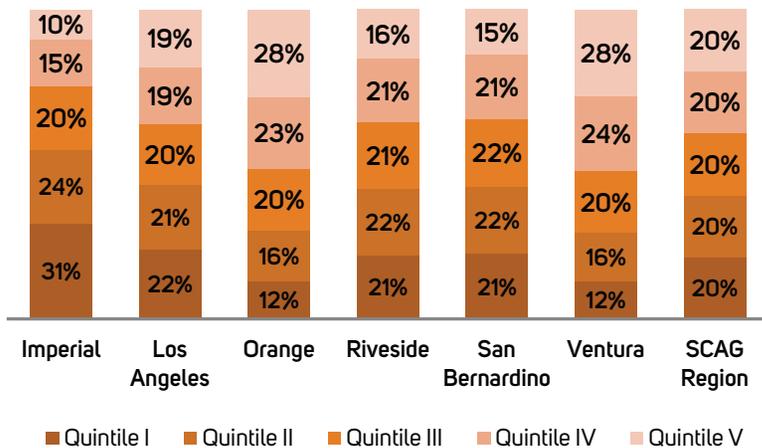
Source: SCAG, 2000 Census

FIGURE 4 Percent of Households by Income Quintile and County: 2040 Projection

Quintile 1   Quintile 2   Quintile 3   Quintile 4   Quintile 5
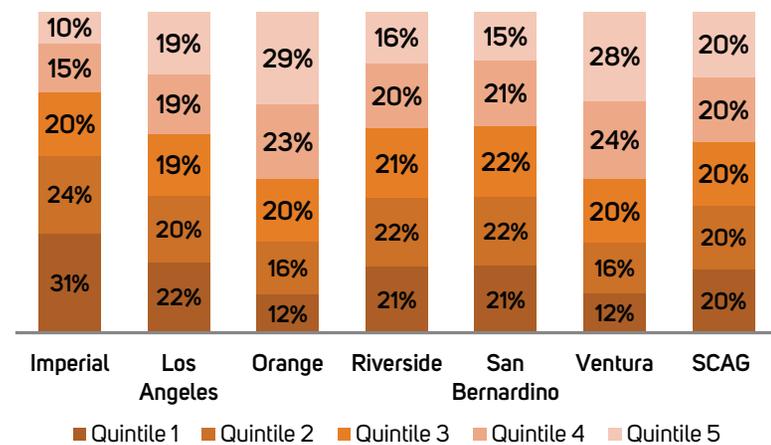
Source: SCAG

TABLE 7 Breakdown of Environmental Justice Population Groups by County: 1990

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	109,303	32,857	11,111	8,790	5,289	3,166	2,642	2,356
Los Angeles	8,861,929	2,993,981	855,626	647,614	603,484	572,570	564,670	570,450
Orange	2,411,194	829,036	219,034	109,920	152,283	197,913	213,608	222,192
Riverside	1,170,403	402,423	153,900	89,474	86,274	74,428	69,498	63,712
San Bernardino	1,418,390	465,876	123,840	102,847	101,190	88,037	80,582	72,423
Ventura	664,151	215,463	62,093	28,939	38,821	51,290	56,402	56,280
SCAG	14,635,370	4,939,636	1,425,604	987,584	987,341	987,405	987,402	987,413

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	8,612	37,938	32,016	2,573	1,527	1,752	70	71,365
Los Angeles	441,542	5,556,023	3,633,984	946,802	30,149	924,089	20,999	3,305,906
Orange	67,804	1,854,069	1,558,206	38,848	9,531	244,608	2,876	557,125
Riverside	44,450	868,124	757,712	60,067	8,964	39,161	2,220	302,279
San Bernardino	58,974	1,044,756	864,832	110,355	10,837	55,717	3,015	373,634
Ventura	16,017	488,959	437,453	14,878	3,466	32,508	654	175,192
SCAG	637,401	9,849,869	7,284,203	1,173,523	64,474	1,297,835	29,834	4,785,501

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	31,568	17,367	3,708	12,177	28,510
Los Angeles	2,894,835	1,110,903	333,500	865,016	1,642,740
Orange	575,313	217,502	38,621	217,231	286,627
Riverside	173,752	67,238	24,663	124,225	188,017
San Bernardino	186,895	64,200	30,436	163,674	202,964
Ventura	113,699	43,606	9,436	64,204	85,510
SCAG	3,976,062	1,520,816	440,364	1,446,527	2,434,368

Sources: SCAG, 1990 Census

TABLE 8 Percent of Environmental Justice Population Groups by County: 1990

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	0.7%	0.7%	10.2%	39.5%	23.8%	14.2%	11.9%	10.6%
Los Angeles	60.6%	60.6%	9.7%	21.9%	20.4%	19.4%	19.1%	19.3%
Orange	16.5%	16.8%	9.1%	12.3%	17.0%	22.1%	23.8%	24.8%
Riverside	8.0%	8.1%	13.1%	23.3%	22.5%	19.4%	18.1%	16.6%
San Bernardino	9.7%	9.4%	8.7%	23.1%	22.7%	19.8%	18.1%	16.3%
Ventura	4.5%	4.4%	9.3%	12.5%	16.8%	22.1%	24.3%	24.3%
SCAG	100.0%	100.0%	9.7%	20.0%	20.0%	20.0%	20.0%	20.0%

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	26.2%	34.7%	29.3%	2.4%	1.4%	1.6%	0.1%	65.3%
Los Angeles	14.7%	62.7%	41.0%	10.7%	0.3%	10.4%	0.2%	37.3%
Orange	8.2%	76.9%	64.6%	1.6%	0.4%	10.1%	0.1%	23.1%
Riverside	11.0%	74.2%	64.7%	5.1%	0.8%	3.3%	0.2%	25.8%
San Bernardino	12.7%	73.7%	61.0%	7.8%	0.8%	3.9%	0.2%	26.3%
Ventura	7.4%	73.6%	65.9%	2.2%	0.5%	4.9%	0.1%	26.4%
SCAG	12.9%	67.3%	49.8%	8.0%	0.4%	8.9%	0.2%	32.7%

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	28.9%	15.9%	11.3%	11.1%	26.1%
Los Angeles	32.7%	12.5%	11.1%	9.8%	18.5%
Orange	23.9%	9.0%	4.7%	9.0%	11.9%
Riverside	14.8%	5.7%	6.1%	10.6%	16.1%
San Bernardino	13.2%	4.5%	6.5%	11.5%	14.3%
Ventura	17.1%	6.6%	4.4%	9.7%	12.9%
SCAG	27.2%	10.4%	8.9%	9.9%	16.6%

Sources: SCAG, 1990 Census

TABLE 9 Breakdown of Environmental Justice Population Groups by County: 2000

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	142,361	39,384	14,516	12,192	9,447	7,964	6,045	3,786
Los Angeles	9,535,495	3,139,806	928,243	706,444	654,248	614,101	583,079	584,471
Orange	2,846,289	935,287	278,805	114,539	153,390	185,621	217,898	264,706
Riverside	1,662,590	567,056	233,420	115,647	122,974	119,198	114,860	94,455
San Bernardino	1,709,434	528,594	145,447	111,781	114,712	115,741	109,091	77,514
Ventura	774,629	252,592	77,562	30,804	39,973	50,466	61,236	70,356
SCAG	16,670,798	5,462,719	1,677,993	1,091,406	1,094,744	1,093,090	1,092,209	1,095,288

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	9,733	39,275	28,489	4,882	1,738	2,609	1,557	103,086
Los Angeles	549,605	5,288,092	2,956,706	891,769	26,306	1,148,999	264,312	4,247,403
Orange	94,925	1,969,838	1,455,470	40,153	8,735	391,982	73,498	876,451
Riverside	73,676	1,089,857	883,816	94,621	11,437	58,908	41,075	572,733
San Bernardino	86,379	1,039,532	749,224	147,488	10,249	81,806	50,765	669,902
Ventura	22,938	520,585	443,112	13,897	3,525	40,894	19,157	254,044
SCAG	837,256	9,947,179	6,516,817	1,192,810	61,990	1,725,198	450,364	6,723,619

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	45,783	11,163	4,367	10,831	34,258
Los Angeles	3,453,017	464,259	394,016	728,909	1,772,605
Orange	849,899	103,454	54,409	213,881	372,419
Riverside	309,857	44,238	39,112	122,704	244,703
San Bernardino	318,647	40,300	42,120	140,709	253,594
Ventura	157,679	26,076	12,580	57,104	94,862
SCAG	5,134,882	689,490	546,604	1,274,138	2,772,441

Sources: SCAG, 2000 Census

TABLE 10 Percent of Environmental Justice Population Groups by County: 2000

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	0.9%	0.7%	10.2%	30.9%	24.0%	20.2%	15.3%	9.6%
Los Angeles	57.2%	57.5%	9.7%	22.5%	20.8%	19.5%	18.6%	18.6%
Orange	17.1%	17.1%	9.8%	12.2%	16.4%	19.8%	23.3%	28.3%
Riverside	10.0%	10.4%	14.0%	20.4%	21.7%	21.0%	20.3%	16.7%
San Bernardino	10.3%	9.7%	8.5%	21.1%	21.7%	21.9%	20.6%	14.7%
Ventura	4.6%	4.6%	10.0%	12.2%	15.8%	20.0%	24.2%	27.8%
SCAG	100.0%	100.0%	10.1%	20.0%	20.0%	20.0%	20.0%	20.0%

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	24.7%	27.6%	20.0%	3.4%	1.2%	1.8%	1.1%	72.4%
Los Angeles	17.5%	55.5%	31.0%	9.4%	0.3%	12.0%	2.8%	44.5%
Orange	10.1%	69.2%	51.1%	1.4%	0.3%	13.8%	2.6%	30.8%
Riverside	13.0%	65.6%	53.2%	5.7%	0.7%	3.5%	2.5%	34.4%
San Bernardino	16.3%	60.8%	43.8%	8.6%	0.6%	4.8%	3.0%	39.2%
Ventura	9.1%	67.2%	57.2%	1.8%	0.5%	5.3%	2.5%	32.8%
SCAG	15.3%	59.7%	39.1%	7.2%	0.4%	10.3%	2.7%	40.3%

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	32.2%	7.8%	11.1%	7.6%	24.1%
Los Angeles	36.2%	4.9%	12.5%	7.6%	18.6%
Orange	29.9%	3.6%	5.8%	7.5%	13.1%
Riverside	18.6%	2.7%	6.9%	7.4%	14.7%
San Bernardino	18.6%	2.4%	8.0%	8.2%	14.8%
Ventura	20.4%	3.4%	5.0%	7.4%	12.2%
SCAG	30.8%	4.1%	10.0%	7.6%	16.6%

Sources: SCAG, 2000 Census

TABLE 11 Breakdown of Environmental Justice Population Groups by County: 2012

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	179,595	49,427	19,458	15,356	11,806	9,928	7,452	4,885
Los Angeles	9,918,470	3,255,425	1,126,036	721,574	665,611	630,484	608,162	629,594
Orange	3,071,544	999,361	373,384	122,029	161,374	196,253	232,723	286,982
Riverside	2,244,917	694,471	280,103	143,087	149,939	148,210	141,791	111,444
San Bernardino	2,067,978	615,375	195,993	128,467	132,584	134,358	127,178	92,788
Ventura	835,432	269,293	103,963	33,124	42,490	53,368	65,298	75,013
SCAG	18,317,936	5,883,352	2,098,937	1,163,637	1,163,804	1,172,601	1,182,604	1,200,706

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	10,467	32,955	22,019	5,637	1,665	2,313	1,321	146,640
Los Angeles	514,116	5,169,565	2,724,784	803,826	19,270	1,393,379	228,306	4,748,905
Orange	80,555	2,019,170	1,316,913	46,988	6,454	567,125	81,690	1,052,374
Riverside	93,886	1,200,424	863,418	132,881	11,442	138,203	54,480	1,044,493
San Bernardino	89,751	1,023,464	654,368	171,217	9,044	138,188	50,647	1,044,514
Ventura	21,081	492,673	400,000	13,380	2,415	56,458	20,420	342,759
SCAG	809,856	9,938,251	5,981,502	1,173,929	50,290	2,295,666	436,864	8,379,685

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	66,367	20,385	5,558	16,641	35,089
Los Angeles	3,662,453	560,066	340,676	778,368	1,323,159
Orange	1,014,793	126,383	52,950	235,920	254,269
Riverside	546,663	87,691	37,802	193,046	240,351
San Bernardino	474,373	63,483	37,066	190,270	219,782
Ventura	207,838	44,356	13,750	67,184	76,669
SCAG	5,972,487	902,364	487,802	1,481,429	2,149,319

Sources: SCAG, 2009-2013 American Community Survey

TABLE 12 Percent of Environmental Justice Population Groups by County: 2012

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	1.0%	0.8%	10.8%	31.1%	23.9%	20.1%	15.1%	9.9%
Los Angeles	54.1%	55.3%	11.4%	22.2%	20.4%	19.4%	18.7%	19.3%
Orange	16.8%	17.0%	12.2%	12.2%	16.1%	19.6%	23.3%	28.7%
Riverside	12.3%	11.8%	12.5%	20.6%	21.6%	21.3%	20.4%	16.0%
San Bernardino	11.3%	10.5%	9.5%	20.9%	21.5%	21.8%	20.7%	15.1%
Ventura	4.6%	4.6%	12.4%	12.3%	15.8%	19.8%	24.2%	27.9%
SCAG	100.0%	100.0%	11.5%	19.8%	19.8%	19.9%	20.1%	20.4%

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	21.2%	18.3%	12.3%	3.1%	0.9%	1.3%	0.7%	81.7%
Los Angeles	15.8%	52.1%	27.5%	8.1%	0.2%	14.0%	2.3%	47.9%
Orange	8.1%	65.7%	42.9%	1.5%	0.2%	18.5%	2.7%	34.3%
Riverside	13.5%	53.5%	38.5%	5.9%	0.5%	6.2%	2.4%	46.5%
San Bernardino	14.6%	49.5%	31.6%	8.3%	0.4%	6.7%	2.4%	50.5%
Ventura	7.8%	59.0%	47.9%	1.6%	0.3%	6.8%	2.4%	41.0%
SCAG	13.8%	54.3%	32.7%	6.4%	0.3%	12.5%	2.4%	45.7%

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	37.0%	11.4%	11.2%	9.3%	19.5%
Los Angeles	36.9%	5.6%	10.5%	7.8%	13.3%
Orange	33.0%	4.1%	5.3%	7.7%	8.3%
Riverside	24.4%	3.9%	5.4%	8.6%	10.7%
San Bernardino	22.9%	3.1%	6.0%	9.2%	10.6%
Ventura	24.9%	5.3%	5.1%	8.0%	9.2%
SCAG	32.6%	4.9%	8.3%	8.1%	11.7%

Sources: SCAG, 2009-2013 American Community Survey

TABLE 13   Breakdown of Environmental Justice Population Groups by County: 2040 Projection

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	282,024	92,482	42,037	29,668	22,891	18,633	13,103	8,187
Los Angeles	11,508,857	3,944,036	2,118,616	891,362	828,540	772,062	730,068	722,004
Orange	3,461,285	1,152,340	648,596	150,500	198,458	235,831	265,561	301,990
Riverside	3,167,584	1,048,714	598,264	223,273	236,206	228,931	207,481	152,823
San Bernardino	2,731,321	854,360	401,925	183,592	189,262	188,186	172,529	120,791
Ventura	965,299	312,223	187,496	40,740	52,653	64,015	75,207	79,608
SCAG	22,116,370	7,404,155	3,996,934	1,519,135	1,528,010	1,507,658	1,463,949	1,385,403

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	19,602	38,763	17,189	9,106	3,922	5,457	3,089	243,261
Los Angeles	622,980	5,702,440	2,437,714	621,671	31,370	2,244,378	367,307	5,806,417
Orange	92,920	1,951,702	945,968	46,041	9,655	830,572	119,466	1,509,583
Riverside	141,844	1,315,055	760,426	210,606	19,308	232,995	91,720	1,852,529
San Bernardino	124,668	1,095,280	472,648	286,400	15,407	234,912	85,913	1,636,041
Ventura	24,447	440,037	323,863	7,780	3,318	77,215	27,861	525,262
SCAG	1,026,461	10,543,277	4,957,808	1,181,604	82,980	3,625,529	695,356	11,573,093

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	117,597	38,828	11,663	39,994	69,183
Los Angeles	4,792,457	705,772	446,924	750,464	1,736,933
Orange	1,375,405	167,924	67,850	174,709	378,000
Riverside	965,497	160,578	68,516	167,430	481,175
San Bernardino	762,211	107,985	56,211	113,606	380,617
Ventura	300,830	64,374	18,816	66,256	128,112
SCAG	8,313,997	1,245,461	669,980	1,312,459	3,174,020

Sources: SCAG

TABLE 14 Percent of Environmental Justice Population Groups by County: 2040 Projection

County	Population	Households	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5
Imperial	1.3%	1.2%	14.9%	32.1%	24.8%	20.1%	14.2%	8.9%
Los Angeles	52.0%	53.3%	18.4%	22.6%	21.0%	19.6%	18.5%	18.3%
Orange	15.7%	15.6%	18.7%	13.1%	17.2%	20.5%	23.0%	26.2%
Riverside	14.3%	14.2%	18.9%	21.3%	22.5%	21.8%	19.8%	14.6%
San Bernardino	12.3%	11.5%	14.7%	21.5%	22.2%	22.0%	20.2%	14.1%
Ventura	4.4%	4.2%	19.4%	13.0%	16.9%	20.5%	24.1%	25.5%
SCAG	100.0%	100.0%	18.1%	20.5%	20.6%	20.4%	19.8%	18.7%

County	Households Under Poverty	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic African American	Non-Hispanic Native American	Non-Hispanic Asian/Pacific Islander	Non-Hispanic Other	Hispanic Total
Imperial	21.2%	13.7%	6.1%	3.2%	1.4%	1.9%	1.1%	86.3%
Los Angeles	15.8%	49.5%	21.2%	5.4%	0.3%	19.5%	3.2%	50.5%
Orange	8.1%	56.4%	27.3%	1.3%	0.3%	24.0%	3.5%	43.6%
Riverside	13.5%	41.5%	24.0%	6.6%	0.6%	7.4%	2.9%	58.5%
San Bernardino	14.6%	40.1%	17.3%	10.5%	0.6%	8.6%	3.1%	59.9%
Ventura	7.8%	45.6%	33.6%	0.8%	0.3%	8.0%	2.9%	54.4%
SCAG	13.9%	47.7%	22.4%	5.3%	0.4%	16.4%	3.1%	52.3%

County	Foreign Born	Non-English Speaking	Households Without Car	Age 5 & Above	Below High School
Imperial	41.7%	13.8%	12.6%	14.2%	24.5%
Los Angeles	41.6%	6.1%	11.3%	6.5%	15.1%
Orange	39.7%	4.9%	5.9%	5.0%	10.9%
Riverside	30.5%	5.1%	6.5%	5.3%	15.2%
San Bernardino	27.9%	4.0%	6.6%	4.2%	13.9%
Ventura	31.2%	6.7%	6.0%	6.9%	13.3%
SCAG	37.6%	5.6%	9.0%	5.9%	14.4%

Sources: SCAG

DEMOGRAPHIC TRENDS IN ENVIRONMENTAL JUSTICE AREAS IN THE SCAG REGION

In 2012, 67 percent of the population in the SCAG region belonged to a racial or ethnic minority group, and 16 percent of all households were in poverty. Since the minority population represents nearly a super-majority of the region's total population, it is important to identify where minority and low-income groups are concentrated at rates that are higher than is seen in the region as a whole. Defining these areas for additional analysis helps to determine if there will be disproportionate and adverse impacts to environmental justice groups as a result of the Plan, in accordance with federal and state guidelines. Environmental Justice Areas (EJAs), therefore, consist of every transportation analysis zone (TAZ) that has a higher concentration of minority population or households in poverty than is seen in the region as a whole.

On their own, SCAG's EJAs represent 12.4 million people – 68 percent of the total population in the region. Within these areas, 80 percent of the population is minority and 17 percent of all households are at or below the poverty level. For analysis purposes, the boundary of EJAs identified in 2012 are held constant and historical trends are identified for these same areas in 1990 and 2000.

TABLE 15 shows that population in EJAs has grown steadily from 1990 to 2012, largely keeping pace with the region. In terms of diversity, minorities made up 63 percent of the total residents in EJAs for 1990, and grew to 80 percent in 2012. Through 2040, racial and ethnic minority groups are anticipated to grow to 85 percent of the total population in EJAs. In terms of poverty, around 16 to 17 percent of total households have been in poverty from 1990 to 2012, and this trend will likely continue through 2040.

Comparing EJAs to the region shows that these areas have steadily represented around 67 to 68 percent of the region's total population for years 1990, 2000, 2012, and will continue to do so through 2040. In terms of the region's minority population, 85 percent of all minorities in the SCAG region lived in EJAs in 1990. This number has shown a downward trend, though, as 80 percent of the region's minorities lived in EJAs in 2012 and 74 percent are anticipated for 2040. This same trend will be seen for households in poverty, as 80 percent of all households in poverty lived in EJAs in 1990 and 74 percent are likely to do so in 2040. **FIGURES 5 - 8** provide more information on important trends for EJAs, specifically the breakdown of households by income quintile from 1990 through 2040.

TABLE 15 Trends and Demographic Changes in Environmental Justice Areas Region (1990 to 2040)

	1990	2000	2012	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**9,878,124**	**11,259,094**	**12,406,815**	**14,902,292**	2,528,691	26%	2,495,477	20%
Race & Ethnicity								
Hispanic	4,137,112	5,711,966	7,067,874	8,888,714	2,930,762	71%	1,820,840	26%
Non-Hispanic	5,741,012	5,547,128	5,338,941	6,013,578	-402,071	-7%	674,637	13%
White	3,663,412	2,972,207	2,509,392	2,246,836	-1,154,020	-32%	-262,556	-10%
African American	1,057,796	1,044,450	1,003,275	948,037	-54,521	-5%	-55,238	-6%
Asian and Pacific Islanders	952,459	1,215,831	1,552,205	2,361,900	599,746	63%	809,695	52%
Native American	43,595	42,007	34,613	56,413	-8,982	-21%	21,800	63%
Other	23,751	272,633	239,456	400,392	215,705	908%	160,936	67%
Immigration								
Foreign Born Population	3,203,386	4,073,996	4,621,034	6,104,375	1,417,648	44%	1,483,341	32%
Language								
Non-English Speaking Population*	1,360,106	625,598	807,823	1,054,544	-552,283	-41%	246,721	31%
Age								
Population 65+ Years	897,285	1,082,986	1,257,984	2,499,951	360,699	40%	1,241,967	99%
Children Ages 5 and Under	1,066,024	933,268	1,092,776	1,188,039	26,752	3%	95,263	9%
Education								
Individuals without High School Diploma (or equivalent)**	2,017,563	2,349,751	1,943,619	2,646,024	-73,944	-4%	702,405	36%
Households	**3,142,047**	**3,450,769**	**3,697,245**	**4,685,136**	555,198	18%	987,891	27%
Poverty								
Households in Poverty	511,679	661,828	631,471	756,797	119,792	23%	125,326	20%
Transportation								
Households without Vehicles	356,854	440,701	380,053	505,334	23,199	7%	125,281	33%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey

FIGURE 5 Households by Income Quintile in Environmental Justice Areas: 1990

- Quintile 1 — 25%
- Quintile 2 — 23%
- Quintile 3 — 19%
- Quintile 4 — 17%
- Quintile 5 — 16%
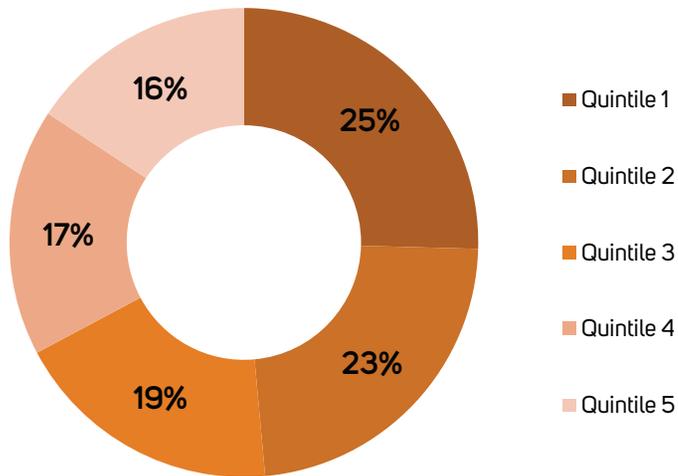
Source:SCAG, 1990 Census

FIGURE 7 Households by Income Quintile in Environmental Justice Areas:2012

- Quintile 1 — 24%
- Quintile 2 — 22%
- Quintile 3 — 21%
- Quintile 4 — 18%
- Quintile 5 — 15%
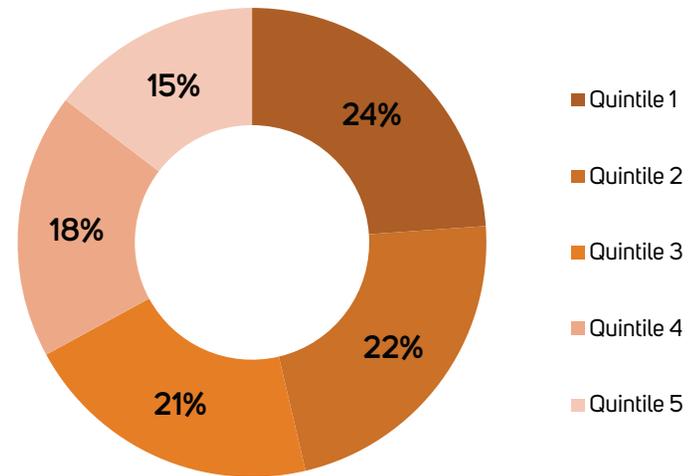
Source:SCAG, 2009-2013 American Community Survey

FIGURE 6 Households by Income Quintile in Environmental Justice Areas: 2000

- Quintile 1 — 24%
- Quintile 2 — 23%
- Quintile 3 — 21%
- Quintile 4 — 18%
- Quintile 5 — 14%

Source:SCAG, 2000 Census

FIGURE 8 Households by Income Quintile in Environmental Justice Areas:2040 Projection

- Quintile 1 — 23%
- Quintile 2 — 22%
- Quintile 3 — 21%
- Quintile 4 — 19%
- Quintile 5 — 15%
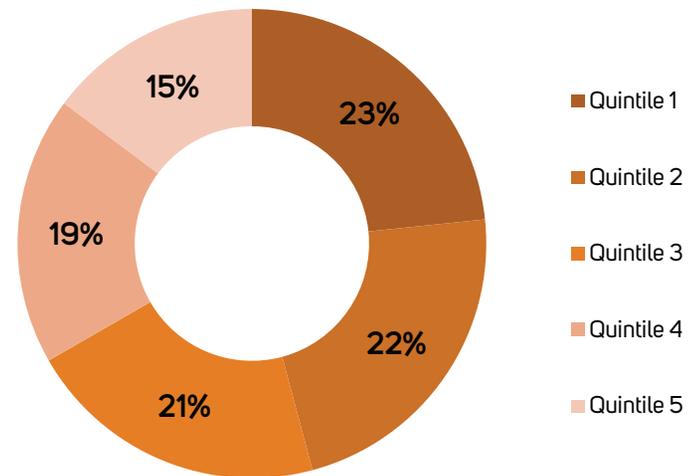
Source:SCAG

DEMOGRAPHIC TRENDS IN SB 535 DISADVANTAGED COMMUNITIES IN THE SCAG REGION

SB 535 Disadvantaged Communities (DACs) comprise a selection of census tracts where environmental exposure and sensitive populations are concentrated and show some of the highest vulnerabilities in the State of California, as determined Cal/EPA. Taken as a whole, DACs represent 6.4 million people–35 percent of the total population in the region. Within these areas, 88 percent of the population is minority and 25 percent of all households are at or below the poverty level. Similar to the treatment of Environmental Justice Areas, DACs are held constant through historic years to display trends since 1990.

Population in DACs grew by 19 percent from 1990 to 2012, which is slower than the region's growth during that same period (26 percent). Minority population, however, is on an upward trend. In 1990, 75 percent of the total residents in DACs were racial and/or ethnic minorities. This increased to 88 percent in 2012, and is expected to grow to 89 percent in 2040. Alternatively, the rate of households in poverty for this area is experiencing a small decline, from 20 percent of the total households in 1990 to an anticipated 17 percent of the total households in 2040. Indeed, growth in total households numbered 13 percent from 1990 to 2040, while households in poverty increased at a slower rate of 5 percent.

TABLE 16 Regional Trends and Demographic Changes in SB 535 Disadvantaged Communities (1990 to 2040)

	1990	2000	2012	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**5,438,674**	**5,952,488**	**6,487,815**	**7,810,521**	1,049,141	19%	1,322,706	20%
Race & Ethnicity								
Hispanic	2,838,994	3,738,601	4,364,579	5,111,860	1,525,585	54%	747,281	17%
Non-Hispanic	2,599,680	2,213,888	2,123,236	2,698,661	-476,444	-18%	575,425	27%
White	1,380,154	920,271	797,169	887,686	-582,985	-42%	90,517	11%
African American	718,713	634,862	559,303	500,309	-159,409	-22%	-58,994	-11%
Asian and Pacific Islanders	466,053	521,388	656,183	1,104,634	190,130	41%	448,451	68%
Native American	20,752	19,029	14,548	25,110	-6,204	-30%	10,563	73%
Other	14,009	118,337	96,033	180,922	82,024	586%	84,889	88%
Immigration								
Foreign Born Population	2,034,754	2,438,371	2,638,414	3,376,002	603,660	30%	737,589	28%
Language								
Non-English Speaking Population*	969,027	448,022	524,724	648,833	-444,303	-46%	124,109	24%
Age								
Population 65+ Years	427,570	463,126	592,590	1,230,299	165,021	39%	637,708	108%
Children Ages 5 and Under	643,641	551,652	615,334	662,402	-28,307	-4%	47,068	8%
Education								
Individuals without High School Diploma (or equivalent)**	1,326,494	1,524,820	1,236,485	1,571,444	-90,010	-7%	334,959	27%
Households	**1,581,831**	**1,641,795**	**1,784,274**	**2,297,439**	202,443	13%	513,165	29%
Poverty								
Households in Poverty	318,880	388,675	335,361	393,972	16,480	5%	58,612	17%
Transportation								
Households without Vehicles	229,417	277,353	219,643	281,675	-9,774	-4%	62,032	28%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey
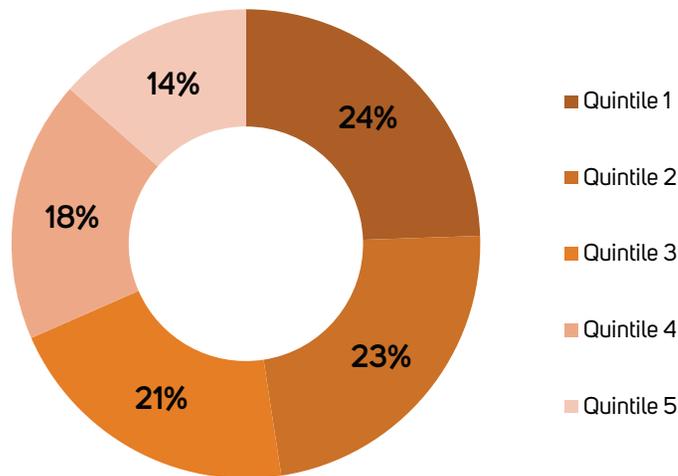
FIGURE 9 Households by Income Quintile in SB 535 Disadvantaged Communities: 1990

- Quintile 1 — 31%
- Quintile 2 — 25%
- Quintile 3 — 17%
- Quintile 4 — 14%
- Quintile 5 — 12%
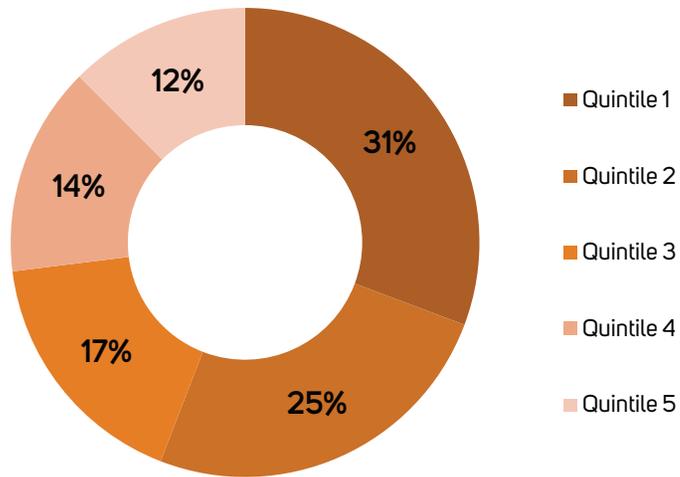
Source: SCAG, 1990 Census

FIGURE 11 Households by Income Quintile in SB 535 Disadvantaged Communities: 2012

- Quintile 1 — 26%
- Quintile 2 — 24%
- Quintile 3 — 21%
- Quintile 4 — 17%
- Quintile 5 — 13%

Source:SCAG, 2009-2013 American Community Survey

FIGURE 10 Households by Income Quintile in SB 535 Disadvantaged Communities: 2000

- Quintile 1 — 29%
- Quintile 2 — 25%
- Quintile 3 — 21%
- Quintile 4 — 16%
- Quintile 5 — 9%

Source:SCAG, 2000 Census

FIGURE 12 Households by Income Quintile in SB 535 Disadvantaged Communities: 2040 Projection

- Quintile 1 — 24%
- Quintile 2 — 23%
- Quintile 3 — 21%
- Quintile 4 — 18%
- Quintile 5 — 14%
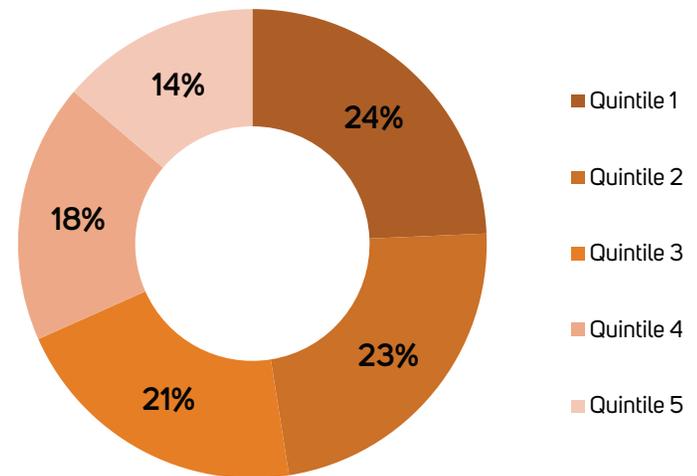
Source:SCAG

DEMOGRAPHIC TRENDS IN COMMUNITIES OF CONCERN IN THE SCAG REGION

Communities of Concern (CoCs) include all Census Designated Places (CDPs) and City of Los Angeles Community Planning Areas (CPAs) that have the highest concentration of minority population and households in poverty throughout the entire region. In fact, only communities that score in the highest third of all CDPs and CPAs in both criteria are included in SCAG's CoC geography. Taken as a whole, CoCs represent 4.2 million people – 23 percent of the total population in the region. Within these areas, 91 percent of the population is minority and 40 percent of all households are at or below the poverty level. Similar to other environmental justice geographies, CoCs are held constant through historic years to display trends for these areas since 1990. Initial analysis included here depicts data displaying existing conditions for these areas as a whole, and for each CDP or CPA that qualify as a CoC.

Population in CoCs grew much faster than the region from 1990 to 2012, and incurred an increase of 44 percent during this period. Growth for Hispanics also occurred faster here than in the greater region, with an increase of 82 percent – as compared to the greater region's increase of 75 percent. Households incurred an increase in total number of 38 percent from 1990 to 2012 – faster than the 35 percent growth in total households for CoCs.

To illustrate existing conditions at the community level, SCAG has also included summary data in the addendum to this Appendix that shows current figures and projected trends for all CDPs and CPAs identified as a Community of Concern. **TABLE 18** lists the areas that are included in this analysis.

TABLE 17 Trends and Demographic Changes in Communities of Concern (1990 to 2040)

	1990	2000	2012	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**2,951,564**	**3,215,279**	**4,264,973**	**5,008,545**	1,313,409	44%	743,572	17%
Race & Ethnicity								
Hispanic	1,684,508	2,147,527	3,065,339	3,455,969	1,380,831	82%	390,630	13%
Non-Hispanic	1,267,056	1,067,752	1,199,633	1,552,576	-67,422	-5%	352,943	29%
White	555,428	362,819	346,708	456,226	-208,720	-38%	109,518	32%
African American	490,042	418,950	480,158	389,168	-9,885	-2%	-90,990	-19%
Asian and Pacific Islanders	204,304	227,817	310,570	585,932	106,266	52%	275,362	89%
Native American	9,325	9,195	8,184	15,364	-1,142	-12%	7,180	88%
Other	7,956	48,971	54,014	105,886	46,058	579%	51,872	96%
Immigration								
Foreign Born Population	1,171,329	1,356,897	1,751,633	2,209,042	580,304	50%	457,409	26%
Language								
Non-English Speaking Population*	591,205	271,120	384,790	470,147	-206,415	-35%	85,357	22%
Age								
Population 65+ Years	216,679	231,856	360,935	749,969	144,256	67%	389,034	108%
Children Ages 5 and Under	355,337	307,653	307,653	437,927	-47,684	-13%	130,274	42%
Education								
Individuals without High School Diploma (or equivalent)**	766,640	867,423	919,373	1,145,453	152,733	20%	226,080	25%
Households	**832,372**	**861,697**	**1,122,675**	**1,399,085**	290,304	35%	276,410	25%
Poverty								
Households in Poverty	182,633	213,431	252,010	278,875	69,377	38%	26,865	11%
Transportation								
Households without Vehicles	129,933	151,936	146,271	180,617	16,338	13%	34,346	23%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
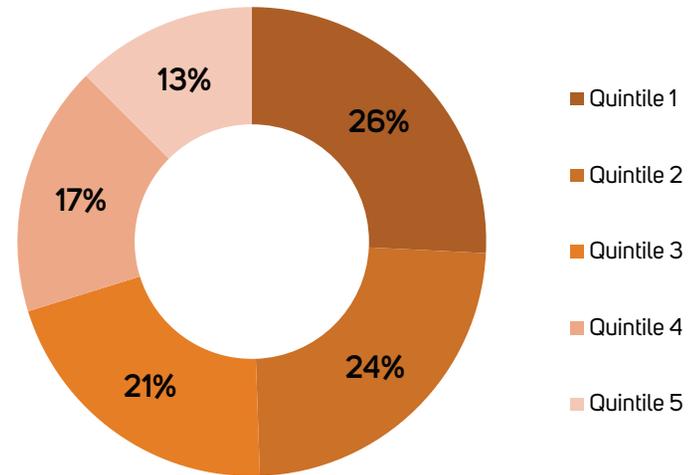Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey

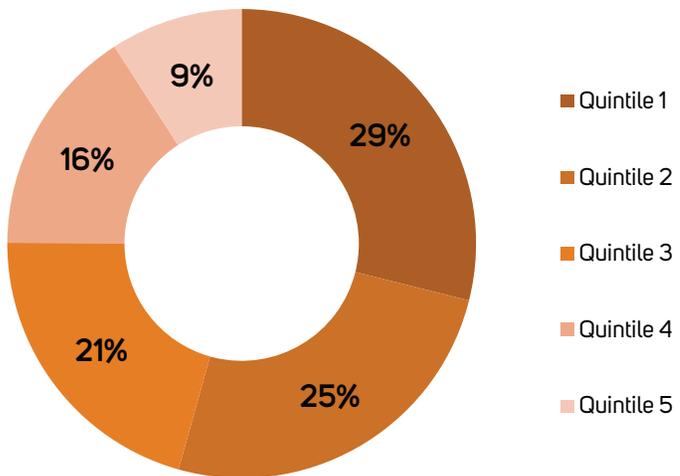**FIGURE 13** Households by Income Quintile in Communities of Concern: 1990

- Quintile 1 — 32%
- Quintile 2 — 25%
- Quintile 3 — 17%
- Quintile 4 — 14%
- Quintile 5 — 12%
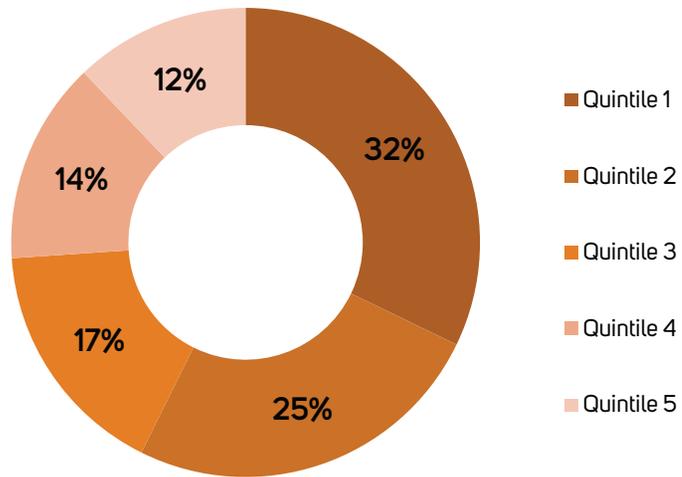
Source:SCAG, 1990 Census

FIGURE 15 Households by Income Quintile in Communities of Concern: 2012

- Quintile 1 — 29%
- Quintile 2 — 25%
- Quintile 3 — 21%
- Quintile 4 — 15%
- Quintile 5 — 10%
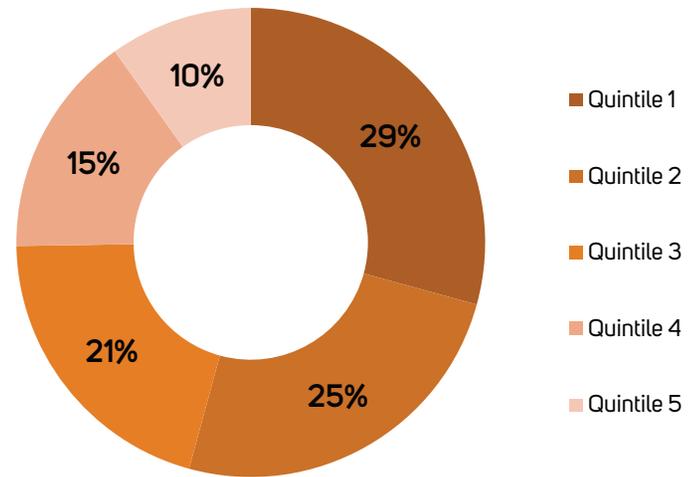
Source:SCAG, 2009-2013 American Community Survey

FIGURE 14 Households by Income Quintile in Communities of Concern: 2000

- Quintile 1 — 30%
- Quintile 2 — 26%
- Quintile 3 — 20%
- Quintile 4 — 15%
- Quintile 5 — 9%
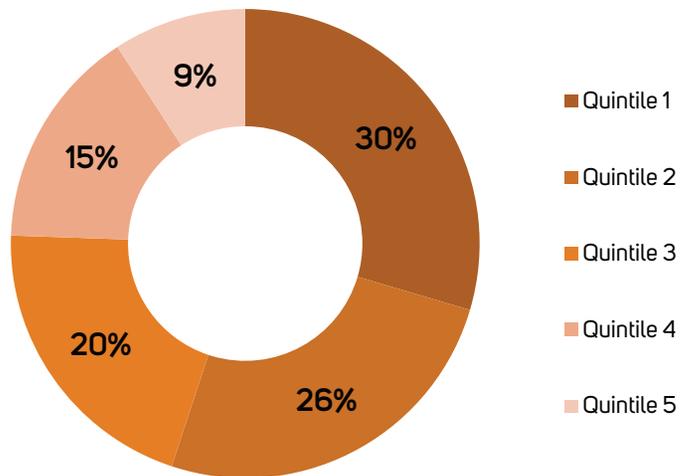
Source:SCAG, 2000 Census

FIGURE 16 Households by Income Quintile in Communities of Concern: 2040 Projection

- Quintile 1 — 27%
- Quintile 2 — 24%
- Quintile 3 — 21%
- Quintile 4 — 16%
- Quintile 5 — 12%
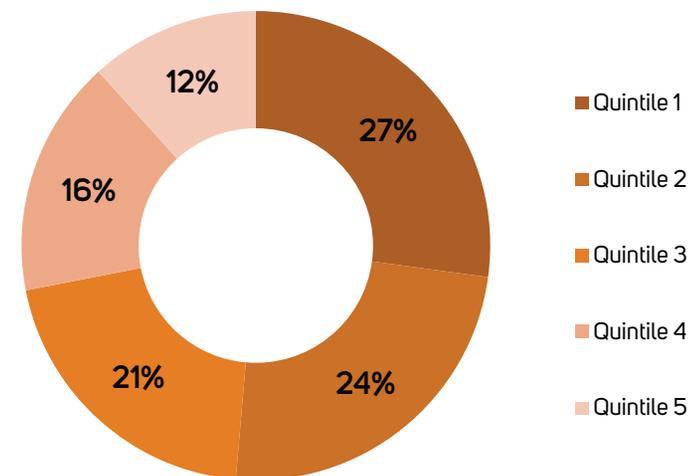
Source:SCAG

TABLE 18 Census Designated Places (CDPs) and City of Los Angeles Community Planning Areas (CPAs) included in SCAG's Communities of Concern Analysis

Imperial County	Los Angeles County	Los Angeles County (Con't)	Orange County	Riverside County	San Bernardino County	Ventura County
Brawley	Alondra Park	Maywood	Midway City	Coachella	Adelanto	Santa Paula
Calexico	Arleta - Pacoima	Mission Hills - Panorama City - North Hills	Santa Ana	Garnet	Baker	Saticoy
Calipatria	Azusa	Northeast Los Angeles	Stanton	Good Hope	Bloomington	
Desert Shores	Bell	Paramount		Highgrove	Colton	
El Centro	Bell Gardens	Pomona		Home Gardens	Montclair	
Heber	Boyle Heights	Rosemead		Indio Hills	Muscoy	
Holtville	Central City North	South El Monte		Mead Valley	Rialto	
Niland	Commerce	South Gate		Mecca	San Bernardino	
Seeley	Compton	South Los Angeles		Mesa Verde		
Westmorland	Cudahy	Southeast Los Angeles		North Shore		
Winterhaven	East Los Angeles	Sun Valley - La Tuna Canyon		Oasis		
	East Rancho Dominguez	Vernon		Perris		
	El Monte	Walnut Park		Ripley		
	Florence-Graham	West Adams - Baldwin Hills - Leimert		Thermal		
	Harbor Gateway	West Athens		Vista Santa Rosa		
	Hawaiian Gardens	West Rancho Dominguez				
	Hawthorne	Westlake				
	Huntington Park	Westmont				
	Inglewood	Willowbrook				
	Lennox	Wilmington - Harbor City				
	Lynwood					

Source:SCAG

DEMOGRAPHIC TRENDS IN URBAN AND RURAL AREAS IN THE SCAG REGION

Although Urban Areas represent 13 percent of the total land mass in the SCAG region, they were home to 98 percent of the regional population in 2012. Alternatively, Rural Areas are home to just over two percent of the total population. Of the people that live in urban communities in 2012, 68 percent were minority and 14 percent of the households were at or below the poverty level. In Rural Areas, 47 percent of the population is minority and 14 percent of the households are at or below the poverty level. For the purposes of this historical analysis, the boundary for current Urban and Rural Areas is held constant to compare trends in these same areas over time.

TABLE 19 and FIGURES 17 - 20 provide information on historic trends in both Urban and Rural Areas for the SCAG region.

TABLE 19 Trends and Demographic Changes in Urban: (1990 to 2040)

	1990	2000	2012	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**14,144,349**	**15,963,993**	**17,883,655**	21,251,260	3,739,305	26%	3,367,605	19%
Race & Ethnicity								
Hispanic	4,677,734	6,532,704	8,224,397	11,097,163	3,546,663	76%	2,872,766	35%
Non-Hispanic	9,466,615	9,431,290	9,659,258	10,154,097	192,642	2%	494,839	5%
White	6,936,638	6,072,996	5,752,758	4,741,539	-1,183,880	-17%	-1,011,218	-18%
African American	1,157,173	1,164,279	1,156,852	1,132,840	-321	0%	-24,012	-2%
Asian and Pacific Islanders	1,285,561	1,707,354	2,279,053	3,537,535	993,492	77%	1,258,482	55%
Native American	58,020	54,640	45,001	74,998	-13,019	-22%	29,998	67%
Other	29,224	432,021	425,594	667,184	396,370	1356%	241,590	57%
Immigration								
Foreign Born Population	3,914,044	5,031,313	5,891,147	8,048,925	1,977,103	51%	2,157,778	37%
Language								
Non-English Speaking Population*	1,495,513	672,719	887,108	1,196,579	-608,405	-41%	309,471	35%
Age								
Population 65+ Years	1,365,173	1,581,482	2,041,245	3,826,324	676,071	50%	1,785,079	87%
Children Ages 5 and Under	1,399,051	1,230,167	1,448,561	1,588,915	49,511	4%	140,354	10%
Education								
Individuals without High School Diploma (or equivalent)**	2,359,177	2,679,734	2,105,791	3,044,154	-253,386	-11%	938,364	45%
Households	**4,771,563**	**5,223,255**	**5,741,764**	7,101,132	970,201	20%	1,359,367	24%
Poverty								
Households in Poverty	619,141	807,150	790,570	981,843	171,428	28%	191,273	24%
Transportation								
Households without Vehicles	432,133	533,447	480,846	647,845	48,713	11%	166,998	35%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey

TABLE 19 Trends and Demographic Changes in Rural Areas: (1990 to 2040) Continued

	1990	2000	2012	2040	Difference From 1990 to 2012	% Change	Future Growth From 2012 to 2040	% Change
Total Population	**491,021**	**706,805**	**434,281**	865,110	-56,739	-12%	430,829	99%
Race & Ethnicity								
Hispanic	107,767	190,915	155,288	475,930	47,521	44%	320,642	206%
Non-Hispanic	383,254	515,889	278,993	389,180	-104,260	-27%	110,187	39%
White	347,565	443,821	228,744	216,269	-118,821	-34%	-12,476	-5%
African American	16,350	28,531	17,077	48,764	727	4%	31,687	186%
Asian and Pacific Islanders	12,274	17,844	16,613	87,994	4,339	35%	71,381	430%
Native American	6,454	7,350	5,289	7,982	-1,165	-18%	2,692	51%
Other	610	18,343	11,270	28,172	10,660	1747%	16,902	150%
Immigration								
Foreign Born Population	62,018	103,569	81,340	265,072	19,322	31%	183,732	226%
Language								
Non-English Speaking Population*	25,303	16,771	15,256	48,882	-10,047	-40%	33,626	220%
Age								
Population 65+ Years	60,431	96,511	57,692	170,610	-2,738	-5%	112,918	196%
Children Ages 5 and Under	47,476	43,971	32,868	61,540	-14,608	-31%	28,672	87%
Education								
Individuals without High School Diploma (or equivalent)**	75,452	92,707	43,528	129,866	-31,924	-42%	86,337	198%
Households	**168,073**	**239,464**	**141,588**	303,023	-26,485	-16%	161,436	114%
Poverty								
Households in Poverty	18,259	30,107	19,286	44,618	1,027	6%	25,332	131%
Transportation								
Households without Vehicles	8,231	13,157	6,956	22,135	-1,275	-15%	15,180	218%

*   Non-English speaking population is measured for individuals 5 years of age or older
**   Figures for education is constrained to individuals 25 years of age or older
Sources: SCAG, 1990 Census, 2000 Census, 2009-2013 American Community Survey

FIGURE 17 Households by Income Quintile in Urban and Rural Areas: 1990

URBAN

- 20% Quintile 1
- 20% Quintile 2
- 20% Quintile 3
- 20% Quintile 4
- 20% Quintile 5

RURAL

- 23% Quintile 1
- 20% Quintile 2
- 19% Quintile 3
- 19% Quintile 4
- 19% Quintile 5

■ Quintile 1 ■ Quintile 2 ■ Quintile 3 ■ Quintile 4 ■ Quintile 5
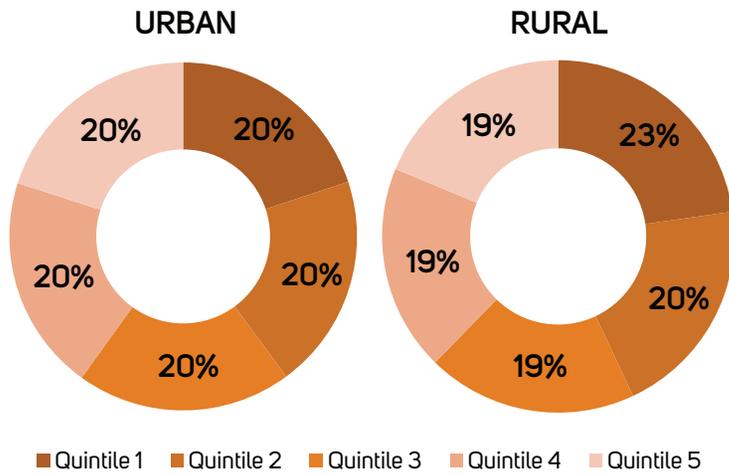
Source:SCAG, 1990 Census

FIGURE 19 Households by Income Quintile in Urban and Rural Areas: 2012

URBAN

- 20% Quintile 1
- 20% Quintile 2
- 20% Quintile 3
- 20% Quintile 4
- 20% Quintile 5

RURAL

- 21% Quintile 1
- 21% Quintile 2
- 20% Quintile 3
- 20% Quintile 4
- 18% Quintile 5

■ Quintile 1 ■ Quintile 2 ■ Quintile 3 ■ Quintile 4 ■ Quintile 5
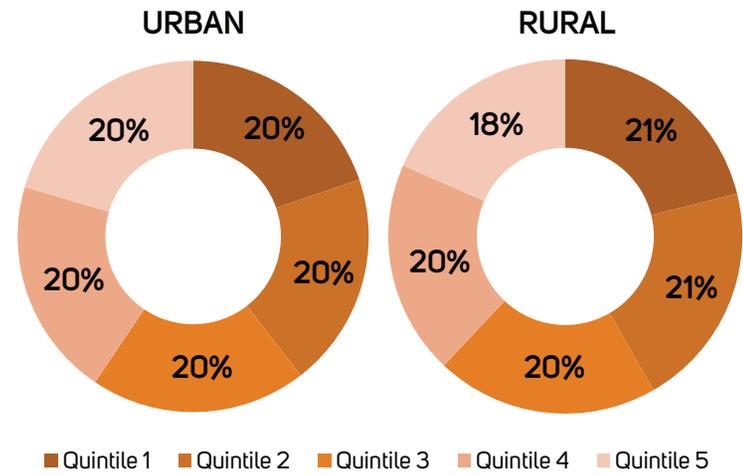
Source:SCAG, 2009-2013 American Community Survey

FIGURE 18 Households by Income Quintile in Urban and Rural Areas: 2000

URBAN

- 20% Quintile 1
- 20% Quintile 2
- 20% Quintile 3
- 20% Quintile 4
- 20% Quintile 5

RURAL

- 25% Quintile 1
- 24% Quintile 2
- 21% Quintile 3
- 18% Quintile 4
- 13% Quintile 5

■ Quintile 1 ■ Quintile 2 ■ Quintile 3 ■ Quintile 4 ■ Quintile 5
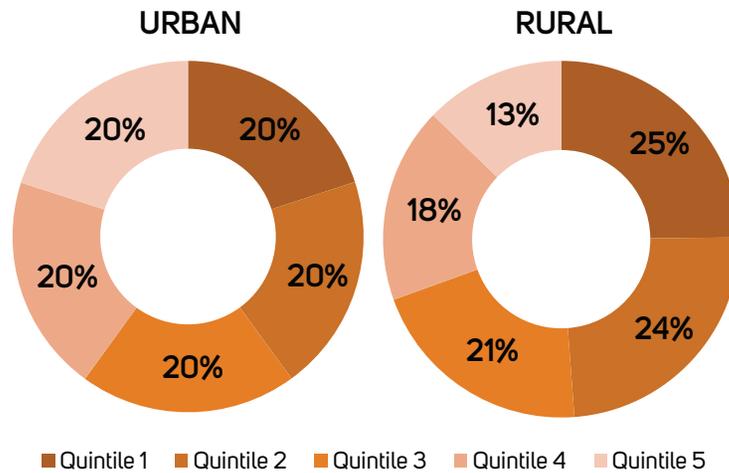
Source:SCAG, 2000 Census

FIGURE 20 Households by Income Quintile in Urban and Rural Areas: 2040 Projections

URBAN

- 20% Quintile 1
- 21% Quintile 2
- 20% Quintile 3
- 20% Quintile 4
- 19% Quintile 5

RURAL

- 23% Quintile 1
- 22% Quintile 2
- 21% Quintile 3
- 19% Quintile 4
- 16% Quintile 5

■ Quintile 1 ■ Quintile 2 ■ Quintile 3 ■ Quintile 4 ■ Quintile 5
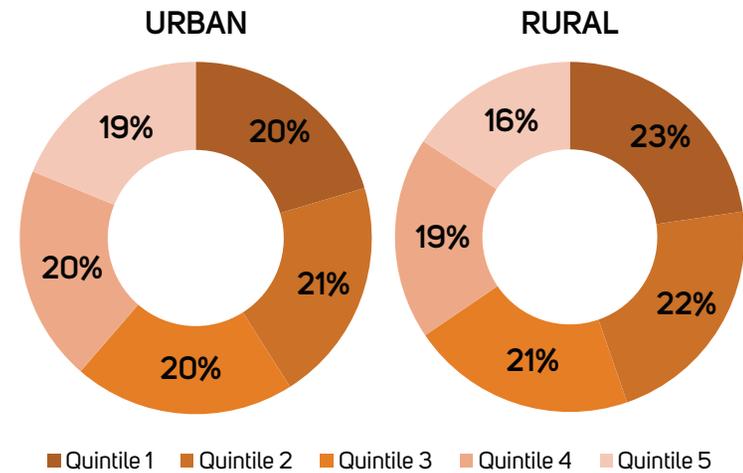
Source:SCAG

ASSESSMENT OF ENVIRONMENTAL JUSTICE IMPACTS BY PERFORMANCE AREA

The following section describes the methodology and findings for each of the 18 performance areas analyzed as part of this Environmental Justice Appendix. Each section is comprised of extensive data including maps, charts and graphs to illustrate performance results.

BENEFITS AND BURDENS

This section will compare the overall benefits of the 2016 RTP/SCS, in terms of transportation improvements, with the overall burdens of paying for the Plan. Included in the discussion is a summary of results listing (1) a breakdown of revenue sources paid by each environmental justice population group for the Plan, (2) an analysis of who will be benefitting from the 2016 RTP/SCS based on each groups' use of the transportation system and (3) a comparison of overall investments of the Plan versus who will be benefiting from these improvements.

2016 RTP/SCS REVENUE SOURCES IN TERMS OF TAX BURDENS

METHODOLOGY

In order to estimate the share of funding that minority and low-income groups will pay for the Plan, SCAG looks at how each group contributes to the region's sales, gasoline and income tax revenue that will fund the 2016 RTP/SCS.

The Bureau of Labor Statistics' (BLS) Consumer Expenditure Survey (CEX) consists of two surveys, the Quarterly Interview Survey and the Diary Survey, which provide information on the buying habits of American consumers, including data on their expenditures, income and consumer unit characteristics (families and single consumers). The CEX is important because it is the only federal survey to provide information on the complete range of consumers' expenditures and incomes, including the socioeconomic characteristics of those consumers. It is used by policymakers to examine the impact of policy changes on economic groups, by businesses and academic researchers studying consumers' spending habits and trends and by other federal agencies. Most importantly, the CEX is used to regularly revise the Consumer Price Index's market basket of consumer goods and services, which is the primary indicator for inflation in the United States.

SCAG uses CEX survey data to assess regional expenditures by taxable sales category and adjusted gross income. In particular, the tabulation showing the share of aggregate expenditures by income quintile is used to estimate transportation funding contributions (i.e. taxes paid) by income quintile.

TABLE 20 presents taxable sales and expenditures by income quintile in 2012 for the SCAG region, using data collected by the California Board of Equalization and Franchise Tax Board. As shown on the next page, households in the SCAG region spent $27,843 million at service (gas) stations in 2012. The lowest income quintile's share of gasoline consumption—90 percent of service station sales are gasoline—was just nine percent, while households in the highest income quintile accounted for more than 35 percent of gasoline sales. In terms of expenditures on vehicle purchases, the lowest income quintile accounted for just 6.8 percent of all new vehicle sales and just 5.7 percent for used vehicles. This is not surprising because many low-income households cannot afford the cost of vehicle ownership including maintenance, insurance and the purchase of gasoline. In fact, the CEX indicates that households in the lower-income quintiles predominately owned used and older cars. This situation has implications in terms of fuel efficiency—low income households pay proportionally more on gasoline and gasoline taxes than more affluent households that normally own newer vehicles that are more fuel efficient and allow them to travel further on the same amount of gasoline.

A mileage-based user fee transportation funding system could correct the equity issue inherent with a funding system based on gasoline consumption, prices and taxes. Different funding sources (i.e., income taxes, property taxes, sales, fuel, etc.) can impose disproportionate burdens on lower income and minority groups. Sales and gasoline taxes, which are the primary sources of funding for the region's transportation system, were evaluated for the purposes of this analysis. The amount of taxes paid was analyzed to demonstrate how tax burdens fall on various demographic groups. As in previous environmental justice appendices, the 2016 RTP/SCS environmental justice analysis examined in detail the incidence and distribution of the region's burden of taxation.

TABLE 20 Taxable Sales in the SCAG Region by Retail Categories in 2012 and Shares by Income Quintile (in $1,000s)

Type of business	Share of Sales Tax by Income Quintile					Total
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
Motor Vehicle and Parts Dealers	1,857,596	2,996,123	5,183,293	8,359,183	11,594,996	29,991,191
New Car Dealers	1,536,942	1,514,340	3,887,558	6,034,756	9,628,487	22,602,082
Used Car Dealers	178,766	429,666	555,116	909,512	1,063,189	3,136,250
Other Motor Vehicle Dealers	9,694	73,917	96,941	387,764	643,445	1,211,761
Auto. Parts, Accessories and Tire Stores	261,969	415,537	554,049	695,572	1,084,009	3,011,136
Furniture and Home Furnishings Stores	295,360	581,770	720,500	984,535	1,888,516	4,470,682
Furniture Stores	167,297	334,593	451,701	535,349	1,296,549	2,785,488
Home Furnishings Stores	111,334	219,294	271,588	371,114	711,864	1,685,194
Electronics and Appliance Stores	633,048	995,142	1,268,560	1,857,271	2,643,039	7,397,061
Bldg. Matrl. and Garden Equip. and Supplies	996,862	1,706,285	1,983,021	2,606,825	4,935,384	12,228,378
Building Material and Supplies Dealers	898,361	1,600,925	1,822,636	2,525,201	4,664,567	11,511,691
Lawn and Garden Equip. and Supplies Stores	60,689	99,958	118,522	147,795	287,022	713,986
Food and Beverage Stores	1,199,286	1,576,992	1,973,997	2,632,915	3,644,726	11,027,916
Supermarkets and Other Grocery Stores	978,121	1,216,687	1,471,157	1,860,815	2,425,421	7,952,200
Convenience Stores	147,075	182,947	221,210	279,801	364,698	1,195,731
Specialty Food Stores	46,934	58,091	71,171	91,945	116,567	384,709
Beer, Wine, and Liquor Stores	100,183	171,957	240,739	370,828	611,568	1,495,276
Health and Personal Care Stores	485,687	763,222	923,339	1,262,252	1,901,384	5,335,885
Pharmacies and Drug Stores	303,682	469,054	553,243	682,533	996,739	3,005,252
Health and Personal Care Stores	188,768	302,960	377,535	573,294	887,907	2,330,463
Gasoline Stations	2,505,930	4,162,628	5,234,609	6,139,528	9,800,970	27,843,665
Clothing and Clothing Accessories Stores	1,521,078	2,097,805	2,445,191	3,881,952	6,913,989	16,860,015
Men's Clothing Stores	37,239	53,531	64,237	119,630	190,850	465,488
Women's Clothing Stores	203,449	357,341	404,290	665,123	978,122	2,608,325
Family Clothing Stores, Accessories, and Other Stores	974,911	1,190,417	1,375,137	2,031,919	4,689,833	10,262,217
Shoe Stores	180,731	242,145	287,766	426,385	615,890	1,752,917
Jewelry, Luggage, and Leather Goods Stores	168,405	205,632	237,540	350,992	810,117	1,772,686
Sporting Goods, Hobby, Book, and Music Stores	386,688	660,558	794,631	1,142,078	1,921,994	4,905,950
Sporting Goods Stores	153,800	315,803	336,310	479,856	764,899	2,050,669
Hobby, Toy and Musical Instrument Stores	121,392	198,060	273,816	415,288	817,798	1,826,354
Book, Periodical, and Music Stores	97,757	145,607	176,992	243,878	364,789	1,029,023

TABLE 20 Taxable Sales in the SCAG Region by Retail Categories in 2012 and Shares by Income Quintile

Taxable Sales in the SCAG Region by Retail Categories in 2012 and Shares by Income Quintile						
Type of business	Share of Sales Tax by Income Quintile					Total
	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	
General Merchandise Stores	2,351,402	3,470,107	4,124,894	5,458,327	8,448,610	23,853,340
Miscellaneous Store Retailers	782,848	1,349,616	1,555,069	1,827,826	3,340,388	8,855,748
Florists	14,987	30,774	32,772	46,760	74,536	199,829
Office Supplies and Stationery Stores	214,928	361,363	418,047	444,027	923,482	2,361,847
Gift, Novelty, and Souvenir Stores	64,628	102,443	125,819	160,883	233,762	687,536
Used Merchandise Stores	30,378	51,075	59,086	62,758	130,524	333,821
Other Miscellaneous Store Retailers	479,817	806,725	933,270	991,270	2,061,631	5,272,715
Nonstore Retailers	206,683	347,501	402,011	426,994	888,058	2,271,247
Food Services and Drinking Places	2,336,934	3,289,018	4,673,868	6,981,950	11,569,265	28,851,035
Full-Service Restaurants	1,111,177	1,563,879	2,222,354	3,319,813	5,501,013	13,718,236
Limited-Service Eating Places	1,103,710	1,553,370	2,207,420	3,297,505	5,464,047	13,626,052
Special Food Services	85,093	119,760	170,186	254,228	421,262	1,050,528
Drinking Places (Alcoholic Beverages)	33,760	52,237	73,679	111,774	184,769	456,219
Total Retail and Food Services	15,812,948	23,351,678	30,706,538	42,842,056	71,158,264	183,871,484
All Other Outlets	6,982,052	11,986,075	13,820,010	15,981,433	29,827,642	78,597,212
Total All Outlets	22,572,308	33,333,524	43,832,272	61,155,206	101,575,386	262,468,697

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

RESULTS

This analysis includes a comparative examination of the amount of taxes paid (sales tax, gasoline tax and income tax) by the five respective income groups and for each racial and ethnic minority group. **FIGURES 21** and **22,** and **TABLES 21** and **22** indicate that taxes paid as a percent of each group's disposable income puts the heaviest burden on lower-income groups. This is the so-called "regressive" nature of the excise gasoline taxes and retail sales taxes levied primarily on consumer durable and non-durable goods that make up the necessities of daily living.

TABLE 21 shows that the lower quintile groups (Quintile 1 and Quintile 2) are anticipated to pay a respective 23.9 percent and 12.2 percent of their adjusted gross income on regional sales and gasoline taxes. By comparison, the higher quintile groups (Quintile 4 and 5) are anticipated to pay 6.7 percent and 3.3 percent of their income on all regional sales and gasoline taxes, respectively. Although the lower income quintile groups pay a larger percentage of their income on taxes than other quintiles, their contribution of the total share

of sales and gasoline taxes is the smallest of the group at 8.6 percent for Quintile 1 and 12.9 percent for Quintile 2. Quintile 4 and Quintile 5, in contrast, pay 23.2 percent and 38.3 percent of the total sales and gasoline taxes in the region. Thus, those with limited financial means will not pay a disproportionate amount of overall taxes under the Plan, compared with their usage of the transportation system and their shares of RTP/SCS investments.

FIGURE 21 Share of Taxes Paid by Income Quintile (2012)

Quintile 5
- 90.9%
- 63.2%
- 38.7%
- 35.2%

Quintile 4
- 6.9%
- 18.7%
- 23.3%
- 22.1%

Quintile 3
- 1.5%
- 10.5%
- 16.7%
- 18.8%

Quintile 2
- 0.2%
- 5.7%
- 12.7%
- 14.9%

Quintile 1
- 0.4%
- 1.9%
- 8.6%
- 9.0%

■ Share of Tax Assessed   ■ Share of Adjusted Gross Income
■ Share of Sales Tax Paid   ■ Share of Gasoline Tax Paid

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

FIGURE 22 Tax Burdens by Income Quintile: Income, Sales and Gasoline Tax (2012)
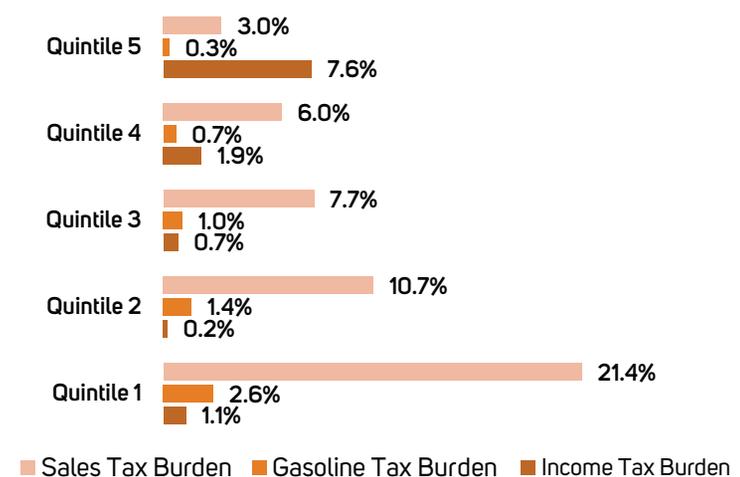
Quintile 5
- 3.0%
- 0.3%
- 7.6%

Quintile 4
- 6.0%
- 0.7%
- 1.9%

Quintile 3
- 7.7%
- 1.0%
- 0.7%

Quintile 2
- 10.7%
- 1.4%
- 0.2%

Quintile 1
- 21.4%
- 2.6%
- 1.1%

■ Sales Tax Burden   ■ Gasoline Tax Burden   ■ Income Tax Burden

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

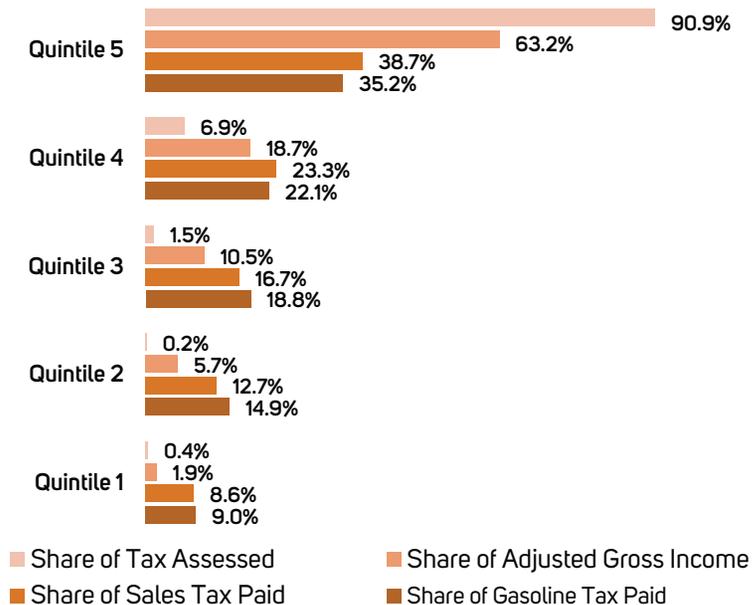**TABLE 21** Tax Burden Analysis for the SCAG Region: Income Tax, Retail Tax, and Gasoline Tax (2012)

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Total Adjusted Gross Income	8,968,364,000	26,405,276 ,000	48,399,835 ,000	86,051,411,000	291,153,498,000	460,978,384 ,000
Income Tax Assessed	103,056,000	52,806 ,000	362,628 ,000	1,671,166,000	21,990,810 ,000	24,180,466,000
Share of Adjusted Gross Income	1.9%	5.7%	10.5%	18.7%	63.2%	100.0%
Share of Tax Assessed	0.4%	0.2%	1.5%	6.9%	90.9%	100.0%
Income Tax Burden	1.15%	0.20%	0.75%	1.94%	7.55%	5.25%
Estimated Gasoline Tax Paid						
State Excise Tax ($0.18)	112,459,012	186,806,915	234,914,381	275,524,580	439,839,693	1,249,544,582
Federal Excise Tax ($.184)	114,958,102	190,958,180	240,134,701	281,647,349	449,613,908	1,277,312,239
Sales Tax on Gasoline	1,291,395	1,781,037	2,075,967	3,295,777	5,869,977	14,314,153
Total Tax Paid on Gasoline	228,708,509	379,546,132	477,125,050	560,467,706	895,323,577	2,541,170,973
Share of Gasoline Tax Paid	9.0%	14.9%	18.8%	22.1%	35.2%	100.0%
Gasoline Tax Burden	2.6%	1.4%	1.0%	0.7%	0.3%	0.6%
Taxable Sales & Sales Tax						
Estimated Taxable Sales	22,572,308	33,333,524	43,832,272	61,155,206	101,575,386	262,468,697
Estimated Sales Tax Paid	1,916,997	2,830,914	3,722,540	5,193,724	8,626,486	22,290,660
Share of Sales Tax Paid	8.6%	12.7%	16.7%	23.3%	38.7%	100.0%
Sales Tax Burden	21.4%	10.7%	7.7%	6.0%	3.0%	4.8%
Combined Sales & Gasoline Tax						
Estimated Sales & Gasoline Tax Paid	2,144,413.	3,208,678	4,197,589	5,750,895	9,515,939	24,817,517
Share of Sales & Gasoline Tax Paid	8.6%	12.9%	16.9%	23.2%	38.3%	100.0%
Sales & Gasoline Tax Burden	23.9%	12.2%	8.7%	6.7%	3.3%	5.4%

Source: 2012 California Taxable Sales, State Board of Equalization
Table 24–Gasoline and Jet Fuel Tax Statistics, 1923-1924 to 2012-13, State Board of Equalization 2008-09 Annual Report
California Income Tax Returns Statistic for 2012, California Franchise Tax Board
Consumer Edpenditure Survey, 2012, Bureau of Labor Statistics

TABLE 22 Income Tax Return Analysis for the SCAG Region: 2012 Tax Year

	All Tax Returns	Adjusted Gross Income Quintile Ranges	Total Adjusted Gross Income	Total CA Income Tax Assessed	% of Total Adjusted Gross Income	% of Total Tax Assessed	Tax Assessed as % of Gross Income
Quintile 1	1,459,654	Up to $12,351	$8,968,364,000	$103,056,000	1.81%	0.43%	1.15%
Quintile 2	1,459,654	$12,352-$24,389	$26,405,276,000	$52,806,000	5.33%	0.22%	0.20%
Quintile 3	1,459,654	$24,390-$43,209	$48,399,835,000	$362,628,000	9.76%	1.50%	0.75%
Quintile 4	1,459,654	$43,210-$80,876	$86,051,411,000	$1,671,166,000	17.35%	6.91%	1.94%
Quintile 5	1,459,654	$80,877 & Above	$326,039,454,000	$21,990,810,000	65.75%	90.94%	6.74%
	7,298,270		$495,864,341,000	$24,180,466,000	100.00%	100.00%	4.88%

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics
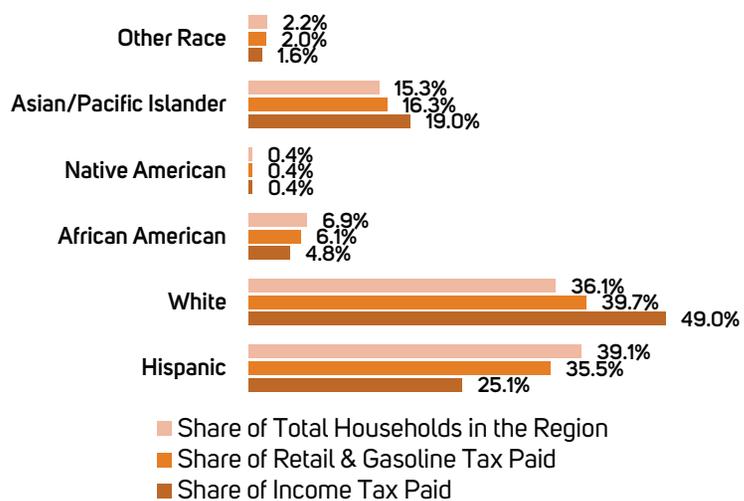
TABLE 23 AND FIGURE 23 look at projected taxes by race and ethnicity and indicate that tax burdens are expected to fall more heavily on non-minority groups, with Non-Hispanic Whites paying 49 percent of the income taxes and 39.7 percent of retail and gasoline taxes through the year 2040.

TABLE 23 Projected RTP/SCS Funding Share by Ethnicity (2012-2040 Average)

	Share of Total Households in the Region	Share of Income Tax Paid	Share of Retail & Gasoline Tax Paid
Hispanic	39.1%	25.1%	35.5%
White	36.1%	49.0%	39.7%
African American	6.9%	4.8%	6.1%
Native American	0.4%	0.4%	0.4%
Asian	15.3%	19.0%	16.3%
Other Race	2.2%	1.6%	2.0%

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

FIGURE 23 Share of Households and Taxes Paid by Ethnicity (2012-2040 Average)

Other Race
- 2.2%
- 2.0%
- 1.6%

Asian/Pacific Islander
- 15.3%
- 16.3%
- 19.0%

Native American
- 0.4%
- 0.4%
- 0.4%

African American
- 6.9%
- 6.1%
- 4.8%

White
- 36.1%
- 39.7%
- 49.0%

Hispanic
- 39.1%
- 35.5%
- 25.1%

- Share of Total Households in the Region
- Share of Retail & Gasoline Tax Paid
- Share of Income Tax Paid

Source: SCAG, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

SHARE OF TRANSPORTATION SYSTEM USAGE

METHODOLOGY

An important element in tabulating the benefits of the Plan is to identify how different socioeconomic groups are currently using the transportation system. In order to determine the existing level of system usage for different racial/ethnic groups and households by income, SCAG analyzed the 2009 National Household Travel Survey (NHTS). The NHTS is a household-based travel survey conducted periodically by the Federal Highway Administration (FHWA). The NHTS is the authoritative source of national data on the travel behavior of the American public. The dataset allows analysis of daily travel by all modes, including characteristics of the people traveling, their households and their vehicles. The 2009 data includes 69,817 households and 160,758 persons, and the travel diary data includes a total of 642,292 trips. It is a disaggregated database that allows aggregation of any variable as well as cross-categorization of the data with other variables. With its fairly large sample size and key variables typically used for travel behavior analysis, the NHTS data is a valuable resource for analyzing travel patterns. With about 6,700 households and 15,000 individuals sampled in the SCAG region, the 2009 NHTS dataset provides valuable and sufficient observations to analyze both the demographic and travel characteristics of the local population. This dataset, along with SCAG's 2010 Household Travel Survey, are used as the basis for developing transportation system usage information for different modes and by income quintile and ethnicity. In addition, the NHTS provides information on the household characteristics and travel behavior of residents living within high quality transit areas (HQTAs), which represent the half mile surrounding all rail transit stops and bus corridors that have peak headways of 15 minutes or less. The NHTS also provides information for population living within one-quarter, and one-half miles of a rail transit stop, which are identified as Transit Oriented Communities (TOCs), and are an important geography for the forthcoming Gentrification and Displacement section in this Appendix.

RESULTS

Based on 2009 NHTS data, TABLES 24 - 29 present transportation mode usage in the SCAG region by income quintile and ethnicity for both work trips and all trips. Highlights include: the automobile (drive alone and car pool), which accounts for just under 80 percent of all trips, is the dominant transportation mode for work trips. The next most popular mode for work trips is bus (6.1 percent), followed by walking and biking (four percent). When looking at all trips, most bus and rail transit riders are lower income quintile households—the lowest two income quintile households combined account for 82 percent of bus riders and 58.3 percent of rail transit riders. However, the data indicates a more balanced usage distribution by income groups for passenger rail, walking, biking and other modes. Furthermore, given the total number of trips, the bus is far more important than urban rail for low-income households for commuting purposes. Transportation system usage by mode for all trips is used to allocate the 2016 RTP/SCS's investment costs, mobility and accessibility benefits. Because only the NHTS and SCAG's 2010 Household Travel Survey provide information

about non-work trips, both data sets were applied to develop a hybrid version of system usage by mode for all trips. It should be noted that the appropriate and accurate statistics on shares of usage by ethnicity and income quintile are important because they directly affect environmental justice analysis outcomes. This area is recommended for further refinement and research. Highlights about all trips from the statistics included here indicate that active transportation, in particular walking, becomes much more important for non-work trips. It jumps to over 14 percent from just about 2.5 percent for work trips. While accounting for 20 percent of total households, households in the lowest income quintile show less than 15 percent of total transportation system usage, and their share of the auto mode as driver is less than ten percent. On the other hand, usage of the transportation system by low-income households is disproportionately high in other modes, particularly bus, rail transit, passenger rail, walking and biking. By ethnicity, Hispanics disproportionately use more bus and rail transit, and walk more often than their share of total households or population,

while Non-Hispanic Whites use disproportionately higher auto and biking modes, which is similar to their mode usage for work trips. Information on transportation system usage by modes, by income quintile, and by ethnicity is shown in **FIGURE 24** and **FIGURE 25**. Since projected growth by ethnicity in the SCAG region shows a very different ethnic composition in the future than the distribution today, household projections by income quintile and ethnicity are utilized to adjust and derive the appropriate usage shares by modes for different ethnicity groups.

TABLE 24 Transportation Mode Usage in the SCAG Region by Income Quintile

	Auto Mode	Bus	Passenger Rail	Rail Transit	Walking and Biking	Others	Total Usage	Household
Quintile 1	12.8%	53.1%	3.2%	28.9%	27.7%	26.1%	16.6%	20.0%
Quintile 2	18.4%	28.9%	8.7%	29.4%	23.0%	16.9%	19.5%	20.0%
Quintile 3	20.0%	8.6%	17.4%	16.8%	15.2%	19.0%	18.9%	20.0%
Quintile 4	22.5%	6.1%	31.5%	19.0%	16.7%	16.7%	21.0%	20.0%
Quintile 5	26.2%	3.3%	39.3%	5.9%	17.4%	21.2%	24.0%	20.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey, 2008 PUMS

TABLE 25 Transportation Mode Usage in the SCAG Region by Ethnicity

	Auto Mode	Bus	Passenger Rail	Rail Transit	Walking and Biking	Others	Total Usage	Household
Hispanic	37.4%	44.4%	36.7%	42.5%	37.3%	39.0%	38.1%	39.1%
White	37.8%	30.2%	38.0%	32.8%	37.4%	35.9%	37.1%	36.1%
African American	6.4%	8.5%	6.7%	7.5%	6.7%	7.1%	6.6%	6.9%
Native American	0.4%	0.4%	0.4%	0.4%	2.4%	0.4%	0.4%	0.4%
Asian/Pacific Islander	15.8%	14.0%	16.0%	14.4%	16.1%	15.4%	15.6%	15.3%
Other Race	2.1%	2.4%	2.1%	2.3%	2.1%	2.2%	2.1%	2.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey, 2008 PUMS

TABLE 26 Total Person Trips in the SCAG Region by Income Quintile and by Mode

	Auto-Driver	Auto-Passenger	Bus	Passenger Rail	Rail Transit	Walk	Bike	Others	Sum
Quintile 1	1,213,860,638	941,383,693	345,530,302	6,172,223	7,865,823	816,097,258	79,514,356	97,357,020	3,507,781,312
Quintile 2	1,992,498,032	1,117,710,295	187,916,163	6,788,521	8,018,885	684,507,615	57,668,611	63,077,666	4,118,185,787
Quintile 3	2,426,372,093	951,845,958	55,853,919	2,543,000	4,578,629	468,302,572	23,434,623	70,843,070	4,003,773,863
Quintile 4	2,717,725,722	1,082,561,769	39,534,477	1,849,525	5,170,900	483,487,643	56,275,068	62,035,601	4,448,640,706
Quintile 5	3,172,733,590	1,246,335,867	21,741,731	7,224,255	1,605,048	512,114,636	50,265,991	79,024,781	5,091,045,899
Total	11,523,190,075	5,339,837,582	650,576,592	24,577,524	27,239,285	2,964,509,724	267,158,649	372,338,136	21,169,427,567
	Auto-Driver	Auto-Passenger	Bus	Passenger Rail	Rail Transit	Walk	Bike	Others	Sum
Quintile 1	34.6%	26.8%	9.9%	0.2%	0.2%	23.3%	2.3%	2.8%	100.0%
Quintile 2	48.4%	27.1%	4.6%	0.2%	0.2%	16.6%	1.4%	1.5%	100.0%
Quintile 3	60.6%	23.8%	1.4%	0.1%	0.1%	11.7%	0.6%	1.8%	100.0%
Quintile 4	61.1%	24.3%	0.9%	0.0%	0.1%	10.9%	1.3%	1.4%	100.0%
Quintile 5	62.3%	24.5%	0.4%	0.1%	0.0%	10.1%	1.0%	1.6%	100.0%
Total	54.4%	25.2%	3.1%	0.1%	0.1%	14.0%	1.3%	1.8%	100.0%
	Auto-Driver	Auto-Passenger	Bus	Passenger Rail	Rail Transit	Walk	Bike	Others	Sum
Quintile 1	10.5%	17.6%	53.1%	25.1%	28.9%	27.5%	29.8%	26.1%	16.6%
Quintile 2	17.3%	20.9%	28.9%	27.6%	29.4%	23.1%	21.6%	16.9%	19.5%
Quintile 3	21.1%	17.8%	8.6%	10.3%	16.8%	15.8%	8.8%	19.0%	18.9%
Quintile 4	23.6%	20.3%	6.1%	7.5%	19.0%	16.3%	21.1%	16.7%	21.0%
Quintile 5	27.5%	23.3%	3.3%	29.4%	5.9%	17.3%	18.8%	21.2%	24.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

TABLE 27 Total Home-Based-Work Person Trips in the SCAG Region by Income Quintile and by Mode

	Auto-Driver	Auto-Passenger	Bus	Passenger Rail	Rail Transit	Walk	Bike	Others	Sum
Quintile 1	184,815,703	50,438,540	72,898,196	1,410,037	3,876,826	17,456,022	13,539,008	5,188,810	349,623,141
Quintile 2	282,940,894	45,223,197	51,336,705	2,423,366	4,705,050	10,975,739	5,262,679	4,706,717	407,574,348
Quintile 3	433,953,635	42,976,361	7,127,680	1,950,520	-	6,346,053	1,569,981	9,886,591	503,810,821
Quintile 4	483,984,009	27,675,391	8,227,681	646,731	544,041	20,536,718	10,097,292	10,069,792	561,781,656
Quintile 5	548,103,864	24,898,831	7,743,712	-	105,879	6,125,730	6,849,515	9,979,638	603,807,170
Total	**1,933,798,105**	**191,212,319**	**147,333,975**	**6,430,655**	**9,231,796**	**61,440,262**	**37,318,475**	**39,831,549**	**2,426,597,137**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Passenger Rail**	**Rail Transit**	**Walk**	**Bike**	**Others**	**Sum**
Quintile 1	52.9%	14.4%	20.9%	0.4%	1.1%	5.0%	3.9%	1.5%	100.0%
Quintile 2	69.4%	11.1%	12.6%	0.6%	1.2%	2.7%	1.3%	1.2%	100.0%
Quintile 3	86.1%	8.5%	1.4%	0.4%	0.0%	1.3%	0.3%	2.0%	100.0%
Quintile 4	86.2%	4.9%	1.5%	0.1%	0.1%	3.7%	1.8%	1.8%	100.0%
Quintile 5	90.8%	4.1%	1.3%	0.0%	0.0%	1.0%	1.1%	1.7%	100.0%
Total	**79.7%**	**7.9%**	**6.1%**	**0.3%**	**0.4%**	**2.5%**	**1.5%**	**1.6%**	**100.0%**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Passenger Rail**	**Rail Transit**	**Walk**	**Bike**	**Others**	**Sum**
Quintile 1	9.6%	26.4%	49.5%	21.9%	42.0%	28.4%	36.3%	13.0%	14.4%
Quintile 2	14.6%	23.7%	34.8%	37.7%	51.0%	17.9%	14.1%	11.8%	16.8%
Quintile 3	22.4%	22.5%	4.8%	30.3%	0.0%	10.3%	4.2%	24.8%	20.8%
Quintile 4	25.0%	14.5%	5.6%	10.1%	5.9%	33.4%	27.1%	25.3%	23.2%
Quintile 5	28.3%	13.0%	5.3%	0.0%	1.1%	10.0%	18.4%	25.1%	24.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

TABLE 28   Total Person Trips in the SCAG Region by Ethnicity and by Mode

	Auto-Driver	Auto-Passenger	Bus	Passenger Rail	Rail Transit	Walk	Bike	Others	Sum
White	5,478,481,953	1,794,429,686	64,944,043	8,457,249	3,644,434	950,936,166	113,317,859	140,064,934	8,554,276,325
African American	867,675,843	373,957,180	58,418,632	8,588,439	4,379,101	248,619,306	27,986,548	31,152,728	1,620,777,778
Asian/Pacific Islander	1,027,312,023	493,301,915	29,172,958	1,354,675	4,428,393	198,443,794	12,225,587	18,688,375	1,784,927,720
Native American	93,263,025	18,969,699	14,815,329	-	-	28,175,905	3,164,019	1,215,645	159,603,621
Hispanic	4,145,011,029	2,661,344,063	500,080,424	5,806,403	15,670,846	1,614,104,249	115,776,687	191,834,652	9,249,628,352
Other Race	309,449,169	161,038,974	16,064,836	370,759	332,666	64,876,976	3,289,856	11,586,178	567,009,416
Total	**11,921,193,042**	**5,503,041,517**	**683,496,223**	**24,577,524**	**28,455,441**	**3,105,156,397**	**275,760,556**	**394,542,513**	**21,936,223,211**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Passenger Rail**	**Rail Transit**	**Walk**	**Bike**	**Others**	**Sum**
White	64.0%	21.0%	0.8%	0.1%	0.0%	11.1%	1.3%	1.6%	100.0%
African American	53.5%	23.1%	3.6%	0.5%	0.3%	15.3%	1.7%	1.9%	100.0%
Asian/Pacific Islander	57.6%	27.6%	1.6%	0.1%	0.2%	11.1%	0.7%	1.0%	100.0%
Native American	58.4%	11.9%	9.3%	0.0%	0.0%	17.7%	2.0%	0.8%	100.0%
Hispanic	44.8%	28.8%	5.4%	0.1%	0.2%	17.5%	1.3%	2.1%	100.0%
Other Race	54.6%	28.4%	2.8%	0.1%	0.1%	11.4%	0.6%	2.0%	100.0%
Total	**54.3%**	**25.1%**	**3.1%**	**0.1%**	**0.1%**	**14.2%**	**1.3%**	**1.8%**	**100.0%**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Passenger Rail**	**Rail Transit**	**Walk**	**Bike**	**Others**	**Sum**
White	46.0%	32.6%	9.5%	34.4%	12.8%	30.6%	41.1%	35.5%	39.0%
African American	7.3%	6.8%	8.5%	34.9%	15.4%	8.0%	10.1%	7.9%	7.4%
Asian/Pacific Islander	8.6%	9.0%	4.3%	5.5%	15.6%	6.4%	4.4%	4.7%	8.1%
Native American	0.8%	0.3%	2.2%	0.0%	0.0%	0.9%	1.1%	0.3%	0.7%
Hispanic	34.8%	48.4%	73.2%	23.6%	55.1%	52.0%	42.0%	48.6%	42.2%
Other Race	2.6%	2.9%	2.4%	1.5%	1.2%	2.1%	1.2%	2.9%	2.6%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

TABLE 29 Total Home-Based-Work Person Trips in the SCAG Region by Ethnicity and by Mode

	Auto-Driver	Auto-Passenger	Bus	Commuter Rail	Urban Rail	Walk	Bike	Others	Sum
White	880,703,892	40,816,496	16,281,919	1,472,150	649,920	15,539,890	18,483,390	19,111,437	993,059,093
African American	114,734,762	7,745,516	2,540,308	-	-	6,274,345	-	547,008	131,841,940
Asian/Pacific Islander	186,528,614	11,786,142	5,004,816	969,470	-	13,385,131	-	472,592	218,146,765
Native American	13,260,810	-	836,637	-	-	-	-	-	14,097,447
Hispanic	760,567,454	131,269,061	131,978,460	3,989,035	8,581,876	24,003,694	19,132,095	17,595,513	1,097,117,189
Other Race	47,742,966	4,786,283	1,552,306	-	-	2,470,575	-	2,395,359	58,947,489
Total	**2,003,538,498**	**196,403,499**	**158,194,445**	**6,430,655**	**9,231,796**	**61,673,635**	**37,615,485**	**40,121,909**	**2,513,209,922**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Commuter Rail**	**Urban Rail**	**Walk**	**Bike**	**Others**	**Sum**
White	88.69%	4.11%	1.64%	0.15%	0.07%	1.56%	1.86%	1.92%	100.00%
African American	87.02%	5.87%	1.93%	0.00%	0.00%	4.76%	0.00%	0.41%	100.00%
Asian/Pacific Islander	85.51%	5.40%	2.29%	0.44%	0.00%	6.14%	0.00%	0.22%	100.00%
Native American	94.07%	0.00%	5.93%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Hispanic	69.32%	11.96%	12.03%	0.36%	0.78%	2.19%	1.74%	1.60%	100.00%
Other Race	80.99%	8.12%	2.63%	0.00%	0.00%	4.19%	0.00%	4.06%	100.00%
Total	**79.72%**	**7.81%**	**6.29%**	**0.26%**	**0.37%**	**2.45%**	**1.50%**	**1.60%**	**100.00%**
	Auto-Driver	**Auto-Passenger**	**Bus**	**Commuter Rail**	**Urban Rail**	**Walk**	**Bike**	**Others**	**Sum**
White	44.0%	20.8%	10.3%	22.9%	7.0%	25.2%	49.1%	47.6%	39.5%
African American	5.7%	3.9%	1.6%	0.0%	0.0%	10.2%	0.0%	1.4%	5.2%
Asian/Pacific Islander	9.3%	6.0%	3.2%	15.1%	0.0%	21.7%	0.0%	1.2%	8.7%
Native American	0.7%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%
Hispanic	38.0%	66.8%	83.4%	62.0%	93.0%	38.9%	50.9%	43.9%	43.7%
Other Race	2.4%	2.4%	1.0%	0.0%	0.0%	4.0%	0.0%	6.0%	2.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 24 Transportation Usage by Mode and by Income Quintile: All Trips

Legend:
- Auto Mode
- Bus
- Passenger Rail
- Rail Transit
- Non-Motorized
- Others
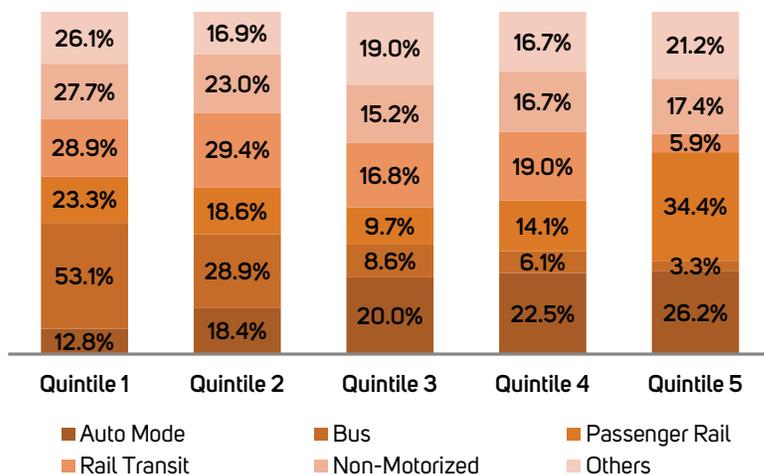
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 25 Transportation Usage by Mode and by Ethnicity: All Trips

Legend:
- Auto Mode
- Bus
- Passenger Rail
- Rail Transit
- Non-Motorized
- Others

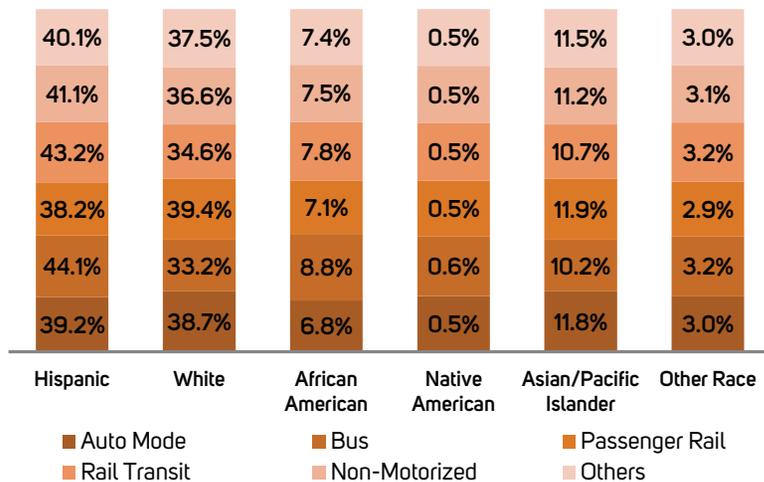*Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey*

2016 RTP/SCS INVESTMENTS VS. BENEFITS

METHODOLOGY

The transportation investment strategy of the 2016 RTP/SCS will have a large impact on the future travel options for low-income and minority communities. In terms of environmental justice, a disproportionate allocation of resources for various investments can indicate a pattern of discrimination. Such was the case in the landmark civil rights class action lawsuit Labor/Community Strategy Center v. Los Angeles County Metropolitan Transportation Authority (MTA) in October 1996. The lawsuit, which eventually led to a court-ordered Consent Decree, charged that MTA's investment and service priorities disproportionately allocated resources to rail transit modes over bus ridership, an expenditure pattern discriminatory to low-income and minority communities.

As a regional MPO, SCAG aims to identify and address the Title VI and other environmental justice implications of its planning processes and investment decisions. This analysis intends to determine where the 2016 RTP/SCS is putting its investments and whether resources are being allocated equitably. The 2016 RTP/SCS utilized a benefit assessment method that considered to what extent various socioeconomic groups were receiving value from existing and funded transportation investments. SCAG compared the total share of transportation funding borne by low-income households against other income groups. In this analysis, SCAG reported expenditure distribution in several ways. First, SCAG estimated the share of total Plan expenditures allocated to each category of household income. This was done by summing expenditures on each type of mode (bus, rail transit, passenger rail, highways/arterials and HOV/HOT lanes). These expenditures were then allocated to income categories based on each income group's use-share of these modes.

RESULTS

FIGURE 26, Transportation Investments by Income Quintile, presents the findings for share of total investments, which looks at the raw dollars and compares the amount of transportation investments spent on low-income and high-income households. The results revealed that about 24 percent of Plan investments will be allocated to the lowest quintile group (Quintile 1 - as compared with the group's system usage of just under 17 percent), while 19 percent will be invested for the highest income category (Quintile 5), whose transportation system usage totals 24 percent. In other words, transportation investments will go to modes likeliest to be used by lower-income households. The next figure, Transportation Investments by Ethnicity, evaluates the distribution of transportation investments for various racial/ethnic groups. The current analysis for the 2016 RTP/SCS reveals that Plan investments will be distributed equitably on the basis of system usage for all racial and ethnic minority groups. For Hispanics, the share of Plan investments (41 percent) is close to this group's share of system usage (38.1 percent); for Whites, the share of Plan investments is at 34 percent, while their system usage is 37.1 percent; for African-Americans, the share of Plan investments (seven

percent) is in line with their system usage (6.6 percent), and the same can be said for Asian/Pacific Islanders, whose usage (15.6 percent) of the transportation system is in line with their share of investments (15 percent). Transportation investments will also go to modes that are most likely to be used by lower-income households.

FIGURE 26 2016 RTP/SCS Transportation Investments by Income Quintile

- Quintile 1
- Quintile 2
- Quintile 3
- Quintile 4
- Quintile 5
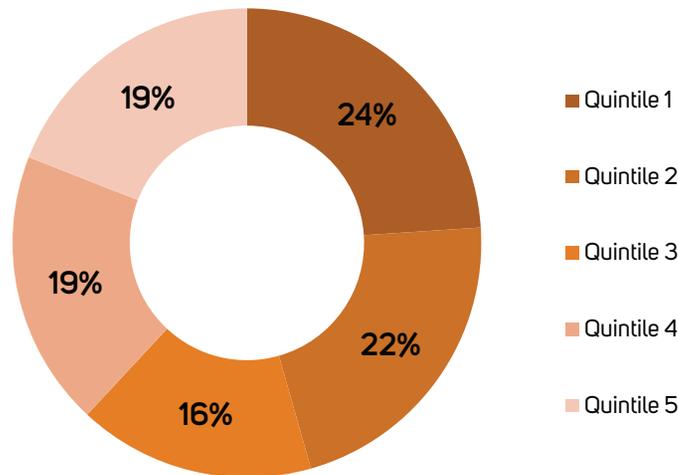
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 27 2016 RTP/SCS Transportation Investments by Ethnicity

- Hispanic
- White
- African American
- Native American
- Asian/Pacific Islander
- Other Race
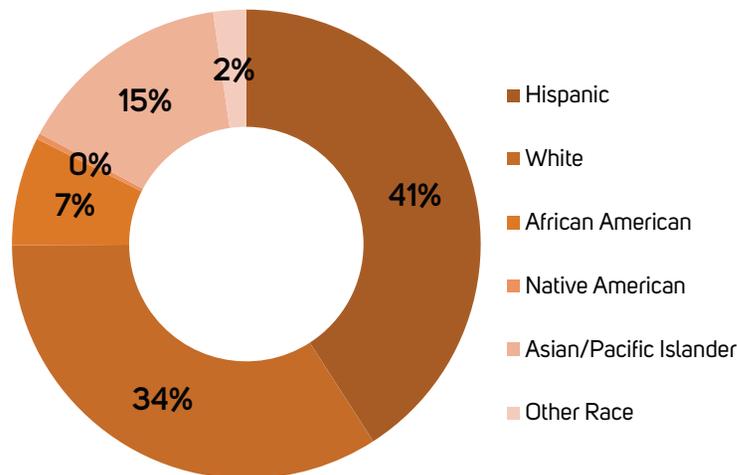
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

DISTRIBUTION OF TRAVEL TIME SAVINGS AND TRAVEL DISTANCE REDUCTIONS

METHODOLOGY

The 2016 RTP/SCS will result in reductions in travel time and travel distance for the region as a whole. When assessing the environmental justice implications of the Plan, it is important to identify how these benefits are distributed across various communities. To accomplish this, anticipated travel benefits resulting from implementation of the Plan were determined for all trips and work trips both for transit and for automobile modes. This information was then linked with data obtained through the NHTS and SCAG's Household Travel Survey on mode usage by income and ethnicity to determine overall travel time and travel distance savings for various environmental justice population groups.

To determine if the Plan's impacts on travel time and travel distance (measured in person-hours and person-miles) are justly allocated, the distribution of total savings (benefits) across various demographic groups is compared with each group's usage of the transportation system, their share of the Plan's investments, and their funding of the system through gasoline and sales taxes.

RESULTS

FIGURE 28 and **FIGURE 29** present Share of System Usage, Taxes Paid, Travel Time Savings (auto, local bus, all transit), and Person-mile Changes (auto) by income/ethnicity. **FIGURE 30** and **FIGURE 31** present the relative improvements of travel time savings and person-mile reductions from implementation of the 2016 RTP/SCS. **FIGURE 32** presents the breakdown of travel time savings and travel distance reductions by area of concern. Highlights among the figures include the following:

- The share of travel time savings for each income group is generally consistent with each group's usage of the transportation system – specifically in terms of mode. The higher earning income quintiles captured more savings in person hours traveled due to their relatively higher usage of autos. However, lower earning income groups received more benefits from the Plan's transit-related time savings due to their higher usage of transit modes.

- Person-mile travel changes are also in line with each income quintile's usage of autos. The share of travel time savings and person-mile benefits for racial and ethnic minority groups are also very balanced, and in line with each group's usage of the transportation system.

- The lower earning income quintile groups received greater improvements in person-mile travel reductions and local bus travel time savings than higher income groups, and about the same level of improvements in person hour savings as higher income households. Alternatively, higher income households enjoyed a moderately better improvement in all transit mode time savings.
- Improvements in mobility and person-mile travel benefits are fairly similar and close for all ethnic groups.
- All areas of concern experience a decrease in travel time and person-mile travel as a result of the Plan, save rural areas, which will experience a slight increase in person miles traveled by auto.

FIGURE 29 Share of Travel Time and Person-Mile Travel Benefits by Ethnicity
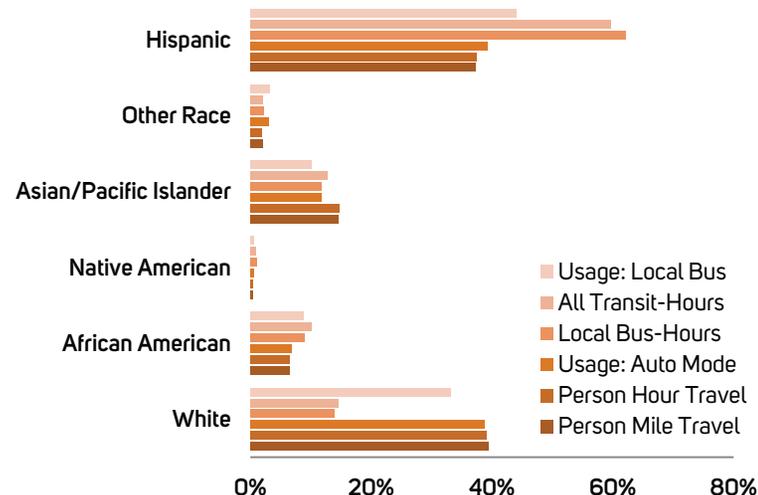
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 28 Share of Travel Time and Person-Mile Travel Benefits by Income
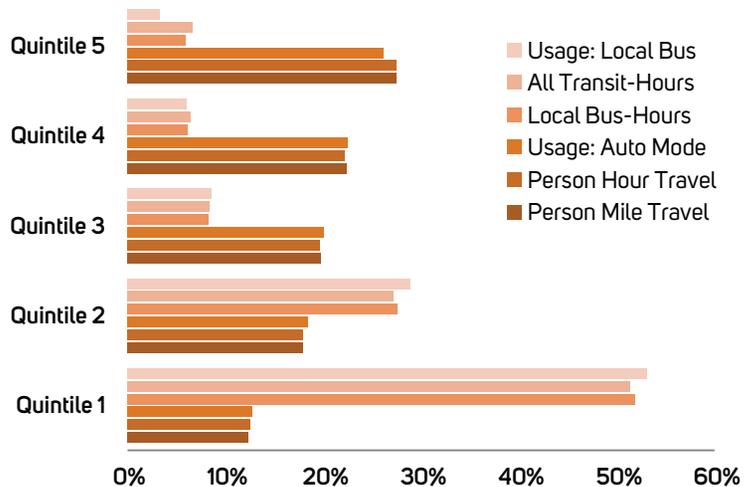
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 30 2016 RTP/SCS Improvement on Mobility and Person-Mile Travel by Income Quintile
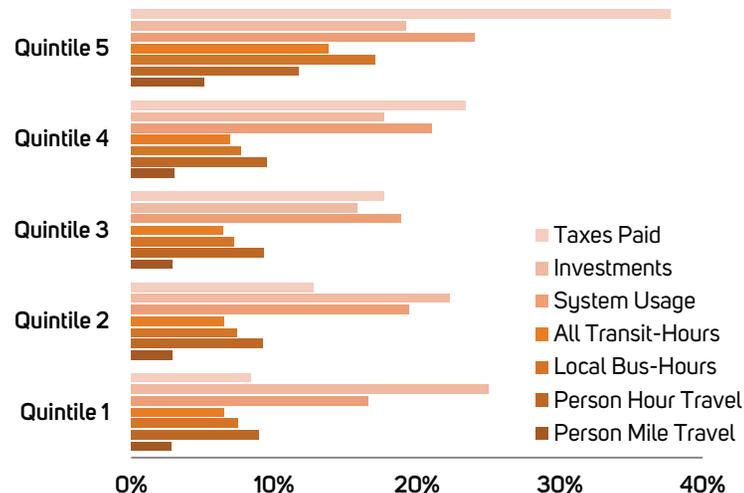
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 31 2016 RTP/SCS Improvement on Mobility and Person-Mile Travel by Ethnicity

- Taxes Paid
- Investments
- System Usage
- All Transit-Hours
- Local Bus-Hours
- Person Hour Travel
- Person Mile Travel
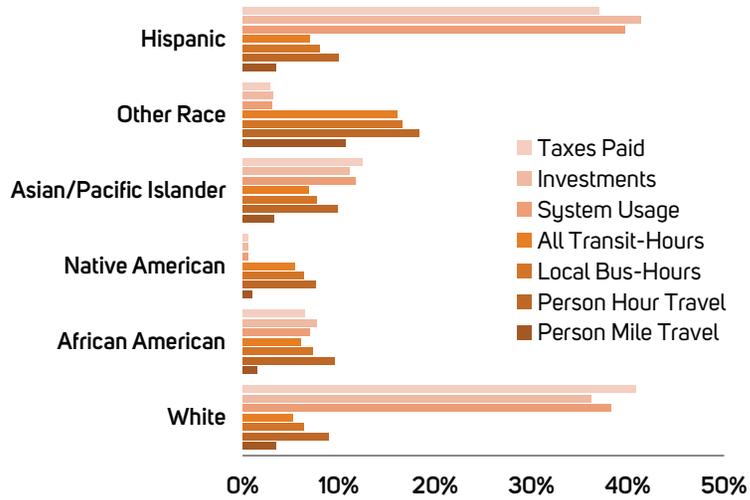
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

FIGURE 32 Travel Time and Travel Distance Reductions (2040 Baseline - 2040 Plan)

- All Transit-Hours
- Local Bus-Hours
- Person Hour Travel
- Person Mile Travel
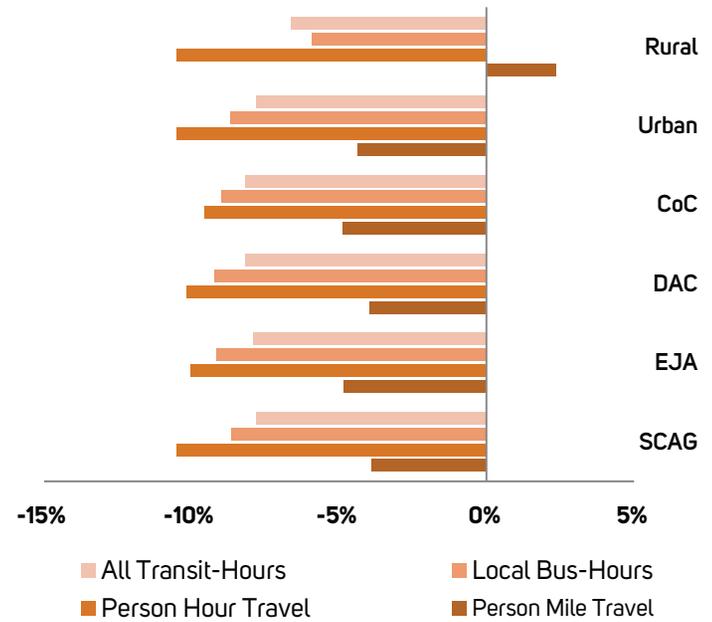
Source: SCAG 2010 Household Travel Survey, 2009 National Household Travel Survey

GEOGRAPHIC DISTRIBUTION OF TRANSPORTATION INVESTMENTS

METHODOLOGY

One method for assessing the distribution of benefits associated with the 2016 RTP/SCS is to tabulate and summarize the share of physical improvements for active transportation, transit, and highway-related projects throughout the region, and specifically for areas that have a high concentration of low-income and minority population. This analysis measures the actual mileage of improvements in the form of new bike lanes, transit lines, and highway lane mile improvements, and then summarizes the share of these improvements for each of the areas of concern described earlier in this report.

RESULTS

By 2040, there will be an additional 4,600 lane miles of highway projects as a result of the 2016 RTP/SCS. These projects include improvements to mixed-flow highway lanes, Express or High Occupancy Toll lanes (HOT), general toll lanes, and carpool or High Occupancy Vehicle lanes (HOV). In addition, more than 2,200 lane miles will be improved as a result of the region's Corridor System Management Plans.

TABLE 30 shows the breakdown of investments by highway type at the regional level, and also includes a summary of improvements for each area of concern individually. Examining projects in the region as a whole, 27 percent of the physical improvements for highways will occur in mixed-flow corridors. The next largest share will go to express and HOV lanes,

which will each receive 25 percent of the total physical improvements. When summarizing total improvements by area of concern, 56 percent of the region's total improvements by lane miles will be in EJAs. Within EJAs, the largest share of investments also goes to express lanes (61 percent). For the other subareas, 38 percent, 14 percent and 25 percent of the region's lane mile investments will fall in DACs, CoCs and Rural Areas, respectively.

In terms of mileage investments for transit lines, roughly 4,500 miles of transit-related projects will be built by 2040. From TABLE 31, the largest investment will be for rapid bus lines (30 percent). Express bus lines will incur 26 percent of all transit mileage investments, while local bus lines will count for 17 percent. For the region's areas of concern, 68 percent of the Plan's transit line investments will occur in EJAs, 46 percent will fall in DACs, 26 percent in CoCs and 5 percent within Rural Areas.

The Plan will also double the current number of miles of bike lanes from 3,900 miles in 2012 to 8,800 miles in 2040, an increase of 124 percent.

TABLE 32 and FIGURE 33 display the breakdown of new bike lanes in the region's areas of concern, where the share of miles will increase from 2012 faster than the regional average for all subareas, save Urban areas. Rural areas enjoy the largest rate of increase from existing conditions in 2012, with 754 percent growth. CoCs and DACs will also see a large increase from current levels, where bike lane miles will grow by 345 percent and 324 percent, respectively. EXHIBIT 6 illustrates the current infrastructure and planned improvements for bike lanes as a result of the Plan.

TABLE 30 RTP Highway Lane Mileage Share by Type

Project Type	Region	EJA	DAC	CoC	Urban	Rural
Express	25%	61%	47%	14%	89%	11%
HOV	25%	56%	42%	15%	89%	11%
Mixed-Flow	27%	58%	45%	19%	55%	45%
Toll (excl. Freight)	24%	47%	16%	5%	68%	32%
Region	**100%**	**56%**	**38%**	**14%**	**75%**	**25%**

Source: SCAG

TABLE 31 RTP Transit Mileage Share by Mode

Mode	Region	EJ	DAC	CoC	Urban	Rural
Local Bus	17%	66%	35%	10%	100%	0%
Express Bus	26%	54%	36%	14%	90%	9%
Rapid Bus	30%	80%	53%	37%	100%	0%
BRT	2%	89%	80%	62%	100%	0%
Heavy/Light Rail	12%	75%	57%	44%	100%	0%
Metrolink	10%	54%	55%	23%	98%	2%
High Speed Rail	4%	63%	30%	10%	48%	52%
TOTAL	**100%**	**68%**	**46%**	**26%**	**95%**	**5%**

Source: SCAG

TABLE 32 Bicycle Mileage Shares by 2040

	Existing	Proposed	Existing	Proposed	Increased
SCAG Region	3,920	8,782	100%	100%	124%
Environmental Justice Areas	1,646	5,436	42%	62%	230%
Disadvantaged Communities	658	2,792	17%	32%	324%
Communities of Concern	323	1,436	8%	16%	345%
Urban Areas	3,712	7,030	95%	80%	89%
Rural Areas	206	1,750	5%	20%	754%

Source: SCAG

FIGURE 33 Bicycle mileage increased from 2012 to 2040 plan

Source: SCAG

EXHIBIT 6 Existing and Proposed Bikeway in SCAG Region

Existing Bikeway
Locally Proposed Bikeways
SCAG Proposed Bikeways

(Source: SCAG Bike Lane Dataset)
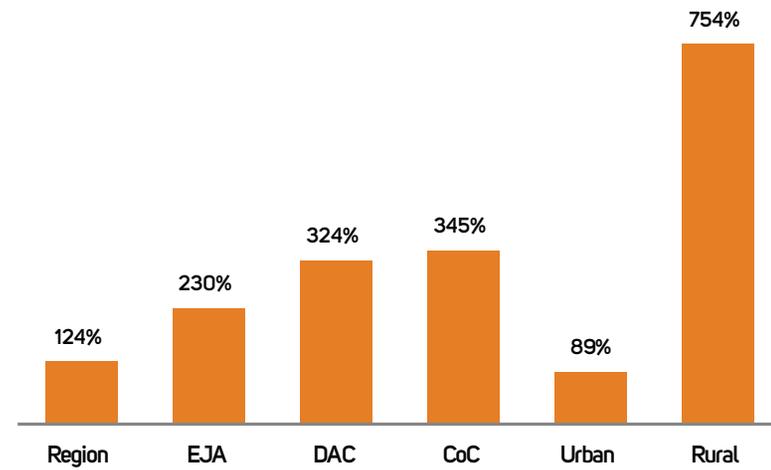
JOBS-HOUSING IMBALANCE OR JOBS-HOUSING MISMATCH

In the practice of urban and transportation planning, the imbalance of jobs and housing is considered a key contributor to traffic congestion and an impediment to environmental justice. From an economic point of view, transportation and driving are expensive; workers without a car or people who cannot afford a vehicle have to either live close to their jobs where they can have access to transit or can walk or bike. Moreover, since long-distance commuting is expensive, people do not do it unless they own a dependable vehicle, access is available to relatively fast and cheap transit, or they have a well-paying job. As a part of this job-housing imbalance/mismatch analysis, SCAG identified the median wages for inter-county and intra-county commuters using the 1990 Census, 2000 Census and 2008 American Community Survey (ACS) for the 2012-2035 RTP/SCS (the 2010 Census does not include detailed travel data).

For the 2016 RTP/SCS, SCAG updated the analysis of the median wages for inter-county and intra-county commuters using the most recent 2009-2013 ACS. New to the analysis of the job-housing imbalance/mismatch for the 2016 RTP/SCS, SCAG conducted the analysis of median commute distance and job-to-worker ratio at the census tract level to better understand the spatial and temporal dynamics of job-housing imbalance/mismatch in a more geographically detailed way. The research questions of this study are whether there are significant differences in commute distance and job-to-worker ratio (1) between different income levels, (2) between coastal counties (Los Angeles and Orange Counties) and inland counties (Riverside and San Bernardino Counties), and (3) between temporal periods. Additionally, SCAG conducted a Jobs-Housing Fit (JHFIT) analysis, according to input from our environmental justice stakeholders.

Highlights from this analysis include:

- Higher wage workers tend to commute longer distances than lower wage workers;

- The commute distance grew in all six counties between 2002 and 2012;

- The commute distance of workers in inland counties grew more rapidly than in coastal counties, especially in low wage workers in inland counties;

- Inland counties show a lower job-to-worker ratio than coastal counties, which indicates there are more long-distance commuters in inland counties;

- Coastal counties have a substantial concentration of low-wage jobs, but lack an adequate number of affordable housing units, while Inland counties have a substantial concentration of affordable housing units and workers, relative to the number of low-wage jobs that match their skills; and,

- Job-housing balance in the SCAG region may be improved due to the faster growth of employment over population in the Inland Counties through 2040. Improvements in job-housing balance may result in a reduction of transportation congestion and related air quality problems.

The following section describes this effort's methodology and findings.

TABLE 33 identifies the median wages for inter-county and intra-county commuters using the most recent 2009-2013 American Community Survey (ACS). These statistics indicate that most inter-county commuters command much higher wages than those commuters who work and live in the same county. Those commuters also command wages higher than workers who work and reside in their destination work counties.

TABLE 33 Median Wage for Workers by Place of Residence and Place of Work, 2013 Dollars

Place of Residence	Place of Work						
	Imperial	Los Angeles	Orange	Riverside	San Bernardino	Ventura	San Diego
Imperial	26,154	-	-	18,983	-	-	43,455
Los Angeles	40,995	27,990	36,896	35,264	30,747	37,991	30,226
Orange	-	55,344	31,973	48,121	45,340	40,302	53,188
Riverside	40,909	48,444	46,120	24,597	38,946	25,189	47,458
San Bernardino	-	43,419	43,419	33,048	25,837	32,296	37,966
Ventura	-	60,453	58,438	-	52,731	27,420	65,669
San Diego	77,511	54,273	60,113	53,188	42,185	70,528	32,564

Source: SCAG, 2009-2013 American Community Survey 5-Year Public Use Microdata Samples (PUMS)
'-' indicates sample size is too small for the analysis

TABLE 34 identifies the median commute distance in miles for the years 2002, 2008 and 2012, based on an original database constructed from the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES). The LODES dataset includes information on commute flows, residence area characteristics and workplace area characteristics at the census block level. SCAG staff aggregated LODES' block-level statistics to the 2010 census tract level, and used census tract-level data to estimate the median commute distance between origin and destination tracts in the SCAG region. The distance measured is the Euclidean distance, straight-line distance, or distance measured "as the crow flies" between the centroid of an origin tract and the centroid of a destination tract, and is therefore shorter than the actual commute distance incurred by travelers

EXHIBIT 7 and **EXHIBIT 8** depict the median commute distance by census tract for all jobs and low-wage jobs in the SCAG region respectively.

TABLE 34 Median Commute Distance (in Miles) by Wage in the SCAG Region, 2002-2012

2012					
Origin	Destination	All Jobs	Low Wage	Med. Wage	High Wage
SCAG	SCAG	10.1	9.0	9.7	11.3
Imperial	SCAG	8.5	6.3	9.1	9.6
Los Angeles	SCAG	9.1	8.1	8.9	10.1
Orange	SCAG	9.8	8.9	8.9	10.8
Riverside	SCAG	16.6	14.8	14.9	19.3
San Bernardino	SCAG	16.2	14.7	15.1	18.2
Ventura	SCAG	11.2	11.7	10.0	12.0
2008					
Origin	Destination	All Jobs	Low Wage	Med. Wage	High Wage
SCAG	SCAG	9.8	8.9	9.4	11.0
Imperial	SCAG	7.6	5.5	8.4	8.2
Los Angeles	SCAG	9.0	8.1	8.7	10.0
Orange	SCAG	9.3	8.6	8.4	10.3
Riverside	SCAG	15.8	14.2	14.3	18.5
San Bernardino	SCAG	15.7	14.8	14.7	17.4
Ventura	SCAG	10.5	11.2	9.3	11.4
2002					
Origin	Destination	All Jobs	Low Wage	Med. Wage	High Wage
SCAG	SCAG	9.4	8.6	8.8	11.0
Imperial	SCAG	7.5	8.1	7.2	5.6
Los Angeles	SCAG	8.8	8.2	8.4	10.2
Orange	SCAG	9.0	8.0	8.1	10.6
Riverside	SCAG	13.4	11.8	12.2	17.6
San Bernardino	SCAG	13.3	12.1	12.4	16.0
Ventura	SCAG	9.4	8.6	8.4	11.5

(Note: 'Low Wage' = Jobs with earnings $1250/month or less ; 'Med. Wage' = Jobs with earnings $1251/month to $3333/month; 'High Wage' = Jobs with earnings greater than $3333/month)

Source: SCAG, U.S. Census Bureau. 2015. LODES Data. Longitudinal-Employer Household Dynamics Program

EXHIBIT 7 Median Commute Distance for All Jobs
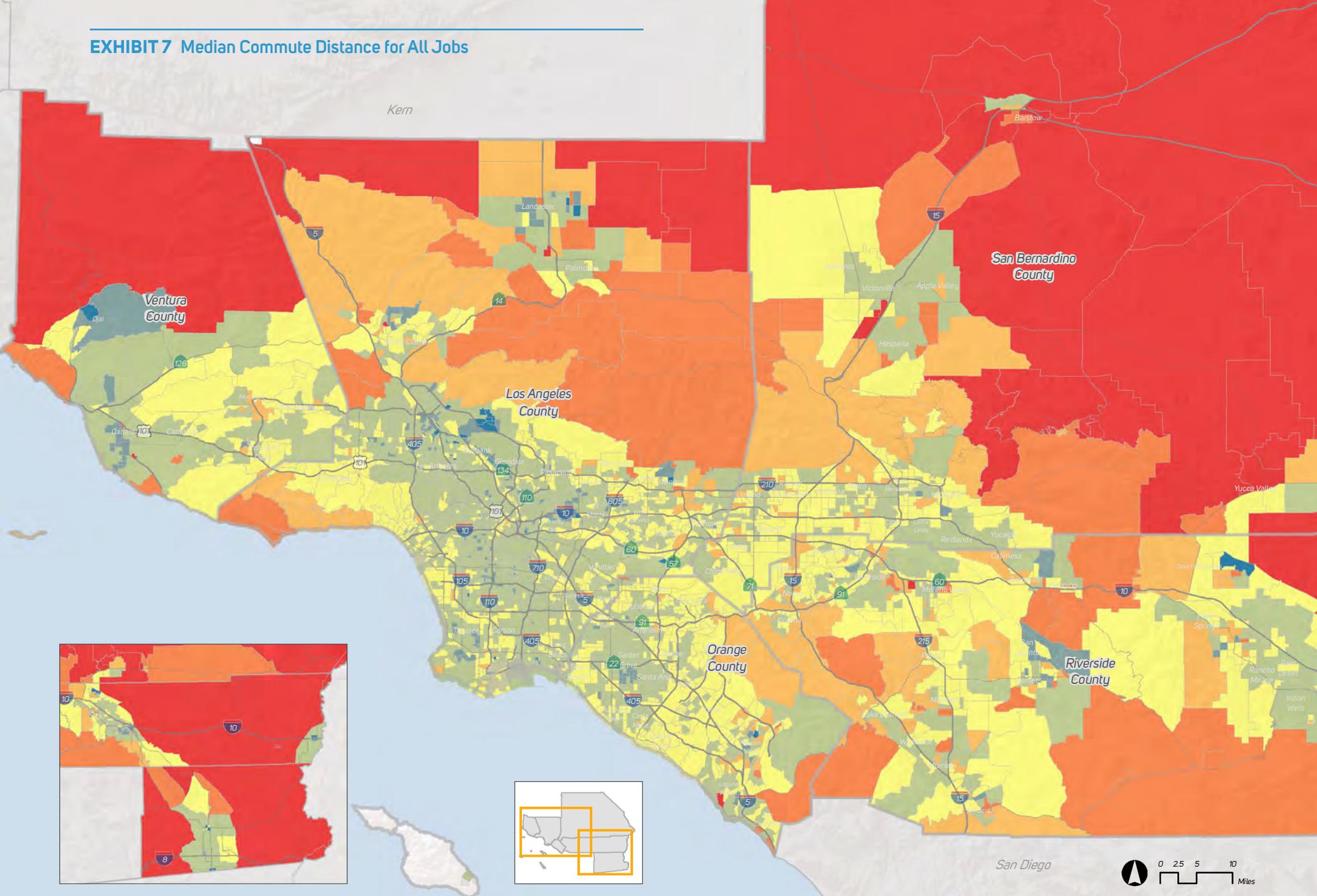
Median Commute Distance of All Jobs in 2012

- 3 Miles and Under
- 3 to 5
- 5 to 10
- 10 to 15
- 15 to 20
- 20 to 30
- Longer than 30 Miles

(Source: U.S. Census Bureau. 2015. Longitudinal-Employer Household Dynamics Program.)

EXHIBIT 8 Median Commute Distance for Low Wage Jobs
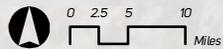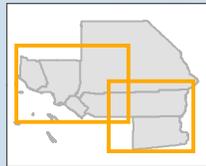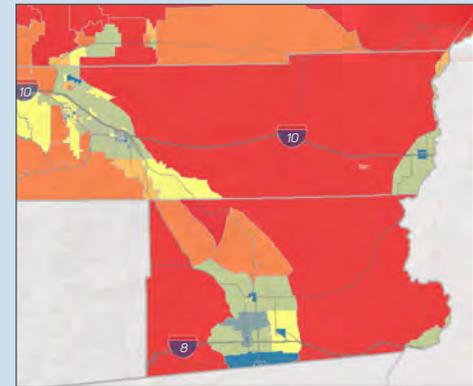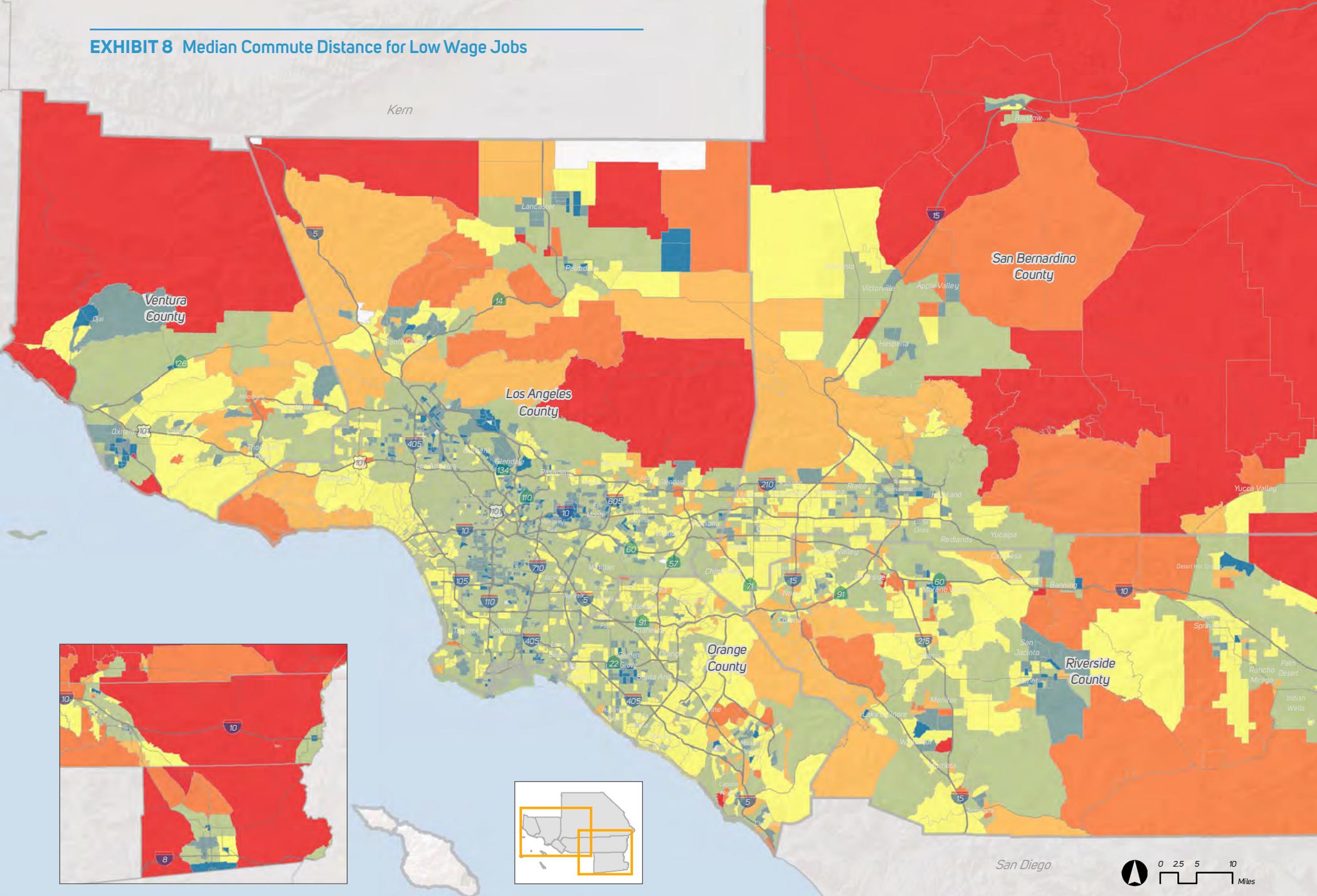
Median Commute Distance of Low Wage Jobs in 2012

- 3 Miles and Under
- 3 to 5
- 5 to 10
- 10 to 15
- 15 to 20
- 20 to 30
- Longer than 30 Miles

(Source: U.S. Census Bureau. 2015. Longitudinal-Employer Household Dynamics Program.)

TABLE 35 identifies the job-to-worker ratio by wage for the year 2012, based on LODES. Staff estimated total jobs and workers within the typical commute distance of each census tract. The median commute distance for all jobs in each county for 2012 was used as the typical commute distance. For example, the typical commute distance is 9.1 miles for census tracts in Los Angeles County. A higher job-to-worker ratio means more jobs, while a lower job-to-worker ratio means more workers.

EXHIBIT 9 and **EXHIBIT 10** depict the job-to-worker ratio for all jobs and low-wage jobs in the SCAG region, respectively. These statistics indicate that, given that commuting is expensive, higher wage workers can afford it and will commute longer for higher pay. On the other hand, lower wage workers tend to live closer to jobs. This also indicates that commute distance grew between 2002 and 2012 for all wage levels. The median commute distance for low-wage workers and high-wage workers were 8.6 miles and 11.0 miles in 2002, respectively, while they increased to 9.0 miles and 11.3 in 2012. Although the commute distance grew in all six counties between 2002 and 2012, it is observed that the commuting distance of workers in inland counties grew more rapidly than workers in coastal counties, especially for low-wage workers in inland counties. The growing commute distance can influence a range of economic, social, transportation and environmental outcomes, particularly to low-income and minority workers given the constraints they face, such as declines in job proximity and limited transportation options. Additionally, comparing the median commute distance and overall job-to-worker ratio between coastal counties and inland counties, counties with lower job-to-worker ratio generate more long distance commuters. This indicates the need for more job growth in inland counties, while coastal counties need more housing growth.

TABLE 35 Job-to-Worker Ratio by Wage in the SCAG Region, 2012

County	All Jobs	Low Wage	Med. Wage	High Wage
Imperial	0.94	0.93	0.93	1.01
Los Angeles	1.17	1.09	1.18	1.23
Orange	1.13	1.16	1.13	1.11
Riverside	0.86	0.88	0.85	0.88
San Bernardino	0.91	0.93	0.9	0.92
Ventura	0.91	0.97	0.91	0.86

Source: SCAG, U.S. Census Bureau. 2015. LODES Data. Longitudinal-Employer Household Dynamics Program

EXHIBIT 9 Ratio of All Job-to-All Worker
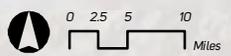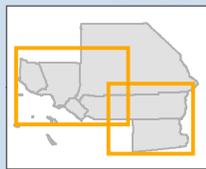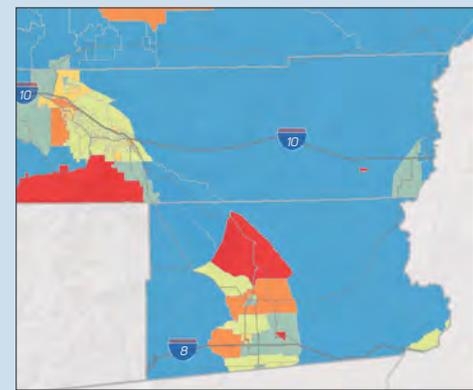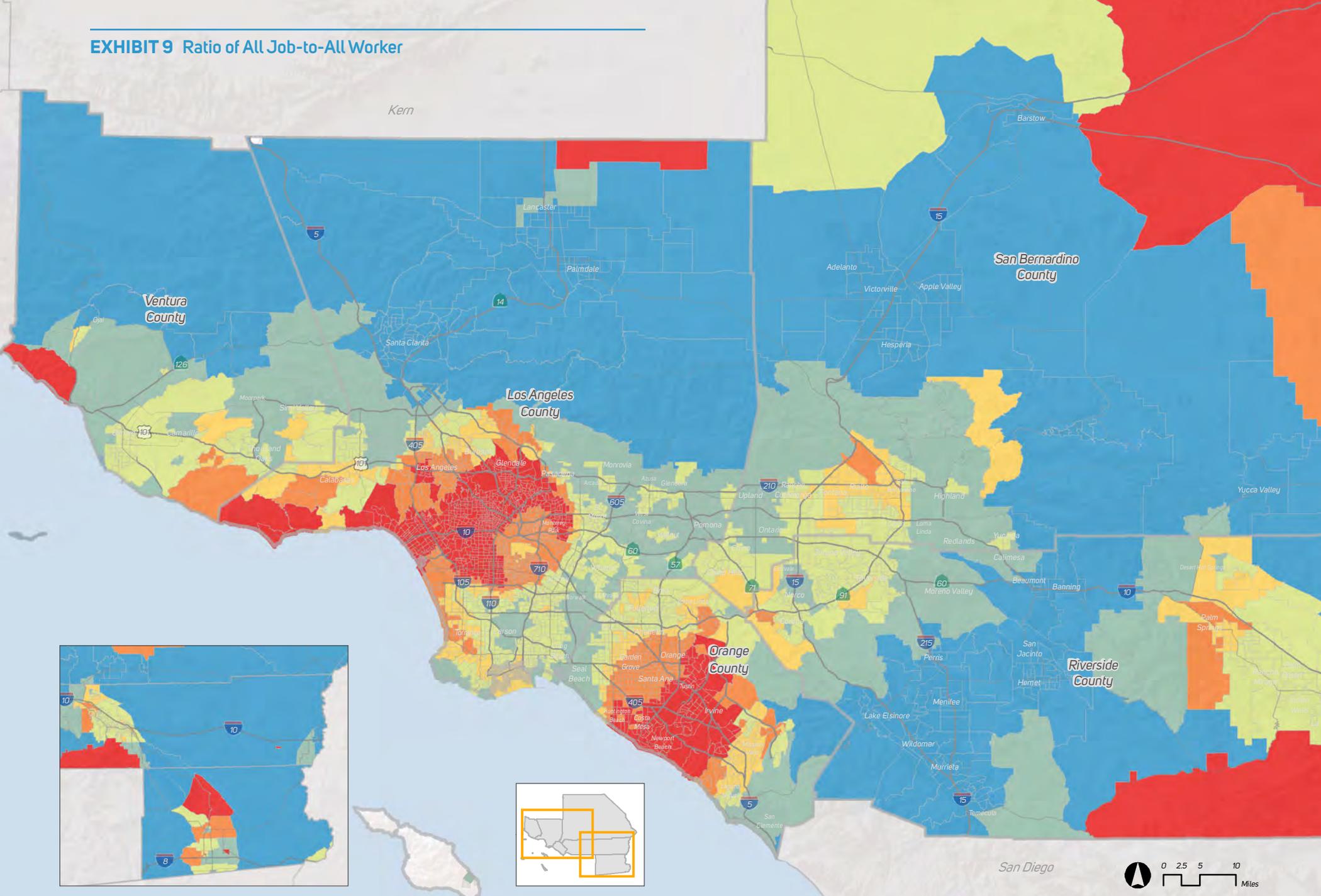
Ratio of All Jobs to All Workers in 2012

- Less than 0.7 (More Workers)
- 0.7 to 0.9
- 0.9 to 1
- 1 to 1.1
- 1.1 to 1.3
- More than 1.3 (More Jobs)

(Source: U.S. Census Bureau. 2015. Longitudinal-Employer Household Dynamics Program.)

EXHIBIT 10 Ratio of Low Wage Job-to-Low Wage Worker
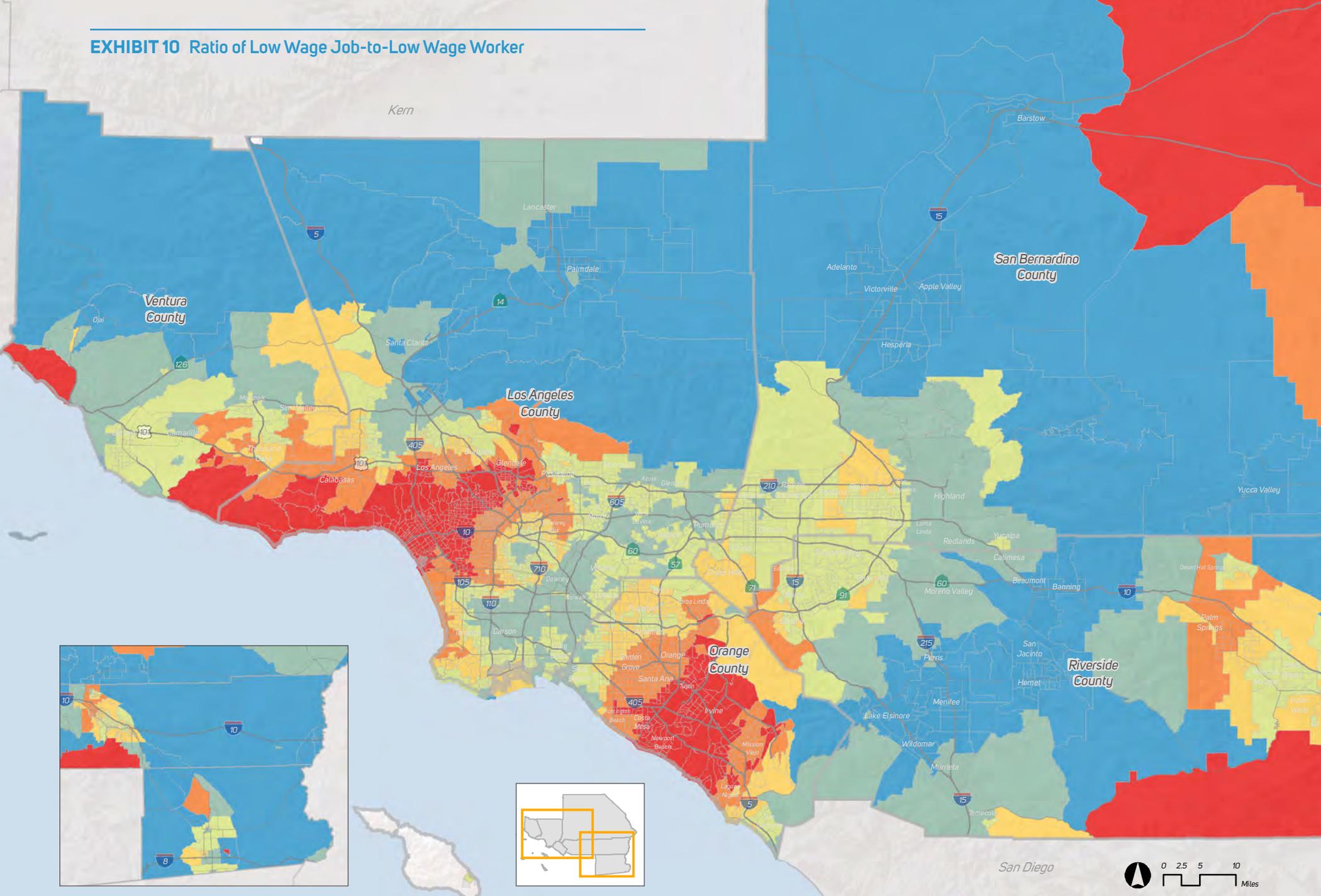
Ratio of Low Wage Jobs to Low Wage Workers in 2012

- ■ Less than 0.7 (More Workers)
- ■ 0.7 to 0.9
- ■ 0.9 to 1
- ■ 1 to 1.1
- ■ 1.1 to 1.3
- ■ More than 1.3 (More Jobs)

(Source: U.S. Census Bureau. 2015. Longitudinal-Employer Household Dynamics Program.)

Housing and travel costs are the two largest budget items in most households, often accounting for more than half of yearly expenditures. It is important, in the context of environmental justice considerations, to recognize the relative share of the costs of housing and daily travel. The U.S. Labor department's 2013-2014 Consumer Expenditure Survey shows that the average household in the Los Angeles MSA spends $55,546 per year on goods and services. The same household spends 38.7 percent, or $21,501, on housing costs and 15.0 percent, or $8,315, on transportation costs (U.S. Bureau of Labor Statistics, 2015). Because housing can be difficult to change and makes up a far larger share of the household budget, even joint decisions of housing and travel are likely to show a preference for lowering housing costs. This implies that households with severely constrained budgets will seek cheap housing, often through sub-standard quality and/or a longer commute.

As mentioned earlier, SCAG conducted a Jobs-Housing Fit (JHFIT) analysis for the region to expand on this analysis. The JHFIT approach was originally developed by the UC Davis Center for Regional Change in order to examine the right fit between available housing types and the income level of residents, based on data from the American Community Survey and LODES. This study provides a useful picture of the overall pattern of jobs and housings in the SCAG region. **EXHIBITS 11 - 13** depict the ratio of jobs to housing units—all jobs to all housing units, low wage jobs to affordable rental units, and low wage jobs to affordable rental and owned units, respectively. These maps show that there are more cities and places in coastal counties that have a substantial concentration of low-wage jobs, but lack an adequate number of apartments and homes that are affordable for people who are employed in those jobs. Coastal counties also have higher population density than inland counties. Alternatively, there are more cities and places in inland counties that have a substantial concentration of affordable housing units but have less low-wage jobs, particularly service jobs.

Although the descriptive analysis of the commuting distance of workers by income may indicate something of a spatial mismatch between low-income workers and jobs in the SCAG region, this condition is projected to improve in the future (see Table 8 of the Demographics and Growth Forecast Appendix). Population in inland counties suburbanized faster than jobs in the past, and as a result the population-employment (P-E) ratio was high for these areas. The Plan forsees that the P-E ratio will be lower in the future, because employment growth will be faster than population growth in inland counties. As the region is projected to experience faster employment growth in inland counties, where an abundant labor force is available, job-housing balance will likely improve and may result in the reduction of transportation congestion and related air quality problems. The spatial mismatch issue of low-income workers and jobs also may be less in the future than was observed from the recent data.

EXHIBIT 11 Ratio of All Job-to-All Housing Units

Ratio of All Jobs to Housing Units in 2013 (for Cities and Census Designated Places)

- Less than 1.00 (More Housing)
- 1.00 to 2.00
- 2.00 to 4.00
- More than 4.00 (More Jobs)

(Source: UC David, Center for Regional Change, 2015)

EXHIBIT 12 Ratio of Low Wage Job-to-Affordable Rental Units
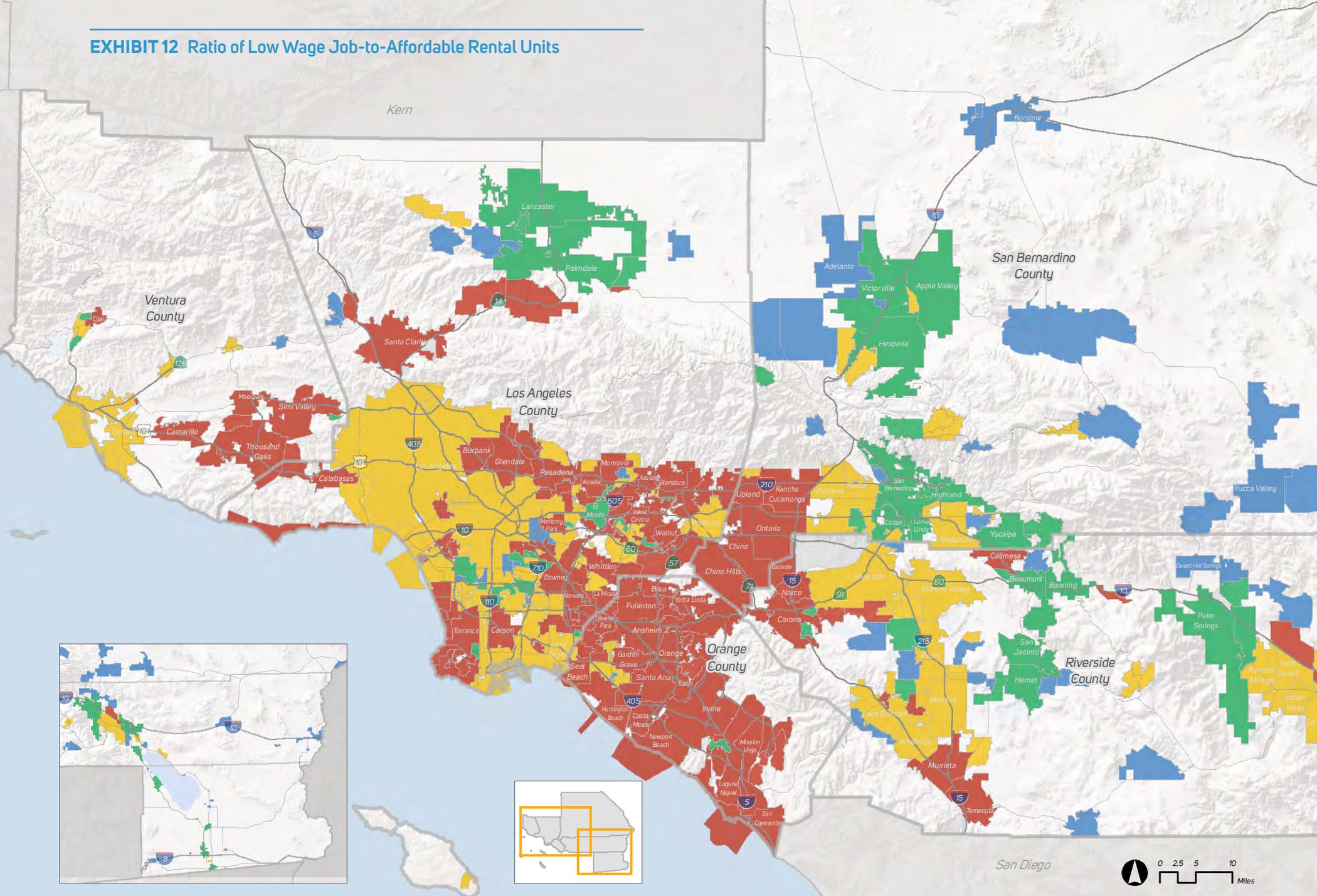
Ratio of Low-wage Jobs to Affordable Rental Units in 2013 (for Cities and Census Designated Places)

- Less than 1.00 (More Housing)
- 1.00 to 2.00
- 2.00 to 4.00
- More than 4.00 (More Jobs)

(Source: UC David, Center for Regional Change, 2015)

EXHIBIT 13 Ratio of Low Wage Job-to-Affordable Rental and Owned Units
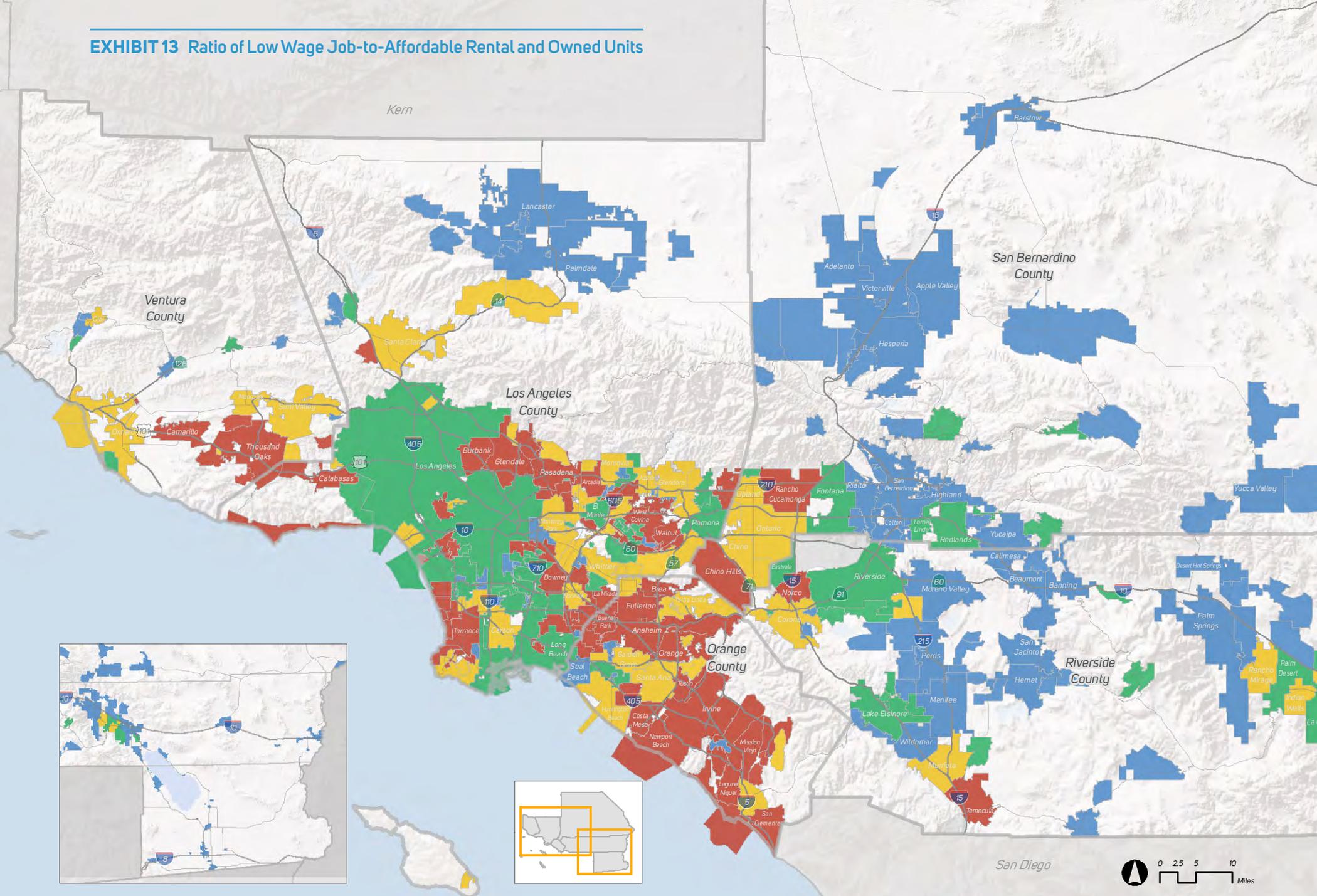
Ratio of Low-wage Jobs to Affordable Rental and Owned Units in 2013 (for Cities and Census Designated Places)

- Less than 1.00 (More Housing)
- 1.00 to 2.00
- 2.00 to 4.00
- More than 4.00 (More Jobs)

(Source: UC David, Center for Regional Change, 2015)

IMPACTS FROM FUNDING THROUGH MILEAGE-BASED USER FEES

This analysis is based on the funding strategy in the 2016 RTP/SCS, which recommends the implementation of a mileage-based user fee as a long-term replacement to the gasoline tax. The Plan calls for a mileage-based user fee of about $0.04 (in 2015 dollars) per mile beginning in 2025 and indexed to maintain purchasing power. The implementation of this strategy requires actions of both the California State Legislature and Congress, and is consistent with recommendations from two national commissions to improve the financial sustainability of the nation's transportation system. This funding strategy was included in the 2012 RTP/SCS, and has since gained additional statewide traction due to recent legislation (SB 1077) creating the California Road Usage Charge Pilot Program. Approved in September 2014, SB 1077 (DeSaulnier) directs California to conduct a pilot program to study the feasibility of a road charge as a replacement to the gas tax beginning no later than January 1, 2017. The pilot program will be implemented by the California State Transportation Agency (CalSTA). The outcomes of the road charge pilot program will be reported back to the pilot program technical advisory committee, the California Transportation Commission (CTC), and the State Legislature no later than June 30, 2018. The Legislature will then decide whether and how to enact a full-scale permanent road charge program. Some key policy issues that the Legislature will need to address include specific governance, accountability and approaches for protecting privacy as well as addressing income and geographic (e.g., urban vs. rural) equity impacts.

With the Plan's recommendation of an alternative funding strategy, it is important to assess the potential impacts of a mileage-based user fee on low-income communities. This will be done by contrasting the current gasoline excise tax of $0.363 per gallon, which is anticipated to climb to $0.463 in 2020, with the implementation of a mileage-based user fee of $0.04 per mile in 2025. **FIGURE 34** shows the average annual VMT per household by income quintile in 2012, which was derived from the 2009 National Household Travel Survey and post-processed to account for inflation in household income from 2009 to 2012. As demonstrated previously, households in Quintile 1 and 2 use transit, carpooling, and active transportation more frequently than households with higher incomes due to these modes' lower relative cost. It makes sense, then, that the number of miles driven annually would rise as incomes climb from Quintile 1 to Quintile 5. This is true as well when looking at Average Daily VMT (**FIGURE 35**). Because the gasoline tax is a charge on the quantity of gasoline purchased, the same trend is largely seen for average household gasoline taxes paid in 2012 (**FIGURE 36**). When looking at the gasoline taxes paid per mile for 2012, however, a different trend emerges. **FIGURE 37** demonstrates that households in the lowest earning quintile pay a higher rate per mile than all other groups, except the highest earning quintile (Quintile 5). In fact, Quintile 1 pays 11 percent higher in gasoline tax per mile than the lowest paying group, Quintile 4. This can largely be explained because lower income

households tend to own older cars that are less fuel efficient than their newer counterparts, which are normally 15 to 20 percent more fuel efficient than the general auto fleet.

Although the cost per mile for low-income households in 2012 is still lower than the proposed mileage-based user fee of $0.04 (assumed to start in 2025), gasoline taxes are anticipated to rise $0.10 by 2020, and could potentially continue to climb to maintain the nation's aging infrastructure. With that said, the gasoline tax and the mileage-based user fee are similar in nature because they are both regressive—lower income households will pay a disproportionately higher percentage of their income than is paid by higher income groups for both a gasoline tax or a mileage-based user fee. The mileage-based user fee is less "regressive" than the gasoline tax, however, because it allows lower income households to pay the same price per mile as other groups, whereas the gasoline tax does not. It also removes the advantages that higher income households have due to their access to relatively new and more fuel efficient vehicles, and promotes more equity in the funding of the region's transportation system.

FIGURE 34 Average Annual VMT Per Household by Income Quintile

Average Annual VMT Per Household

Source: SCAG, 2009 National Household Travel Survey

FIGURE 35 Average Daily VMT in Miles by Income Quintile

Average Daily VMT in Miles
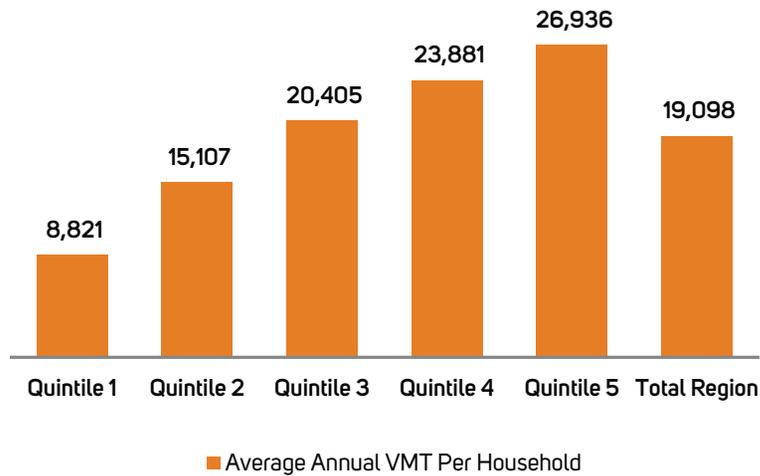
Source SCAG, 2009 National Household Travel Survey:

FIGURE 36 Average Household Gasoline Taxes in 2012

Average Household Gasoline Taxes in 2012

Source: SCAG, 2009 National Household Travel Survey, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics
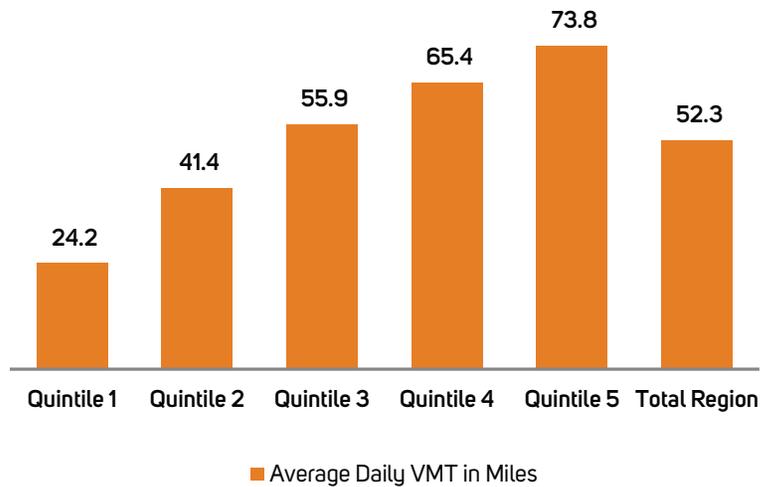
FIGURE 37 Gasoline Tax Per Mile in 2012
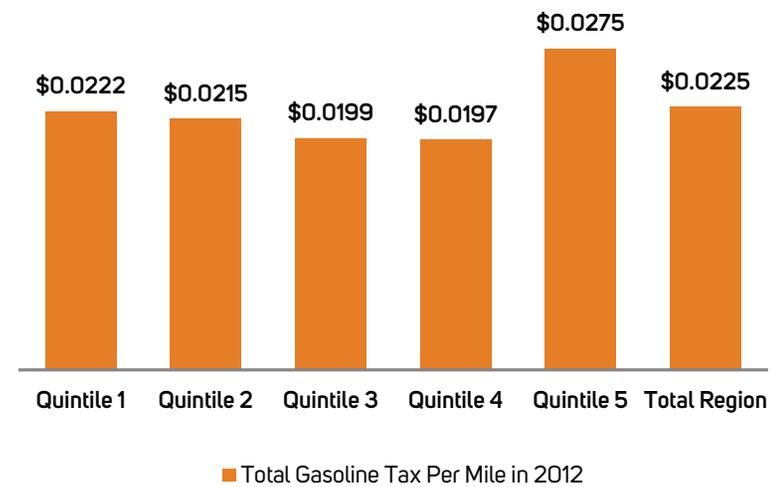
Total Gasoline Tax Per Mile in 2012

Source: SCAG, 2009 National Household Travel Survey, California State Board of Equalization, California Franchise Tax Board, US Bureau of Labor Statistics

ACCESSIBILITY TO EMPLOYMENT AND SERVICES

TIME-BASED JOB AND SHOPPING ACCESSIBILITY

It is widely understood that transportation and land use decisions determine access to opportunities and have far-reaching effects on social justice and equity. Transportation links people to places, allowing them to move between home, work, play and community services. Land use patterns or the distribution of activities within the urban landscape describe the spatial dispersion of these destinations, and together transportation and land use influence the ability of households to meet their daily needs. As such, accessibility to destinations is a foundation for social and economic interactions. As an indicator, accessibility is measured by the spatial distribution of potential destinations, the ease of reaching each destination, and the magnitude, quality and character of activities at potential destination sites. Travel costs are central: the lower the costs of travel in terms of time and money, the more places that can be reached within a certain budget and, thus, the greater the level of accessibility for residents of a particular neighborhood. Destination choice is equally crucial: a higher number of destinations and a greater level of variation in destinations equals a higher level of accessibility for a given locale.

METHODOLOGY

The goal of this analysis is to measure how the 2016 RTP/SCS impacts accessibility to important destinations such as employment, shopping, parks and schools for environmental justice population groups throughout the region, and specifically for areas that have a high concentration of minority and low-income residents. This section will examine accessibility both in the realm of travel time and travel distance, and seeks to answer the following questions: 1) Can residents reach more destinations by auto and transit within a reasonable travel time as a result of the Plan?; and 2) Does the Plan improve the share of destinations within a one-mile or two-mile travel distance due to improvements in transportation infrastructure?

First, in reviewing accessibility in the context of travel time for employment and shopping, this analysis measured the share of regional destinations that are reachable between work and home or between retail stores and home within 30 minutes of travel by automobile, and 45 minutes of travel by transit during the evening peak period (5pm to 7pm).Travel time by transit took into account factors incurred by riders that impact total travel time, such as the accumulation of initial wait time, transfer wait time, access walk time, egress walk time, transfer walk time, and in-vehicle time. In addition, accessibility is measured for all transit (bus and rail included) and exclusively for bus service. Results from the Plan (PL) are compared against the Baseline (BL) to gage the improvements from the 2016 RTP/SCS on

the environmental justice population groups throughout the region. Existing conditions for the Base Year (BY) are also presented to provide context of accessibility as it stands in 2012.

The general procedures for generating job and shopping accessibility are described as the following:

- Using SCAG's Travel Demand Model, develop a Transportation Analysis Zone (TAZ) to TAZ travel time matrix by mode: auto, local bus, and all transit.
- Identify total employment and retail destinations from SCAG's Business and Employment Database.
- For each TAZ, select all of the accessible employment and shopping destinations within the given travel time constraints.
- Summarize total jobs and shopping destinations reachable for each TAZ and calculate overall accessiblity for each environmental justice group.

Note that the analysis on employment does not examine the differing levels of accessiblity to higher income jobs, and treats each job equally. For information on the availability of higher earning employment opportunities in relation to affordable housing, please refer to the previous section on jobs-housing balence.

RESULTS

TABLES 36 and **37** present the share of the region's total employment and shopping destinations that are accessible to each environmental justice group within 30 minutes of travel by auto, or 45 minutes on transit under the BY, BL and PL scenarios. Results also show this same metric for population within Environmental Justice Areas (EJAs), Disadvantaged Communities (DACs), Communities of Concern (CoCs), Urban Areas and Rural Areas. **FIGURES 38 - 43** illustrate these results graphically.

The overall trend shows that job and shopping accessibility will improve for all environmental justice groups as a result of the Plan (when compared to the Baseline). This is true for auto travel as well as travel by transit, and is also seen in the region's areas of concern (EJAs, DACs, CoCs, Urban, Rural). When comparing these results to the Base Year, however, job and shopping accessibility generally decreases. This result indicates that the Plan scenario is beneficial to the region because it helps to accommodate population growth from 2012 to 2040 in a manner that is more efficient and equitable than the Baseline. **TABLES 38** and **40** specifically compare the difference between the Plan and the Baseline for these same variables. Indeed, there are positive improvements for accessibility accross the board for all population groups, for all subareas, and for both automobile and transit modes.

TABLE 36 Average Weighted Job Accessibility by Different Transportation Modes

Average Weighted Job Accessibility by Auto within 30 Minutes (Measured as the Percent of Regional Employment Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	14.3%	13.1%	17.3%	15.7%	14.6%	19.3%	19.0%	17.8%	23.4%	20.4%	19.1%	24.1%	14.9%	13.7%	18.2%	1.7%	1.4%	2.2%
Disabled	14.4%	12.9%	17.1%	15.6%	14.2%	18.8%	18.1%	17.0%	22.4%	19.8%	18.5%	23.3%	14.9%	13.6%	18.0%	1.4%	1.3%	2.0%
Poverty 1	16.8%	14.5%	19.0%	18.1%	15.9%	20.9%	21.3%	19.3%	24.9%	22.6%	20.7%	25.8%	17.4%	15.2%	20.0%	1.4%	1.2%	1.9%
White	13.1%	12.2%	16.3%	13.9%	13.1%	17.5%	16.3%	16.3%	21.7%	16.0%	17.3%	21.9%	13.7%	12.8%	17.1%	1.8%	1.6%	2.3%
African American	18.4%	14.2%	18.8%	19.5%	15.5%	20.6%	22.2%	18.6%	24.3%	25.0%	21.7%	27.3%	18.7%	14.8%	19.8%	1.9%	1.4%	2.2%
Asian	17.5%	15.6%	20.8%	19.2%	17.4%	23.3%	20.9%	20.0%	26.6%	21.1%	20.9%	26.7%	17.7%	15.9%	21.4%	2.8%	1.5%	2.1%
Native American	11.7%	10.7%	14.3%	12.1%	11.1%	15.1%	17.0%	15.1%	20.2%	19.0%	15.6%	19.7%	13.1%	11.8%	15.9%	0.8%	1.0%	1.5%
Hispanic	15.7%	13.3%	17.6%	16.6%	14.6%	19.4%	19.2%	17.6%	23.1%	20.6%	19.0%	23.8%	16.1%	13.9%	18.6%	1.4%	1.3%	2.0%
Other Race	14.6%	13.4%	17.8%	16.0%	14.8%	19.7%	18.4%	17.9%	23.7%	20.3%	19.6%	24.8%	15.1%	14.0%	18.7%	1.8%	1.4%	2.1%
Income 1	16.5%	14.2%	18.6%	17.8%	15.6%	20.5%	21.2%	19.0%	24.6%	22.4%	20.3%	25.5%	17.1%	14.9%	19.7%	1.4%	1.2%	1.9%
Income 2	15.3%	13.6%	18.0%	16.6%	14.9%	19.8%	19.6%	18.1%	23.7%	21.0%	19.4%	24.4%	15.9%	14.2%	19.0%	1.5%	1.3%	2.0%
Income 3	14.6%	13.1%	17.5%	15.8%	14.4%	19.3%	18.5%	17.4%	23.1%	20.1%	18.9%	23.8%	15.1%	13.7%	18.4%	1.7%	1.4%	2.1%
Income 4	14.1%	12.9%	17.3%	15.5%	14.2%	19.2%	17.7%	17.0%	22.8%	19.3%	18.4%	23.4%	14.6%	13.5%	18.1%	1.9%	1.5%	2.2%
Income 5	14.4%	13.2%	17.7%	16.1%	14.9%	20.0%	17.7%	17.4%	23.3%	19.0%	18.8%	23.8%	14.8%	13.7%	18.5%	2.3%	1.7%	2.4%
Average	15.1%	13.3%	17.7%	16.3%	14.7%	19.5%	19.1%	17.7%	23.4%	20.5%	19.2%	24.2%	15.6%	14.0%	18.7%	1.7%	1.4%	2.1%

Average Weighted Job Accessibility by All Transit within 45 Minutes (Measured as the Percent of Regional Employment Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	3.3%	3.2%	6.5%	4.4%	4.2%	8.5%	5.8%	5.5%	11.1%	6.9%	6.6%	12.4%	3.4%	3.3%	6.9%	0.2%	0.2%	0.5%
Disabled	3.8%	3.3%	6.7%	4.6%	4.0%	8.1%	5.8%	5.2%	10.3%	6.8%	6.2%	11.6%	4.0%	3.5%	7.1%	0.2%	0.2%	0.5%
Poverty 1	5.4%	4.3%	8.6%	6.3%	5.2%	10.2%	7.9%	6.6%	12.8%	8.6%	7.5%	13.8%	5.5%	4.5%	9.0%	0.2%	0.2%	0.5%
White	2.7%	2.7%	5.6%	3.9%	3.8%	7.8%	4.5%	5.0%	10.5%	4.1%	5.7%	11.1%	2.9%	2.8%	5.9%	0.3%	0.2%	0.4%
African American	6.5%	4.5%	8.5%	7.3%	5.2%	9.8%	8.6%	6.3%	11.7%	10.3%	8.4%	14.8%	6.6%	4.7%	8.9%	0.2%	0.1%	0.4%
Asian	4.2%	3.8%	7.9%	5.3%	5.0%	10.3%	6.5%	6.4%	13.0%	6.8%	7.2%	14.0%	4.2%	3.9%	8.2%	0.4%	0.4%	0.9%
Native American	2.7%	2.5%	5.2%	3.4%	3.2%	6.6%	5.1%	4.5%	9.3%	6.2%	5.2%	10.0%	3.0%	2.7%	5.9%	0.1%	0.1%	0.2%
Hispanic	4.4%	3.5%	7.2%	5.0%	4.3%	8.7%	6.2%	5.4%	10.8%	7.1%	6.4%	12.0%	4.5%	3.7%	7.6%	0.1%	0.1%	0.4%
Other Race	3.7%	3.5%	7.1%	4.9%	4.7%	9.4%	5.9%	6.0%	12.0%	7.1%	7.1%	13.4%	3.8%	3.7%	7.5%	0.3%	0.2%	0.5%
Income 1	5.2%	4.2%	8.2%	6.2%	5.0%	10.0%	7.8%	6.4%	12.5%	8.6%	7.4%	13.6%	5.4%	4.4%	8.7%	0.1%	0.1%	0.4%
Income 2	4.2%	3.6%	7.3%	5.2%	4.5%	9.0%	6.5%	5.7%	11.4%	7.4%	6.6%	12.4%	4.4%	3.8%	7.7%	0.2%	0.1%	0.4%
Income 3	3.5%	3.2%	6.6%	4.5%	4.1%	8.4%	5.6%	5.2%	10.6%	6.7%	6.2%	11.8%	3.7%	3.4%	7.0%	0.2%	0.1%	0.4%
Income 4	3.1%	2.9%	6.2%	4.1%	3.9%	8.1%	5.0%	5.0%	10.3%	6.1%	6.0%	11.5%	3.2%	3.1%	6.5%	0.3%	0.2%	0.5%
Income 5	3.0%	2.9%	6.1%	4.3%	4.2%	8.6%	4.8%	5.2%	10.8%	5.8%	6.3%	12.2%	3.0%	3.1%	6.4%	0.5%	0.3%	0.6%
Average	4.0%	3.4%	7.0%	4.9%	4.4%	8.8%	6.1%	5.6%	11.2%	7.0%	6.6%	12.5%	4.1%	3.6%	7.4%	0.2%	0.2%	0.5%

TABLE 36 Average Weighted Job Accessibility by Different Transportation Modes Continued

	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Average Weighted Job Accessibility by Local Bus within 45 Minutes (Measured as the Percent of Regional Employment Accessible for Each Cohort																		
Seniors	1.7%	1.6%	3.1%	2.2%	2.1%	4.1%	2.9%	2.8%	5.4%	3.1%	3.1%	5.8%	1.7%	1.7%	3.2%	0.1%	0.1%	0.3%
Disabled	2.0%	1.7%	3.1%	2.3%	2.0%	3.8%	2.9%	2.6%	4.8%	3.1%	2.8%	5.2%	2.0%	1.8%	3.3%	0.2%	0.1%	0.3%
Poverty 1	2.8%	2.2%	4.1%	3.3%	2.6%	5.0%	4.1%	3.3%	6.2%	4.0%	3.4%	6.3%	2.9%	2.3%	4.4%	0.1%	0.1%	0.2%
White	1.5%	1.4%	2.6%	2.1%	2.0%	3.9%	2.4%	2.7%	5.2%	2.0%	2.8%	5.5%	1.6%	1.5%	2.8%	0.2%	0.1%	0.3%
African American	2.9%	2.0%	3.8%	3.2%	2.3%	4.5%	3.8%	2.8%	5.3%	3.9%	3.2%	6.2%	2.9%	2.1%	4.0%	0.1%	0.1%	0.2%
Asian	2.3%	2.0%	3.8%	2.9%	2.7%	5.1%	3.6%	3.4%	6.6%	3.6%	3.5%	6.8%	2.3%	2.1%	4.0%	0.3%	0.2%	0.5%
Native American	1.4%	1.3%	2.5%	1.8%	1.7%	3.3%	2.7%	2.3%	4.6%	2.8%	2.4%	4.7%	1.6%	1.5%	2.8%	0.0%	0.0%	0.1%
Hispanic	2.2%	1.8%	3.4%	2.5%	2.1%	4.2%	3.1%	2.7%	5.1%	3.3%	2.9%	5.4%	2.3%	1.9%	3.6%	0.1%	0.1%	0.2%
Other Race	1.9%	1.8%	3.5%	2.6%	2.4%	4.8%	3.0%	3.1%	6.1%	3.1%	3.3%	6.5%	2.0%	1.9%	3.6%	0.2%	0.1%	0.3%
Income 1	2.7%	2.1%	4.0%	3.2%	2.6%	4.9%	4.0%	3.2%	6.1%	4.0%	3.3%	6.2%	2.8%	2.2%	4.2%	0.1%	0.1%	0.2%
Income 2	2.2%	1.8%	3.5%	2.6%	2.3%	4.4%	3.2%	2.8%	5.5%	3.3%	3.0%	5.6%	2.2%	1.9%	3.7%	0.1%	0.1%	0.2%
Income 3	1.8%	1.6%	3.1%	2.3%	2.1%	4.1%	2.7%	2.6%	5.1%	3.0%	2.8%	5.3%	1.9%	1.7%	3.3%	0.1%	0.1%	0.2%
Income 4	1.6%	1.5%	2.9%	2.0%	2.0%	3.9%	2.4%	2.5%	4.9%	2.6%	2.7%	5.3%	1.6%	1.6%	3.0%	0.2%	0.1%	0.3%
Income 5	1.5%	1.5%	2.9%	2.2%	2.2%	4.2%	2.4%	2.7%	5.3%	2.6%	3.0%	5.7%	1.6%	1.6%	3.0%	0.3%	0.2%	0.4%
Average	2.0%	1.7%	3.3%	2.5%	2.2%	4.3%	3.1%	2.8%	5.4%	3.2%	3.0%	5.8%	2.1%	1.8%	3.5%	0.2%	0.1%	0.3%

Source SCAG

TABLE 37 Average Weighted Shopping Accessibility by Different Transportation Modes

Average Weighted Shopping Accessibility by Auto within 30 Minutes (Measured as the Percent of Regional Shopping Destinations Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	17.3%	15.5%	19.0%	19.0%	17.1%	20.9%	23.1%	20.9%	25.2%	23.4%	21.4%	25.0%	17.9%	16.2%	19.9%	2.7%	2.3%	3.0%
Disabled	17.5%	15.5%	18.9%	18.8%	16.9%	20.5%	22.1%	20.3%	24.3%	22.8%	21.0%	24.5%	18.1%	16.2%	19.8%	2.3%	2.0%	2.7%
Poverty 1	19.4%	16.7%	20.3%	20.7%	18.3%	22.0%	24.6%	22.3%	26.2%	25.2%	23.1%	26.5%	20.0%	17.5%	21.3%	2.4%	1.9%	2.6%
White	15.3%	14.1%	17.6%	16.1%	15.1%	18.7%	20.2%	19.0%	23.5%	19.1%	19.4%	22.9%	16.0%	14.8%	18.5%	3.0%	2.4%	3.1%
African American	20.8%	16.4%	19.7%	21.9%	17.7%	21.2%	25.0%	21.4%	25.0%	26.4%	23.6%	26.7%	21.1%	17.1%	20.7%	3.3%	2.2%	3.0%
Asian	20.9%	18.2%	22.3%	23.0%	20.3%	24.8%	25.2%	23.3%	27.9%	24.6%	23.4%	27.4%	21.1%	18.6%	23.0%	4.9%	2.3%	3.0%
Native American	14.3%	12.7%	15.7%	14.8%	13.2%	16.3%	21.0%	18.0%	22.0%	21.8%	17.5%	20.5%	16.1%	14.0%	17.4%	1.3%	1.5%	2.0%
Hispanic	19.2%	15.8%	19.3%	20.2%	17.2%	21.0%	23.2%	20.9%	25.0%	23.6%	21.5%	25.0%	19.6%	16.5%	20.3%	2.3%	2.1%	2.7%
Other Race	17.2%	15.4%	19.1%	18.6%	16.8%	20.8%	21.9%	20.6%	25.0%	22.7%	21.6%	25.3%	17.7%	16.1%	20.0%	3.0%	2.2%	2.9%
Income 1	19.0%	16.4%	19.9%	20.4%	17.9%	21.6%	24.4%	21.9%	25.9%	24.9%	22.7%	26.1%	19.7%	17.2%	21.0%	2.3%	1.9%	2.6%
Income 2	18.2%	15.9%	19.5%	19.7%	17.4%	21.2%	23.4%	21.2%	25.4%	23.8%	21.8%	25.3%	18.8%	16.6%	20.5%	2.5%	2.1%	2.8%
Income 3	17.6%	15.5%	19.1%	19.1%	17.0%	20.8%	22.6%	20.6%	24.9%	23.1%	21.2%	24.8%	18.1%	16.2%	20.1%	2.7%	2.2%	2.9%
Income 4	17.1%	15.4%	19.0%	18.9%	16.9%	20.8%	22.1%	20.3%	24.7%	22.4%	20.8%	24.4%	17.7%	16.0%	19.8%	3.2%	2.4%	3.0%
Income 5	17.1%	15.6%	19.3%	19.4%	17.5%	21.6%	22.0%	20.6%	25.2%	22.0%	21.0%	24.8%	17.6%	16.1%	20.1%	3.8%	2.6%	3.3%
Average	17.9%	15.6%	19.2%	19.3%	17.1%	20.9%	22.9%	20.8%	25.0%	23.3%	21.4%	24.9%	18.5%	16.4%	20.2%	2.8%	2.1%	2.8%

Average Weighted Shopping Accessibility by All Transit within 45 Minutes (Measured as the Percent of Regional Shopping Destinations Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	1.8%	1.8%	3.7%	2.4%	2.4%	5.0%	3.1%	3.1%	6.6%	3.8%	3.7%	7.6%	1.8%	1.9%	3.9%	0.1%	0.1%	0.1%
Disabled	2.1%	1.8%	3.8%	2.5%	2.3%	4.7%	3.1%	2.9%	6.1%	3.7%	3.5%	7.1%	2.2%	1.9%	4.0%	0.1%	0.1%	0.1%
Poverty 1	3.0%	2.5%	5.0%	3.6%	3.0%	6.1%	4.5%	3.8%	7.8%	4.8%	4.3%	8.6%	3.1%	2.6%	5.3%	0.0%	0.0%	0.1%
White	1.5%	1.5%	3.1%	2.3%	2.3%	4.6%	2.4%	2.8%	6.3%	2.2%	3.3%	6.8%	1.6%	1.6%	3.2%	0.1%	0.1%	0.1%
African American	3.6%	2.5%	5.0%	4.1%	3.0%	5.9%	4.8%	3.5%	7.0%	5.7%	4.7%	9.1%	3.7%	2.6%	5.2%	0.1%	0.0%	0.1%
Asian	2.3%	2.1%	4.4%	3.0%	2.9%	6.0%	3.5%	3.6%	7.7%	3.8%	4.1%	8.6%	2.3%	2.2%	4.6%	0.1%	0.1%	0.2%
Native American	1.5%	1.4%	2.9%	1.9%	1.8%	3.9%	2.8%	2.5%	5.5%	3.4%	3.0%	6.1%	1.6%	1.6%	3.3%	0.0%	0.0%	0.1%
Hispanic	2.4%	2.0%	4.1%	2.7%	2.4%	5.1%	3.4%	3.0%	6.5%	3.9%	3.6%	7.4%	2.4%	2.1%	4.4%	0.0%	0.0%	0.1%
Other Race	2.0%	2.0%	4.1%	2.8%	2.7%	5.6%	3.2%	3.4%	7.3%	3.9%	4.1%	8.3%	2.1%	2.1%	4.3%	0.1%	0.1%	0.1%
Income 1	2.9%	2.4%	4.8%	3.5%	2.9%	6.0%	4.4%	3.7%	7.6%	4.8%	4.2%	8.4%	3.0%	2.5%	5.1%	0.0%	0.0%	0.1%
Income 2	2.3%	2.0%	4.2%	2.9%	2.6%	5.3%	3.6%	3.2%	6.8%	4.1%	3.8%	7.7%	2.4%	2.1%	4.5%	0.1%	0.0%	0.1%
Income 3	1.9%	1.8%	3.7%	2.5%	2.3%	4.9%	3.0%	2.9%	6.3%	3.6%	3.5%	7.2%	2.0%	1.9%	4.0%	0.1%	0.0%	0.1%
Income 4	1.6%	1.6%	3.4%	2.2%	2.2%	4.7%	2.6%	2.7%	6.0%	3.2%	3.4%	7.0%	1.7%	1.7%	3.6%	0.1%	0.1%	0.1%
Income 5	1.6%	1.6%	3.3%	2.4%	2.4%	5.0%	2.5%	2.9%	6.3%	3.1%	3.6%	7.5%	1.6%	1.7%	3.5%	0.1%	0.1%	0.2%
Average	2.2%	1.9%	4.0%	2.8%	2.5%	5.2%	3.3%	3.1%	6.7%	3.9%	3.8%	7.7%	2.3%	2.0%	4.2%	0.1%	0.1%	0.1%

TABLE 37 Average Weighted Shopping Accessibility by Different Transportation Mode Continued

Average Weighted Shopping Accessibility by Local Bus within 45 Minutes (Measured as the Percent of Regional Shopping Destinations Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DGA (BY)	DGA (BL)	DGA (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	1.0%	1.0%	1.7%	1.4%	1.4%	2.4%	1.7%	1.8%	3.1%	1.9%	1.9%	3.5%	1.1%	1.1%	1.8%	0.1%	0.1%	0.1%
Disabled	1.2%	1.1%	1.7%	1.5%	1.3%	2.2%	1.7%	1.6%	2.7%	1.9%	1.8%	3.0%	1.3%	1.1%	1.8%	0.1%	0.1%	0.1%
Poverty 1	1.7%	1.4%	2.4%	2.1%	1.7%	2.9%	2.5%	2.1%	3.6%	2.4%	2.1%	3.8%	1.8%	1.5%	2.5%	0.0%	0.0%	0.1%
White	1.0%	0.9%	1.5%	1.4%	1.4%	2.3%	1.5%	1.7%	3.1%	1.2%	1.8%	3.3%	1.0%	1.0%	1.6%	0.1%	0.1%	0.1%
African American	1.8%	1.3%	2.2%	2.0%	1.5%	2.7%	2.3%	1.7%	3.1%	2.4%	2.0%	3.8%	1.8%	1.3%	2.4%	0.1%	0.0%	0.1%
Asian	1.4%	1.3%	2.2%	1.9%	1.7%	3.0%	2.2%	2.1%	3.8%	2.2%	2.2%	4.1%	1.4%	1.3%	2.2%	0.1%	0.1%	0.1%
Native American	0.9%	0.9%	1.4%	1.1%	1.1%	1.9%	1.6%	1.5%	2.7%	1.7%	1.5%	2.8%	1.0%	0.9%	1.6%	0.0%	0.0%	0.0%
Hispanic	1.4%	1.1%	1.9%	1.5%	1.4%	2.4%	1.9%	1.7%	2.9%	2.0%	1.8%	3.1%	1.4%	1.2%	2.0%	0.0%	0.0%	0.1%
Other Race	1.2%	1.2%	2.0%	1.7%	1.6%	2.8%	1.9%	2.0%	3.6%	1.9%	2.1%	4.0%	1.3%	1.2%	2.1%	0.1%	0.1%	0.1%
Income 1	1.7%	1.4%	2.3%	2.0%	1.7%	2.9%	2.5%	2.0%	3.6%	2.4%	2.1%	3.7%	1.8%	1.4%	2.4%	0.0%	0.0%	0.1%
Income 2	1.4%	1.2%	2.0%	1.7%	1.5%	2.6%	2.0%	1.8%	3.2%	2.0%	1.9%	3.3%	1.4%	1.2%	2.1%	0.0%	0.0%	0.1%
Income 3	1.1%	1.1%	1.8%	1.4%	1.4%	2.3%	1.7%	1.6%	2.9%	1.8%	1.8%	3.2%	1.2%	1.1%	1.9%	0.1%	0.0%	0.1%
Income 4	1.0%	1.0%	1.6%	1.3%	1.3%	2.3%	1.5%	1.6%	2.8%	1.6%	1.7%	3.1%	1.0%	1.0%	1.7%	0.1%	0.0%	0.1%
Income 5	1.0%	1.0%	1.6%	1.4%	1.4%	2.5%	1.5%	1.7%	3.1%	1.6%	1.9%	3.4%	1.0%	1.0%	1.7%	0.1%	0.1%	0.1%
Average	1.3%	1.1%	1.9%	1.6%	1.4%	2.5%	1.9%	1.8%	3.2%	1.9%	1.9%	3.4%	1.3%	1.2%	2.0%	0.1%	0.0%	0.1%

Source SCAG

FIGURE 38 Total Job and Shopping Accessibility by Mode: Population in Need

Poverty 1
- 1.75%
- 2.80%
- 3.04%
- 5.35%
- 19.39%
- 16.81%

Disabled
- 1.22%
- 1.95%
- 2.07%
- 3.82%
- 17.48%
- 14.41%

Seniors
- 1.03%
- 1.66%
- 1.76%
- 3.28%
- 17.27%
- 14.33%

■ Local Bus (Shop) ■ Local Bus (Job) ■ All Transit (Shop)
■ All Transit (Job) ■ Auto (Shop) ■ Auto (Job)
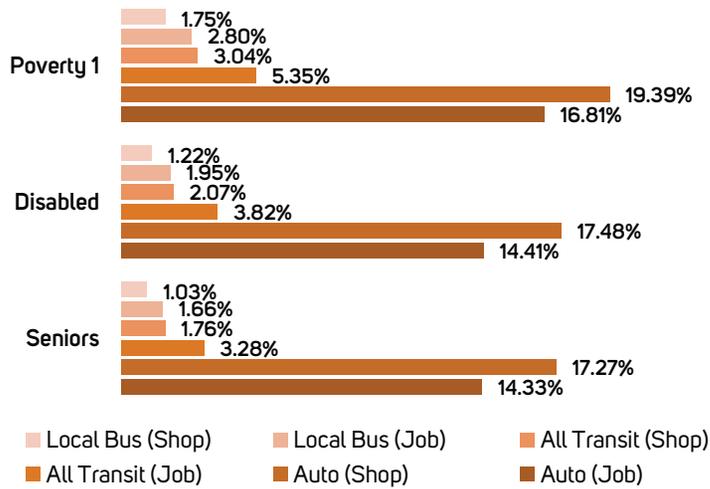
Source SCAG

FIGURE 40 Total Job and Shopping Accessibility by Mode: Ethnicity

Other Race
Hispanic
Native American
Asian
African American
White

0%   5%   10%   15%   20%   25%

■ Local Bus (Shop) ■ Local Bus (Job) ■ All Transit (Shop)
■ All Transit (Job) ■ Auto (Shop) ■ Auto (Job)
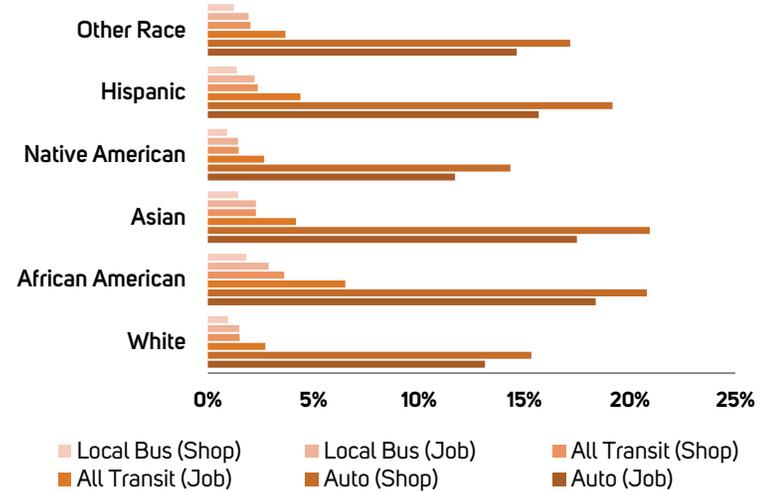
Source SCAG

FIGURE 39 Total Job and Shopping Accessibility by Mode: Income

Income 5
Income 4
Income 3
Income 2
Income 1

0%   5%   10%   15%   20%

■ Local Bus (Shop) ■ Local Bus (Job) ■ All Transit (Shop)
■ All Transit (Job) ■ Auto (Shop) ■ Auto (Job)
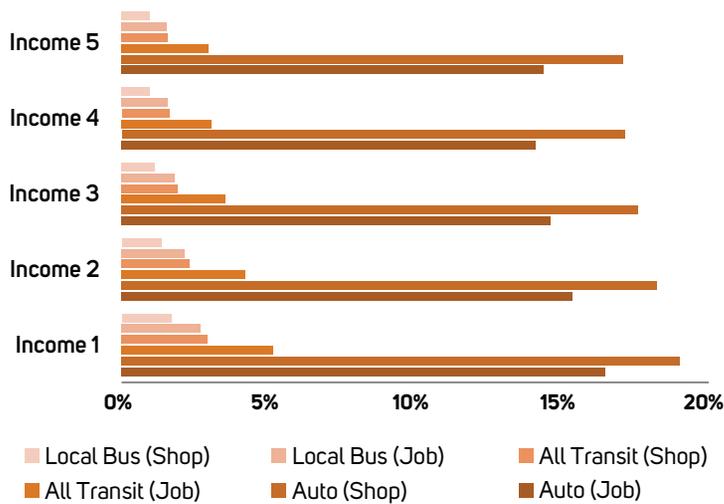
Source SCAG

FIGURE 41 2016-2040 RTP/SCS Impacts on Job and Shopping Accessibility: Population in Need

Poverty 1
- 68.67%
- 87.72%
- 103.67%
- 97.58%
- 21.32%
- 31.41%

Disabled
- 62.80%
- 85.71%
- 106.70%
- 102.15%
- 22.08%
- 32.27%

Seniors
- 66.73%
- 88.13%
- 107.83%
- 104.69%
- 22.38%
- 32.22%

■ Local Bus (Shop) ■ Local Bus (Job) ■ All Transit (Shop)
■ All Transit (Job) ■ Auto (Shop) ■ Auto (Job)
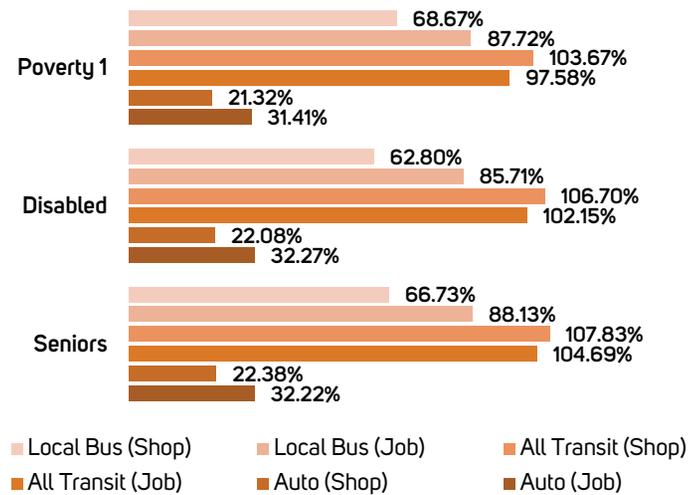
Source: SCAG

FIGURE 42 2016-2040 RTP/SCS Impacts on Job and Shopping Accessibility: Income

Local Bus (Shop)   Local Bus (Job)   All Transit (Shop)
All Transit (Job)   Auto (Shop)   Auto (Job)
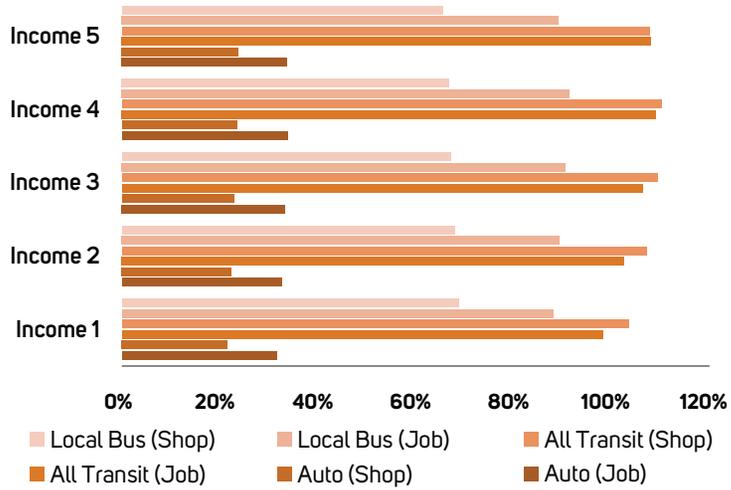
Source:SCAG

FIGURE 43 2016-2040 RTP/SCS Impacts on Job and Shopping Accessibility: Ethnicity

Local Bus (Shop)   Local Bus (Job)   All Transit (Shop)
All Transit (Job)   Auto (Shop)   Auto (Job)
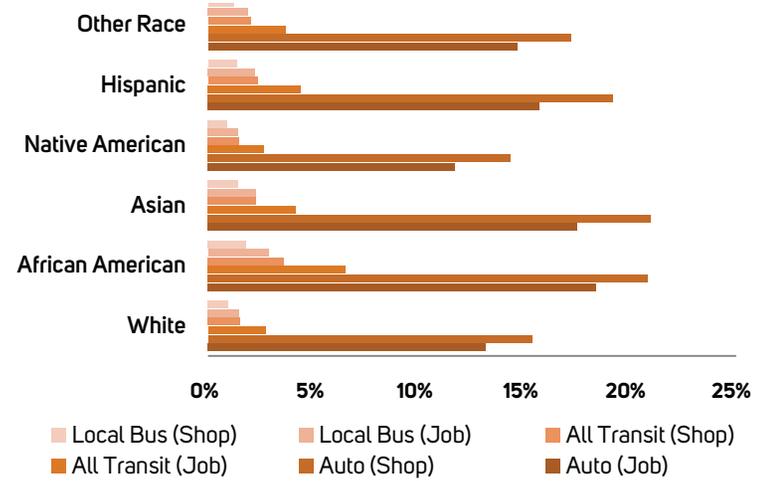
Source:SCAG

TABLE 38 Comparison of Job and Shopping Accessibility By Auto Within 30 Minute Drive

Comparison of Weighted Average Job Accessibility by Auto within 30 Minutes (Difference in the Percent of Accessible Jobs Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	-8.5%	-7.6%	-6.6%	-6.6%	-7.8%	-13.3%	32.2%	32.7%	31.7%	26.0%	32.9%	49.5%
Disabled	-10.2%	-8.9%	-6.3%	-6.9%	-9.2%	-9.3%	32.3%	32.6%	31.5%	26.1%	32.9%	52.6%
Poverty 1	-13.9%	-12.0%	-9.7%	-8.6%	-12.7%	-13.8%	31.4%	31.5%	29.5%	24.8%	32.1%	52.2%
White	-7.3%	-5.6%	-0.3%	8.1%	-6.9%	-13.7%	33.6%	33.2%	33.3%	26.8%	34.1%	42.8%
African American	-22.6%	-20.5%	-16.5%	-13.2%	-20.7%	-25.4%	32.6%	32.9%	31.1%	25.7%	33.4%	59.2%
Asian	-11.0%	-9.4%	-4.4%	-0.6%	-9.8%	-47.5%	33.3%	34.1%	33.1%	27.5%	34.1%	40.5%
Native American	-8.9%	-7.9%	-11.1%	-18.0%	-10.3%	19.5%	34.1%	35.3%	33.9%	26.6%	35.1%	56.9%
Hispanic	-15.4%	-12.4%	-8.2%	-7.9%	-13.4%	-8.7%	32.5%	33.3%	31.4%	25.6%	33.3%	53.6%
Other Race	-8.6%	-7.9%	-2.4%	-3.5%	-7.7%	-21.9%	33.5%	33.9%	32.6%	26.4%	34.4%	46.0%
Income 1	-14.0%	-12.4%	-10.4%	-9.4%	-12.8%	-12.1%	31.6%	31.9%	29.9%	25.1%	32.3%	53.7%
Income 2	-11.6%	-10.3%	-7.8%	-7.7%	-10.5%	-13.0%	32.6%	33.1%	31.5%	26.0%	33.4%	52.7%
Income 3	-10.0%	-9.0%	-5.9%	-6.4%	-8.9%	-15.9%	33.3%	33.9%	32.8%	26.3%	34.0%	50.8%
Income 4	-8.4%	-8.0%	-4.1%	-4.6%	-7.4%	-20.6%	33.8%	34.6%	33.9%	26.9%	34.6%	46.7%
Income 5	-7.8%	-7.8%	-1.7%	-0.9%	-7.0%	-25.6%	33.7%	34.3%	34.0%	26.9%	34.3%	37.1%
Average	**-11.7%**	**-10.3%**	**-7.1%**	**-6.5%**	**-10.6%**	**-19.2%**	**32.9%**	**33.3%**	**32.1%**	**26.2%**	**33.6%**	**49.0%**

Comparison of Weighted Average Shopping Accessibility by Auto within 30 Minutes (Difference in the Percent of Accessible Shopping Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DGA	CoC	Urban	Rural	SCAG	EJA	DGA	CoC	Urban	Rural
Seniors	-10.3%	-9.9%	-9.5%	-8.3%	-9.6%	-16.7%	22.4%	22.1%	20.3%	16.7%	23.0%	31.6%
Disabled	-11.6%	-10.4%	-8.4%	-8.1%	-10.6%	-11.4%	22.1%	21.7%	20.0%	16.8%	22.7%	32.9%
Poverty 1	-13.8%	-11.8%	-9.7%	-8.4%	-12.6%	-18.4%	21.3%	20.6%	17.9%	14.7%	22.0%	34.8%
White	-7.8%	-6.3%	-5.8%	1.1%	-7.5%	-18.2%	24.3%	24.1%	23.6%	18.2%	24.7%	28.5%
African American	-21.1%	-18.9%	-14.4%	-10.5%	-19.2%	-33.4%	20.2%	19.7%	17.2%	13.2%	20.9%	39.0%
Asian	-13.1%	-11.9%	-7.3%	-5.1%	-11.9%	-53.1%	22.7%	22.2%	19.6%	17.3%	23.3%	29.6%
Native American	-11.6%	-11.3%	-14.3%	-19.5%	-13.0%	19.6%	23.7%	24.1%	22.1%	17.2%	24.6%	35.4%
Hispanic	-17.8%	-14.9%	-10.1%	-9.1%	-15.9%	-12.0%	22.3%	22.2%	19.8%	16.3%	23.1%	33.3%
Other Race	-10.1%	-9.6%	-6.0%	-4.9%	-9.2%	-26.2%	23.6%	23.6%	21.4%	16.8%	24.4%	31.3%
Income 1	-14.0%	-12.3%	-10.3%	-9.0%	-12.8%	-15.4%	21.5%	21.0%	18.3%	14.9%	22.2%	35.2%
Income 2	-12.7%	-11.5%	-9.3%	-8.5%	-11.6%	-16.5%	22.4%	22.0%	19.7%	16.2%	23.1%	33.5%
Income 3	-11.6%	-11.1%	-8.6%	-8.1%	-10.6%	-19.7%	22.9%	22.7%	20.7%	16.8%	23.6%	32.2%
Income 4	-10.4%	-10.7%	-7.9%	-7.3%	-9.5%	-25.4%	23.5%	23.4%	21.7%	17.5%	24.1%	29.7%
Income 5	-9.0%	-9.8%	-6.5%	-4.4%	-8.2%	-30.5%	23.8%	23.7%	22.2%	17.8%	24.4%	25.6%
Average	**-12.7%**	**-11.6%**	**-9.2%**	**-8.0%**	**-11.8%**	**-23.9%**	**22.6%**	**22.3%**	**20.3%**	**16.4%**	**23.2%**	**32.0%**

TABLE 39 Comparison of Job and Shopping Accessibility By All Transit Within 45 Minute Ride

Comparison of Weighted Average Job Accessibility by All Transit within 45 Minutes (Difference in the Percent of Accessible Jobs Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DGA	CoC	Urban	Rural	SCAG	EJA	DGA	CoC	Urban	Rural
Seniors	-2.8%	-4.1%	-5.3%	-4.6%	-2.1%	1.0%	104.7%	102.6%	100.4%	89.0%	105.9%	171.7%
Disabled	-13.4%	-12.4%	-10.1%	-9.3%	-12.4%	-11.1%	102.1%	101.0%	98.9%	88.1%	103.2%	154.6%
Poverty 1	-19.1%	-17.5%	-16.4%	-13.3%	-17.9%	1.6%	97.6%	97.0%	93.2%	83.7%	98.8%	183.8%
NH-White	-1.0%	-1.0%	12.9%	40.9%	-0.4%	-36.2%	106.0%	104.6%	108.7%	93.3%	106.8%	145.8%
NH-Black	-31.5%	-28.7%	-27.3%	-18.9%	-29.7%	-30.2%	89.9%	89.7%	86.8%	77.4%	91.3%	191.1%
NH-Asian	-8.4%	-5.8%	-1.3%	5.6%	-7.2%	-15.6%	107.4%	105.3%	104.0%	94.2%	108.7%	144.0%
NH-Indian	-7.3%	-6.4%	-11.3%	-15.5%	-8.5%	-12.3%	111.4%	108.7%	106.4%	91.1%	113.2%	229.9%
Hispanic	-19.9%	-14.6%	-12.0%	-10.9%	-18.0%	-2.2%	104.5%	103.1%	99.7%	87.9%	106.0%	203.5%
NH-Other	-4.5%	-4.7%	0.8%	0.6%	-3.6%	-16.4%	103.2%	102.5%	102.1%	88.6%	104.7%	154.5%
Income 1	-19.5%	-18.2%	-17.3%	-14.4%	-18.4%	8.5%	98.2%	97.8%	94.3%	84.4%	99.4%	191.8%
Income 2	-14.1%	-13.3%	-11.7%	-10.5%	-13.0%	-11.8%	102.6%	101.4%	98.8%	87.2%	103.9%	190.7%
Income 3	-9.3%	-8.9%	-6.4%	-6.6%	-8.1%	-24.5%	106.3%	104.5%	103.0%	89.5%	107.6%	182.8%
Income 4	-3.7%	-4.0%	0.1%	-1.2%	-2.6%	-40.1%	109.1%	107.0%	107.2%	91.8%	110.4%	168.9%
Income 5	-0.9%	-1.7%	7.9%	8.4%	0.1%	-43.0%	108.1%	106.0%	108.0%	93.1%	109.2%	132.9%
Average	**-13.3%**	**-11.4%**	**-8.6%**	**-5.8%**	**-12.1%**	**-21.1%**	**102.9%**	**101.8%**	**100.4%**	**88.1%**	**104.2%**	**166.8%**

Comparison of Weighted Average Shopping Accessibility by All Transit within 45 Minutes (Difference in the Percent of Accessible Shopping Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DGA	CoC	Urban	Rural	SCAG	EJA	DGA	CoC	Urban	Rural
Seniors	0.6%	-0.9%	-1.9%	-0.6%	1.4%	-12.1%	107.8%	108.7%	113.3%	104.0%	109.2%	115.0%
Disabled	-11.8%	-10.5%	-8.2%	-6.4%	-10.7%	-22.4%	106.7%	107.7%	110.7%	103.6%	107.9%	111.7%
Poverty 1	-18.5%	-16.5%	-15.8%	-11.7%	-17.3%	-1.0%	103.7%	104.2%	106.6%	100.2%	105.1%	124.3%
White	0.4%	-0.5%	16.8%	51.3%	0.8%	-16.8%	102.1%	105.4%	121.9%	108.4%	103.0%	97.6%
African American	-30.2%	-27.1%	-27.0%	-17.1%	-28.4%	-37.7%	97.6%	97.9%	101.4%	93.1%	99.3%	108.2%
Asian	-6.2%	-3.6%	1.9%	9.6%	-4.9%	-17.0%	107.7%	107.3%	114.4%	108.0%	109.1%	124.4%
Native American	-4.3%	-2.9%	-9.3%	-12.2%	-5.6%	17.3%	111.0%	111.6%	117.7%	105.1%	113.1%	107.5%
Hispanic	-16.9%	-10.9%	-9.8%	-8.1%	-14.8%	-1.0%	111.5%	111.6%	113.3%	104.8%	113.2%	124.3%
Other Race	-2.1%	-2.4%	3.9%	5.1%	-1.1%	-10.3%	105.0%	106.5%	115.4%	104.0%	106.6%	112.7%
Income 1	-18.9%	-17.2%	-16.8%	-12.8%	-17.7%	1.2%	103.5%	104.5%	107.3%	100.6%	104.9%	125.7%
Income 2	-12.2%	-11.0%	-9.7%	-7.7%	-11.0%	-11.3%	107.2%	107.9%	112.1%	103.8%	108.6%	120.6%
Income 3	-6.3%	-5.6%	-3.0%	-2.5%	-5.1%	-17.1%	109.3%	110.3%	116.3%	105.6%	110.8%	114.4%
Income 4	0.3%	0.3%	5.2%	4.4%	1.4%	-27.8%	110.2%	111.6%	120.3%	107.5%	111.6%	108.9%
Income 5	2.7%	1.6%	14.2%	15.2%	3.7%	-33.3%	107.7%	109.2%	120.7%	108.2%	108.9%	98.5%
Average	**-11.3%**	**-9.1%**	**-6.3%**	**-2.4%**	**-10.1%**	**-18.1%**	**106.1%**	**107.1%**	**113.2%**	**103.7%**	**107.6%**	**112.9%**

TABLE 40 Comparison of Job and Shopping Accessibility By Local Bus Within 45 Minute Ride

Comparison of Weighted Average Job Accessibility by Local Bus within 45 Minutes (Difference in the Percent of Accessible Jobs Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DGA	CoC	Urban	Rural	SCAG	EJA	DGA	CoC	Urban	Rural
Seniors	-1.5%	-1.9%	-2.8%	-0.6%	-0.7%	-7.3%	88.1%	92.2%	91.5%	89.2%	89.2%	135.9%
Disabled	-14.6%	-13.5%	-11.4%	-10.3%	-13.6%	-19.1%	85.7%	89.3%	89.9%	87.0%	86.7%	122.5%
Poverty 1	-21.4%	-19.9%	-19.4%	-16.3%	-20.3%	-6.3%	87.7%	90.9%	89.2%	86.3%	88.9%	148.8%
White	-3.2%	-3.4%	12.2%	43.0%	-2.6%	-31.9%	83.6%	91.3%	94.6%	93.4%	84.3%	102.2%
African American	-30.3%	-27.5%	-27.3%	-18.1%	-28.4%	-41.7%	91.1%	95.0%	91.1%	94.3%	92.6%	151.8%
Asian	-11.2%	-8.9%	-6.3%	-2.3%	-10.1%	-32.4%	89.7%	93.1%	92.7%	93.3%	90.9%	119.4%
Native American	-8.4%	-6.9%	-12.1%	-14.3%	-9.6%	-4.9%	94.0%	98.8%	97.0%	93.0%	95.6%	182.0%
Hispanic	-20.4%	-15.1%	-13.4%	-13.8%	-18.4%	-9.0%	92.6%	95.4%	94.1%	87.5%	94.0%	166.7%
Other Race	-4.7%	-4.3%	2.4%	6.5%	-3.8%	-22.7%	89.2%	95.2%	94.8%	95.1%	90.6%	121.8%
Income 1	-21.7%	-20.5%	-20.4%	-17.4%	-20.6%	-0.4%	88.1%	91.7%	89.9%	88.1%	89.2%	156.4%
Income 2	-15.0%	-13.9%	-12.6%	-11.3%	-13.8%	-17.4%	89.4%	93.3%	92.6%	89.4%	90.6%	152.6%
Income 3	-9.2%	-8.3%	-5.2%	-4.9%	-8.0%	-27.5%	90.7%	95.0%	95.2%	90.3%	91.9%	143.1%
Income 4	-3.0%	-2.2%	3.6%	3.5%	-1.8%	-40.7%	91.4%	96.7%	98.1%	92.4%	92.6%	128.4%
Income 5	-0.8%	-0.4%	11.6%	14.1%	0.3%	-43.5%	89.2%	96.0%	98.0%	93.9%	90.3%	95.4%
Average	**-13.7%**	**-11.6%**	**-8.9%**	**-5.3%**	**-12.5%**	**-26.9%**	**89.3%**	**93.7%**	**93.3%**	**90.9%**	**90.5%**	**130.6%**

Comparison of Weighted Average Shopping Accessibility by Local Bus within 45 Minutes (Difference in the Percent of Accessible Shopping Destinations)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DGA	CoC	Urban	Rural	SCAG	EJA	DGA	CoC	Urban	Rural
Seniors	0.8%	0.4%	1.0%	4.0%	1.7%	-13.6%	66.7%	73.4%	76.0%	79.1%	67.9%	70.0%
Disabled	-12.4%	-10.8%	-7.6%	-5.0%	-11.3%	-23.1%	62.8%	67.5%	70.2%	72.3%	63.7%	80.6%
Poverty 1	-19.0%	-16.9%	-15.4%	-10.8%	-17.8%	-3.2%	68.7%	72.7%	74.4%	76.7%	69.9%	70.7%
White	-3.2%	-4.2%	12.1%	45.1%	-2.8%	-18.6%	59.8%	72.8%	82.9%	86.6%	60.4%	75.8%
African American	-29.5%	-26.5%	-25.7%	-17.5%	-27.6%	-39.2%	74.6%	79.4%	79.1%	93.1%	76.1%	68.1%
Asian	-9.7%	-7.2%	-1.9%	2.3%	-8.5%	-21.6%	69.3%	74.6%	78.9%	84.2%	70.4%	61.2%
Native American	-6.5%	-4.4%	-9.8%	-11.3%	-7.8%	17.8%	69.9%	77.2%	80.8%	82.0%	71.6%	71.7%
Hispanic	-16.3%	-10.3%	-8.7%	-7.6%	-14.2%	-3.4%	69.4%	73.1%	74.2%	72.4%	70.8%	68.4%
Other Race	-4.1%	-3.9%	3.9%	8.6%	-3.1%	-12.0%	68.8%	78.1%	84.0%	90.6%	70.2%	68.7%
Income 1	-19.5%	-17.8%	-16.8%	-12.4%	-18.4%	-1.2%	68.7%	73.5%	75.0%	78.4%	69.9%	71.8%
Income 2	-12.9%	-11.4%	-8.9%	-6.6%	-11.6%	-13.1%	68.0%	73.3%	75.8%	77.3%	69.2%	70.1%
Income 3	-7.0%	-5.7%	-1.2%	0.0%	-5.8%	-18.2%	67.2%	73.6%	77.1%	77.3%	68.4%	68.6%
Income 4	-1.0%	-0.1%	7.4%	7.8%	0.1%	-28.7%	66.9%	74.9%	79.8%	79.4%	68.0%	68.7%
Income 5	0.6%	0.2%	14.9%	17.6%	1.5%	-34.3%	65.5%	75.9%	82.2%	83.3%	66.4%	71.3%
Average	**-11.8%**	**-9.5%**	**-5.6%**	**-1.1%**	**-10.6%**	**-19.8%**	**67.8%**	**74.3%**	**77.9%**	**81.0%**	**69.0%**	**70.3%**

DISTANCE-BASED JOB AND SHOPPING ACCESSIBILITY

In addition to measuring accessibility in terms of available destinations within a certain travel time for driving and transit modes, additional analysis was conducted to examine accessibility within a one-mile and two-mile travel distance. This approach can be useful for determining the relative accessibility for short trips, such as those that are more likely to be completed using active transportation modes.

METHODOLOGY

Accessibility under this metric was measured by looking at each neighborhood's share of the region's total employment and shopping destinations within a one-mile and two-mile distance from each TAZ's centroid. Similar to the travel time-based analysis, the higher percentage of reachable desinations, the higher the relative accessibility is for a given area.

Impacts for various environmental justice population groups and areas of concern were determined using the following formula:

How to calculate job accessibility?

1. Calculate regional job sector share $\left(\dfrac{\text{retail within one mile}}{\text{regional retail}} \right)$

2. Calculate accessibility for a particular EJ variable
   a. Job Accessibility for Hispanic HH=

$$\sum \frac{\text{His HH of TAZ-regional job share (one mile) of TAZ}}{\text{Total His HH}}$$

RESULTS

Existing Conditions – Accessibility to Employment Destinations (One-Mile And Two-Miles)

This section describes the distance-based job accessibility throughout the region for the 2012 Base Year. Results show that all racial and ethnic minority groups - save Native Americans - have more employment opportunities within a one-mile distance than the White population. This is true at the regional level, as well as for each area of concern. Asians, African Americans and those identifying as "some other race" or "more than one race" have the highest accessibility to employment within a one-mile distance when looking at the greater SCAG region. This is also true in EJAs (**FIGURE 44**). African Americans continue to show good job accessibility in CoCs and DACs, and Hispanics also have relatively good figures for these areas as well. Jobs are also more accessible for seniors (age 65+) and for disabled people in the greater SCAG region, and more so in EJAs than in DACs and CoCs.

When looking at accessibility for households in poverty, as household incomes increase, job accessibility within a one-mile distance tends to be lower. **FIGURE 45** shows that households in poverty (Poverty 1) have better access to jobs than households that fall within 1.5 times the poverty rate (Poverty 2) or twice the poverty rate (Poverty 3).

FIGURE 46 examines the intersection of income and race, and lists the detailed breakdown of accessibility to jobs within a one-mile distance for households by income quintile at the regional level, as well as in areas of concern. Similar trends can also be seen when looking at job accessibility within two miles for the Base Year (**FIGURES 47 - 49**).

FIGURE 44 Existing Distanced-Based Job Accessibility (one-mile) of 2012 Base Year by Different Population Groups
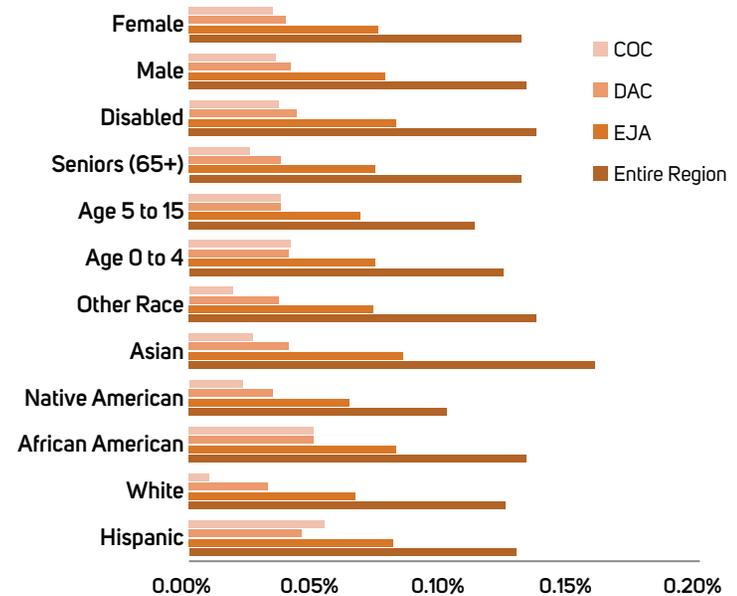
Source: SCAG

FIGURE 45 Existing Distanced-Based Job Accessibility (one-mile) of 2012 Base Year by Different Household Poverty Levels
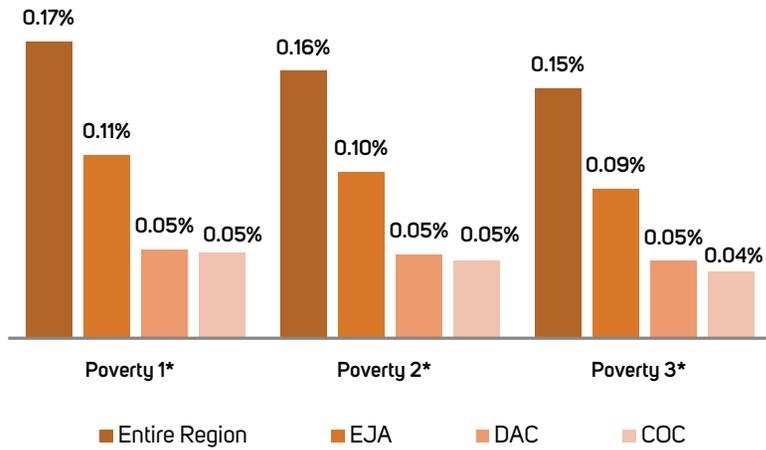
Source: SCAG

FIGURE 46 Existing Distanced-Based Job Accessibility (one-mile) of 2012 Base Year by Different Household Income Quintiles
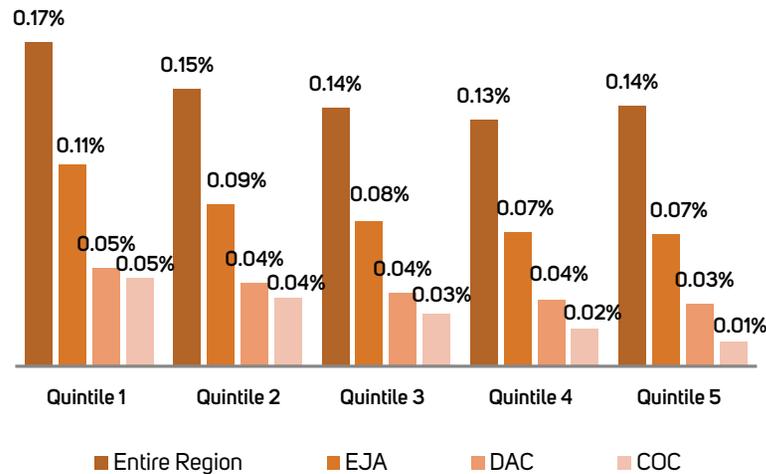
Source SCAG:

FIGURE 47 Existing Distanced-Based Job Accessibility (two-mile) of 2012 Base Year by Different Population Groups
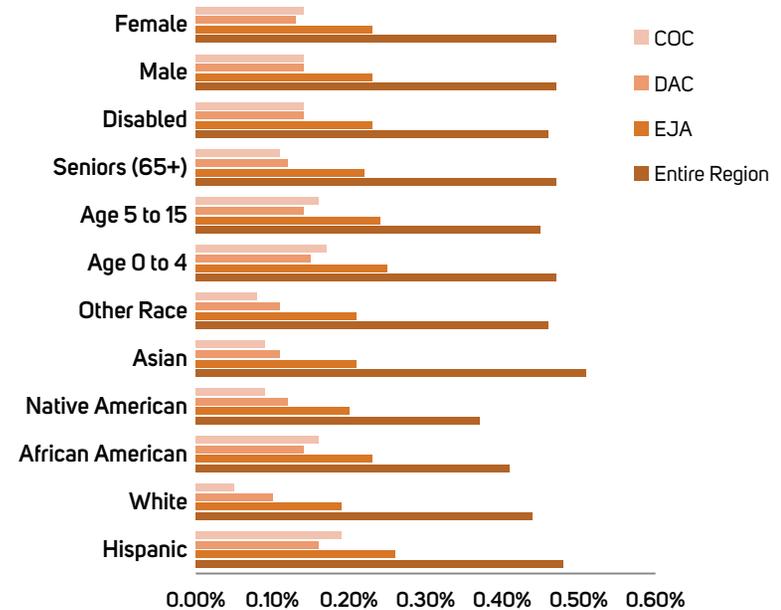
Source: SCAG

FIGURE 48 Existing Distanced-Based Job Accessibility (two-mile) of 2012 Base Year by Different Household Poverty Levels
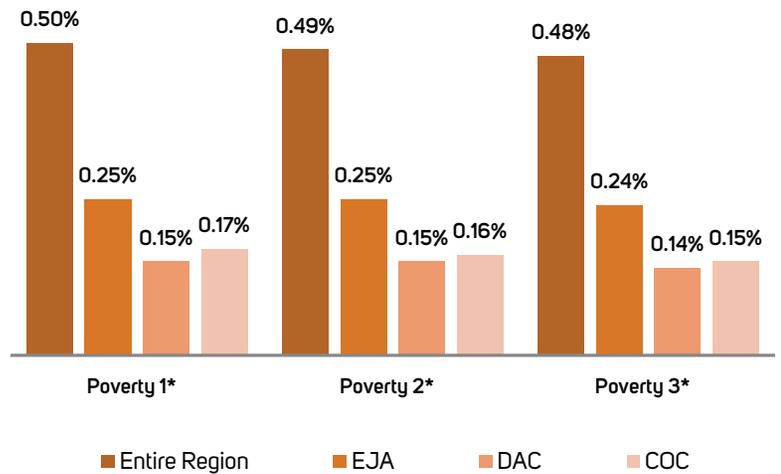
Source: SCAG

FIGURE 49 Existing Distanced-Based Job Accessibility (two-mile) of 2012 Base Year by Different Household Income Quintiles

Legend: Entire Region, EJA, DAC, COC

	Entire Region	EJA	DAC	COC
Quintile 1	0.49%	0.24%	0.14%	0.15%
Quintile 2	0.48%	0.24%	0.14%	0.14%
Quintile 3	0.47%	0.23%	0.13%	0.11%
Quintile 4	0.46%	0.22%	0.12%	0.09%
Quintile 5	0.48%	0.21%	0.11%	0.07%

Source: SCAG

Existing Conditions – Accessibility to Shopping Destinations (One Mile And Two Miles)

For accessibility to shopping destinations within one mile for 2012, most cohorts have similar accessibility to shopping destinations at both the regional level and within areas of concern. Akin to employment accessibility, households in poverty (Poverty 1) have relatively higher shopping accessibility than households within 1.5 times the poverty rate (Poverty 2), or those living at twice the poverty rate (Poverty 3) (**FIGURE 50**).Similar patterns are seen for shopping accessibility within two miles. **FIGURES 52 - 55** provide more detailed information. When looking at other groups, Native Americans show the lowest level of accessibility at the regional level and for all areas of concern - save CoCs, where Whites have the lowest accessibility. Asians and those identifing as "more than one race" or "some other race" have the highest shopping accessibility in the greater SCAG region (**FIGURE 51**). Within DACs and CoCs, African Americans and Hispanics both have the highest relative accessibility to shopping destinations.

Impacts of the Plan – Accessibility to Employment and Shopping Destinations within One Mile And Two Miles

When looking at the impacts of the Plan on employment and shopping accessibility, improvements will largely be seen across all cohorts and geographies, except for Rural Areas, where accessibility within one mile will decrease as a result of the Plan. This is largely due to the fact that employment and population are concentrated in areas well served by transit in the 2016 RTP/SCS, which may result in a decrease in destinations within one mile for rural residents. Positive results are seen for rural areas, however, when looking at accessibility within two miles. For the region's other areas of concern, residents who live within CoCs and DACs will have higher accessibility within one mile and two miles as a result of the Plan (**TABLES 41 - 44**). **FIGURES 56 - 59** show detailed impacts for job and shopping accessibility both within one and two miles throughout the SCAG region.

FIGURE 50 Existing Distanced-Based Shopping Accessibility (one-mile) of 2012 Base Year by Different Household Poverty Levels
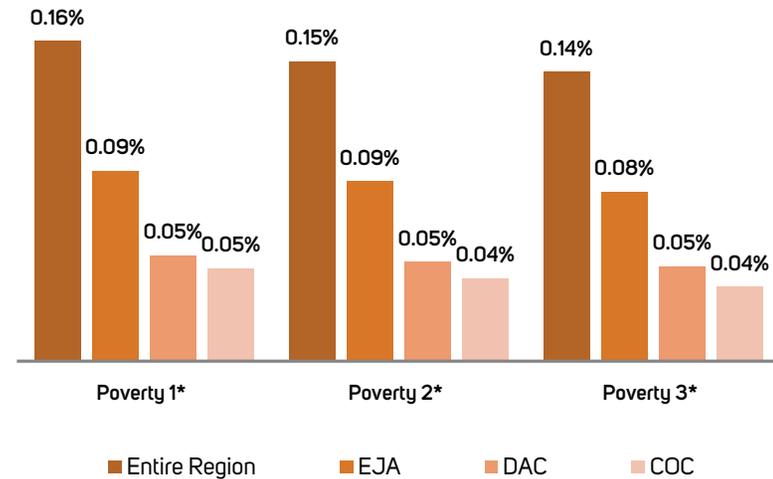
Source SCAG:

FIGURE 51 Existing Distanced-Based Shopping Accessibility (one-mile) of 2012 Base Year by Different Population Groups
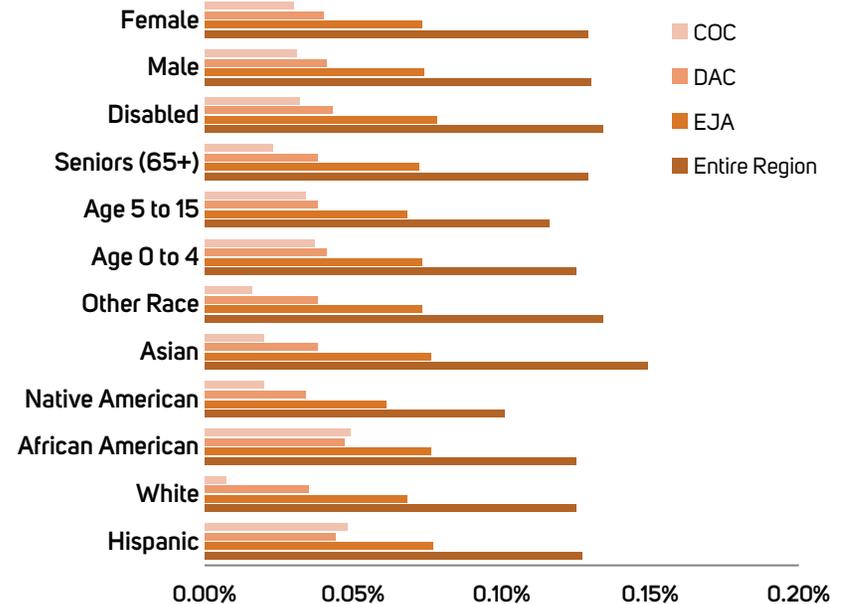
Source: SCAG

FIGURE 52 Existing Distanced-Based Shopping Accessibility (one-mile) of 2012 Base Year by Different Household Income Quintiles

Source:SCAG

FIGURE 54 Existing Distanced-Based Shopping Accessibility (two-mile) of 2012 Base Year by Different Household Poverty Levels
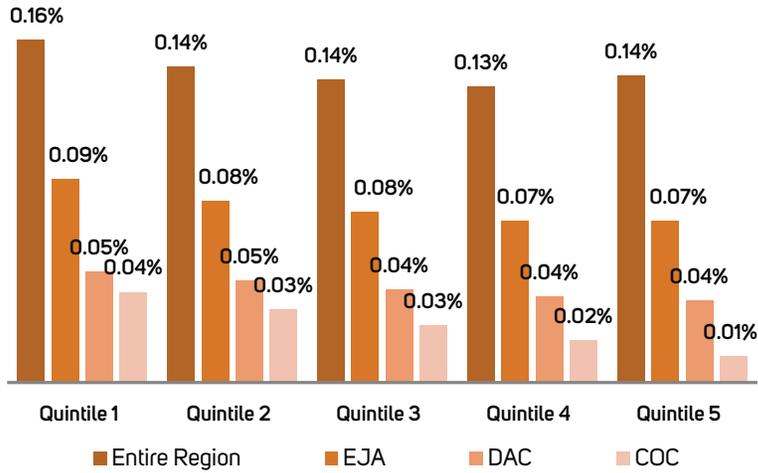
Source:SCAG

FIGURE 53 Existing Distanced-Based Shopping Accessibility (two-mile) of 2012 Base Year by Different Population Groups
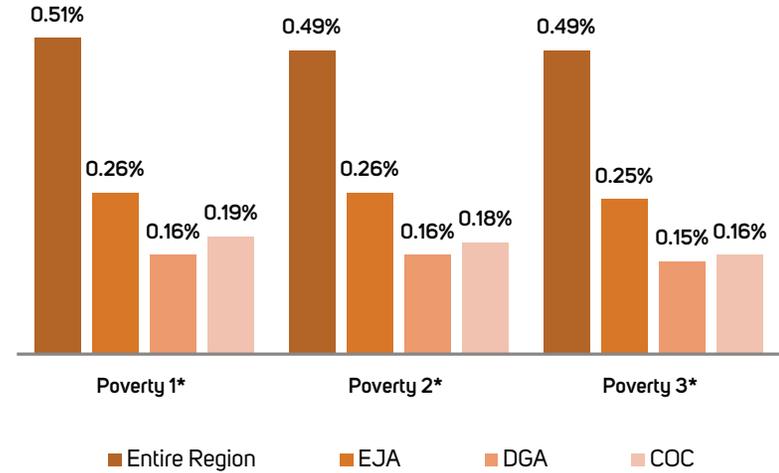
Source:SCAG

FIGURE 55 Existing Distanced-Based Shopping Accessibility (two-mile) of 2012 Base Year by Different Household Income Quintiles
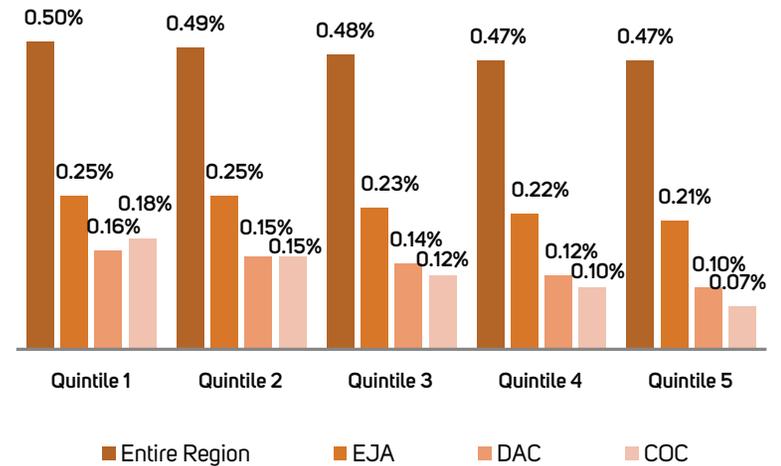
Source:SCAG

TABLE 41 Average Weighted Job Accessibility within One and Two Mile

Weighted Average Job Accessibility within One Mile Distance (Measured as the Percent of Regional Employment Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Disabled	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Poverty 1	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
White	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
African American	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Asian	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Native American	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Hispanic	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Other Race	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 1	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Quintile 2	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 3	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 4	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 5	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Average	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%

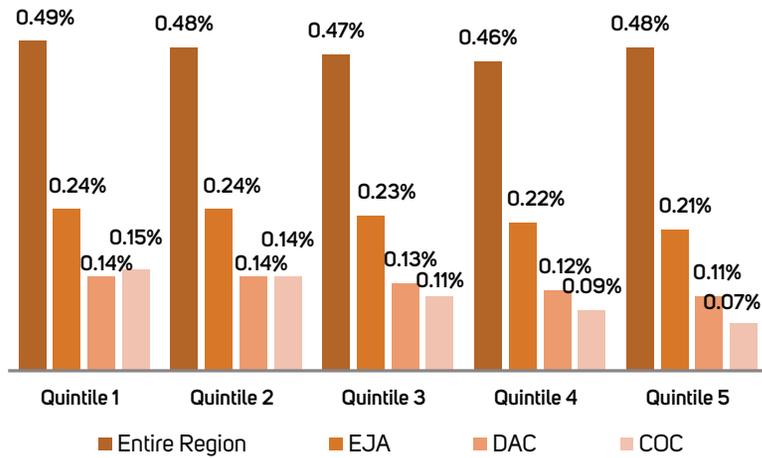| Weighted Average Job Accessibility within Two Mile Distance (Measured as the Percent of Regional Employment Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Elderly	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Disabled	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Poverty 1	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.1%	0.1%
White	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.5%	0.5%	0.1%	0.1%	0.1%
African American	0.5%	0.4%	0.4%	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.1%	0.0%	0.0%
Asian	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Native American	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.6%	0.5%	0.5%	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%	0.0%	0.0%	0.0%
Hispanic	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%	0.7%	0.7%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%
Other Race	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Quintile 1	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.0%	0.1%
Quintile 2	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%
Quintile 3	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Quintile 4	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Quintile 5	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Average	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%

TABLE 42 Average Weighted Shopping Accessibility within One and Two Mile

| Weighted Average Shopping Accessibility within One Mile Distance (Measured as the Percent of Shopping Destinations Accessible for Each Cohort) | | | | | | | | | | | | | | | | | |
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Disabled	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Poverty 1	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
White	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
African American	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Asian	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
Native American	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Hispanic	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Other Race	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Quintile 1	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 2	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 3	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Quintile 4	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Quintile 5	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Average	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%

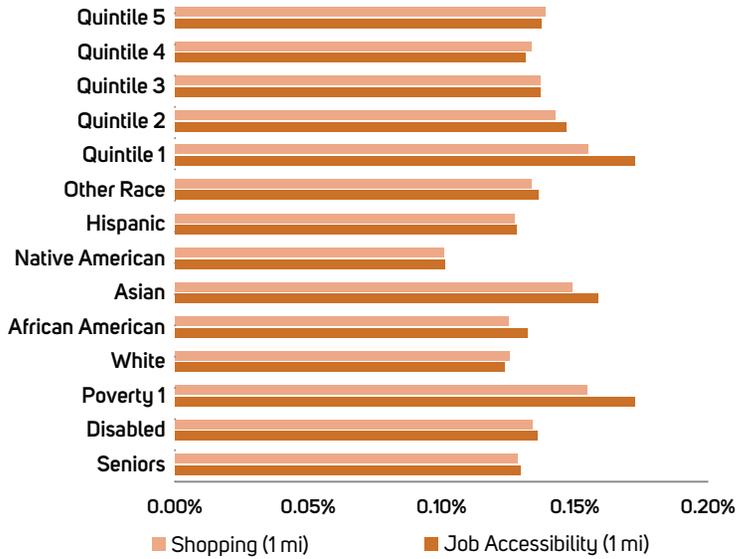| Weighted Average Shopping Accessibility within Two Mile Distance (Measured as the Percent of Shopping Destinations Accessible for Each Cohort) | | | | | | | | | | | | | | | | | |
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%
Disabled	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%
Poverty 1	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.0%	0.1%
White	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.1%	0.1%	0.1%
African American	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.4%	0.4%	0.1%	0.0%	0.0%
Asian	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Native American	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.4%	0.4%	0.4%	0.0%	0.0%	0.0%
Hispanic	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.0%	0.0%
Other Race	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Quintile 1	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.0%	0.1%
Quintile 2	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.0%	0.0%	0.1%
Quintile 3	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%
Quintile 4	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Quintile 5	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.1%	0.1%
Average	0.5%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%	0.1%	0.0%	0.1%

FIGURE 56 Job and Shopping Accessibility within One Mile (2012)

■ Shopping (1 mi)   ■ Job Accessibility (1 mi)

Source: SCAG

FIGURE 57 Job and Shopping Accessibility within Two Mile (2012)

■ Shopping (2 mi)   ■ Job Accessibility (2 mi)

Source: SCAG

FIGURE 58 2016-2040 RTP/SCS Impacts on Job and Shopping Accessibility within One Mile

■ Shopping (1 mi)   ■ Job Accessibility (1 mi)
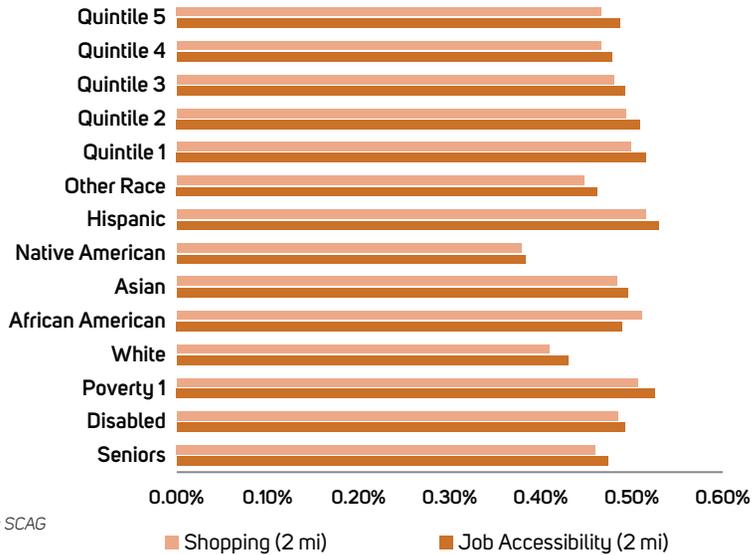
Source: SCAG

FIGURE 59 2016-2040 RTP/SCS Impacts on Job and Shopping Accessibility within Two Mile

■ Shopping (2 mi)   ■ Job Accessibility (2 mi)
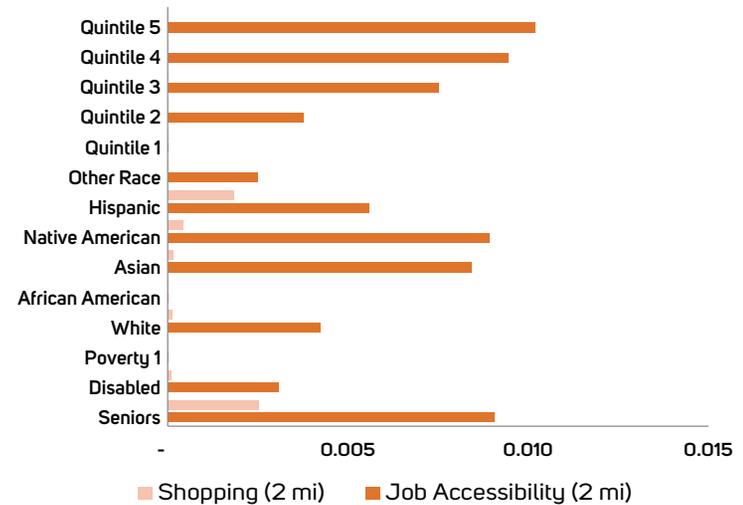
Source: SCAG

TABLE 43 Comparison on Job and Shopping Accessibility within One Mile

Comparison of Weighted Average Job Accessibility within One Mile Distance (Difference in the Share of Accessible Employment Destinations for Each Cohort)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	(0.0)	0.0	(0.0)	0.0	0.0	(0.1)	0.1	0.1	0.2	0.1	0.1	(0.2)
Disabled	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	0.1	0.1	0.1	0.0	0.1	(0.2)
Poverty 1	(0.2)	(0.1)	(0.2)	(0.1)	(0.1)	(0.1)	0.1	0.2	0.2	0.0	0.1	(0.2)
White	0.0	(0.0)	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	(0.1)
African American	(0.2)	(0.2)	(0.2)	(0.1)	(0.2)	(0.5)	0.1	0.1	0.1	0.0	0.1	(0.3)
Asian	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.5)	0.1	0.1	0.2	0.1	0.1	(0.2)
Native American	(0.0)	(0.0)	(0.1)	(0.1)	(0.1)	(0.1)	0.1	0.1	0.1	0.0	0.1	(0.1)
Hispanic	(0.1)	(0.0)	(0.0)	(0.1)	(0.0)	(0.2)	0.1	0.1	0.1	0.0	0.1	(0.2)
Other Race	(0.0)	(0.0)	0.0	0.1	(0.0)	(0.2)	0.1	0.1	0.2	0.1	0.1	(0.2)
Quintile 1	(0.2)	(0.2)	(0.2)	(0.1)	(0.1)	(0.1)	0.1	0.2	0.2	0.1	0.2	(0.2)
Quintile 2	(0.1)	(0.1)	(0.0)	(0.1)	(0.1)	(0.1)	0.1	0.2	0.2	0.1	0.1	(0.2)
Quintile 3	(0.0)	(0.0)	0.0	0.0	(0.0)	(0.1)	0.1	0.2	0.2	0.1	0.1	(0.2)
Quintile 4	0.0	0.0	0.1	0.1	0.0	(0.2)	0.1	0.2	0.2	0.1	0.1	(0.2)
Quintile 5	(0.0)	(0.0)	0.1	0.1	0.0	(0.2)	0.1	0.2	0.2	0.1	0.1	(0.2)
Average	(0.1)	(0.1)	(0.1)	(0.0)	(0.1)	(0.2)	0.1	0.1	0.2	0.1	0.1	(0.2)

Source: SCAG

TABLE 44 Comparison on Job and Shopping Accessibility within Two Mile

Comparison of Weighted Average Shopping Accessibility within Two Mile Distance (Difference in the Share of Accessible Shopping Destinations for Each Cohort)												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.1)	0.0	0.0	0.0	0.0	0.0	0.3
Disabled	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.2
Poverty 1	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.0	0.0	(0.0)	0.0	0.0	0.0	0.4
White	0.0	0.0	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.0	0.0	0.1
African American	(0.2)	(0.2)	(0.1)	(0.1)	(0.2)	(0.5)	0.0	0.0	0.0	0.0	0.0	0.1
Asian	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3
Native American	(0.0)	(0.0)	(0.1)	(0.2)	(0.1)	(0.1)	0.0	0.0	0.0	0.0	0.0	0.1
Hispanic	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.3
Other Race	(0.0)	(0.0)	(0.0)	0.0	(0.0)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.2
Quintile 1	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	0.1	0.0	0.0	0.0	0.0	0.0	0.4
Quintile 2	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	0.0	0.0	0.0	0.0	0.0	0.3
Quintile 3	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.3
Quintile 4	(0.0)	(0.1)	(0.1)	(0.1)	(0.0)	(0.3)	0.0	0.0	0.0	0.0	0.0	0.2
Quintile 5	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.3)	0.0	0.0	0.0	0.0	0.0	0.1
Average	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.2

Source: SCAG

ACCESSIBILITY TO PARKS

Local parks and other natural lands are important amenities for residents' quality of life. Residents who live near parks have easier access to recreation and other outdoor activities (i.e. walking, biking, hiking, etc.). The SCAG region is diverse in its open space resources, and offers a wide variety of public parks as well as national parks, state parks and numerous county parks. Not all parks are created equal, however, and many neighborhoods do not have access to a variety of public resources (**EXHIBIT 14** and **EXHIBIT 15**). For instance, some neighborhoods have more natural lands, some parks are better maintained, some are built so that those with disabilities can enjoy them, and some parks are safer. SCAG conducted additional analysis on accessibility to parks for the 2016 RTP/SCS to gauge how the Plan improves residents' ability to reach parks within a given travel time and within short distances.

METHODOLOGY

Two types of parks were considered for this analysis: 1) local parks and 2) state and national parks. To begin, the acreage of parks was identified for each TAZ using available land use data from SCAG's Existing Land Use Dataset and the California Protected Areas Database (CPAD). Similar to the method for measuring job accessibility, the underlying assumption in this exercise is that the more acreage of parks that can be reached within a certain travel time and cost, the greater the park accessibility is within a community. Park accessibility is therefore defined as the percentage of regional park acreage reachable within three (3) transportation options: 30 minutes by auto, 45 minutes by local bus and 45 minutes for all transit modes. SCAG's existing typical weekday travel assumptions were used for the analysis, as there is currently no weekend transportation model for the region. Park accessibility is further calculated for each area of concern, including the greater SCAG region, EJAs, DACs, CoCs and Urban/Rural Areas by using Geographic Information System (GIS) and Statistical Analysis Software (SAS).

RESULTS

TABLES 45 and **46** show that the overall accessibility to parks and natural lands will improve as a result of the Plan, both for the region as a whole and also for our areas of concern. Rural Areas have the lowest improvement compared with the other geographies, but still show improvement. **TABLES 47 - 49** show the rate of improvement between the Base Year (BY), Baseline (BL) and Plan (PL) for each cohort and across geographies.

When looking at various travel modes, results show that local parks and other natural lands are less accessible by public transportation than by automobile. When considering just natural lands, there is very limited access to national and state parks via transit modes. This observation is consistent with the conclusions of the 2012 RTP/SCS Environmental Justice Appendix that there is a near complete lack of public transportation services into, in particular, the National Forests. To further analyze the opportunity for residents to access natural lands via transit modes, SCAG staff performed an analysis to investigate the accessibility to the San Gabriel Valley National Monument via public transportation. With the implementation of the Plan, fortunately, accessibility to local parks and other natural lands will increase more for public transit modes than for automobiles at all levels of analysis.

FIGURES 60 - 65 detail the improvements to park accessiblity resulting from the 2016 RTP/SCS, and show that disabled people and households in poverty will have some of the highest improvements in terms of park accessibility. When looking at race/ethnicity, African Americans, Native Americans, and Hispanics generally have slightly higher improvements in local park accessibility when comparing the impacts of the Plan (PL) to the Baseline (BL). Asians, Native Americans and those identifying as "Other Race" generally have the next highest level of improvements.

EXHIBIT 14 Minority Distribution Overlay with Natural Lands
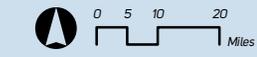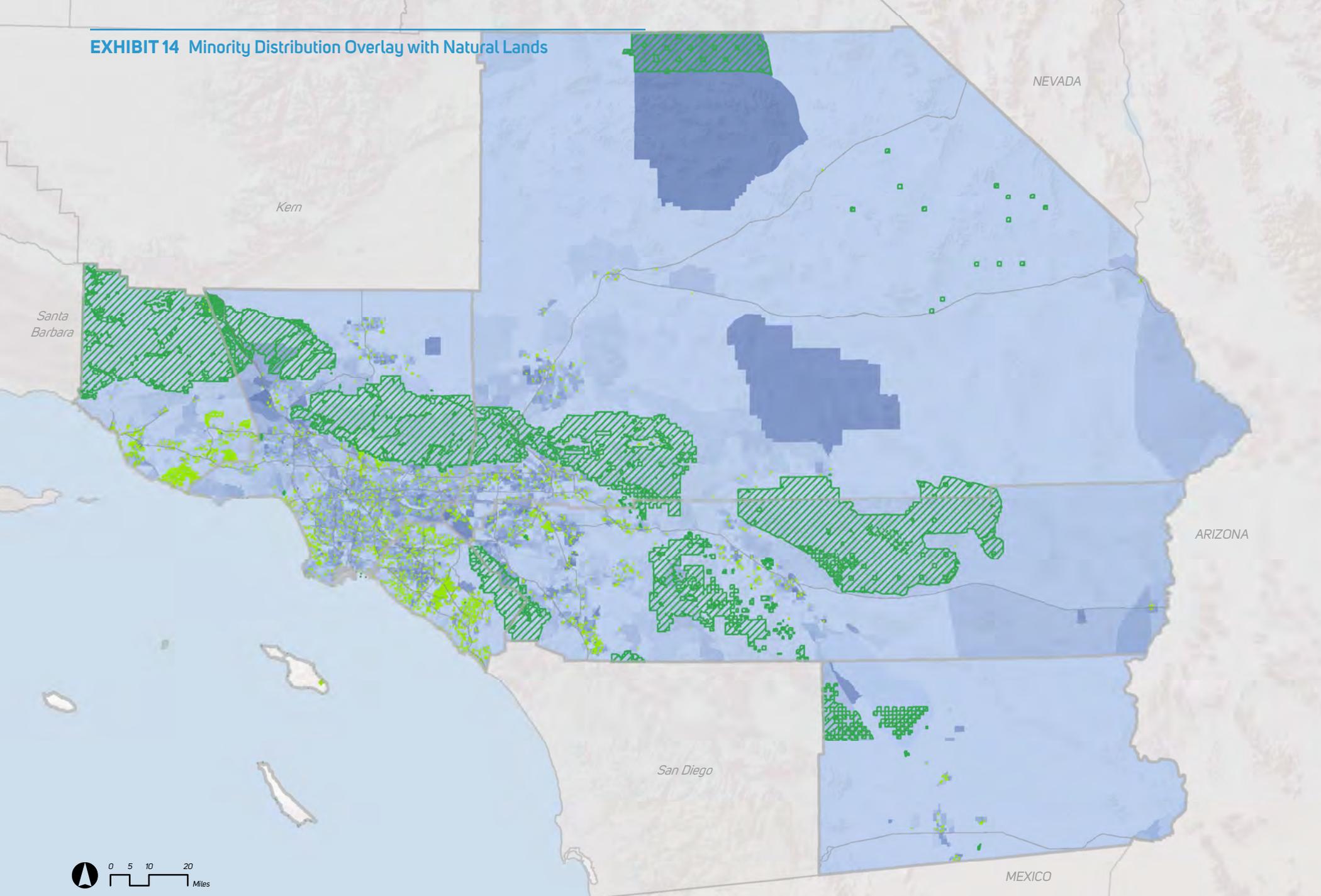
Legend:

County Boundaries

Freeway

State & Federal Natural Lands

Local Parks

Concentration of Minority Population (2012)

(Source: SCAG Existing Land Use, 2012 and California Protected Area Database, 2014)

EXHIBIT 15 Low Income Household Distribution Overlay with Natural Lands
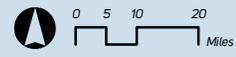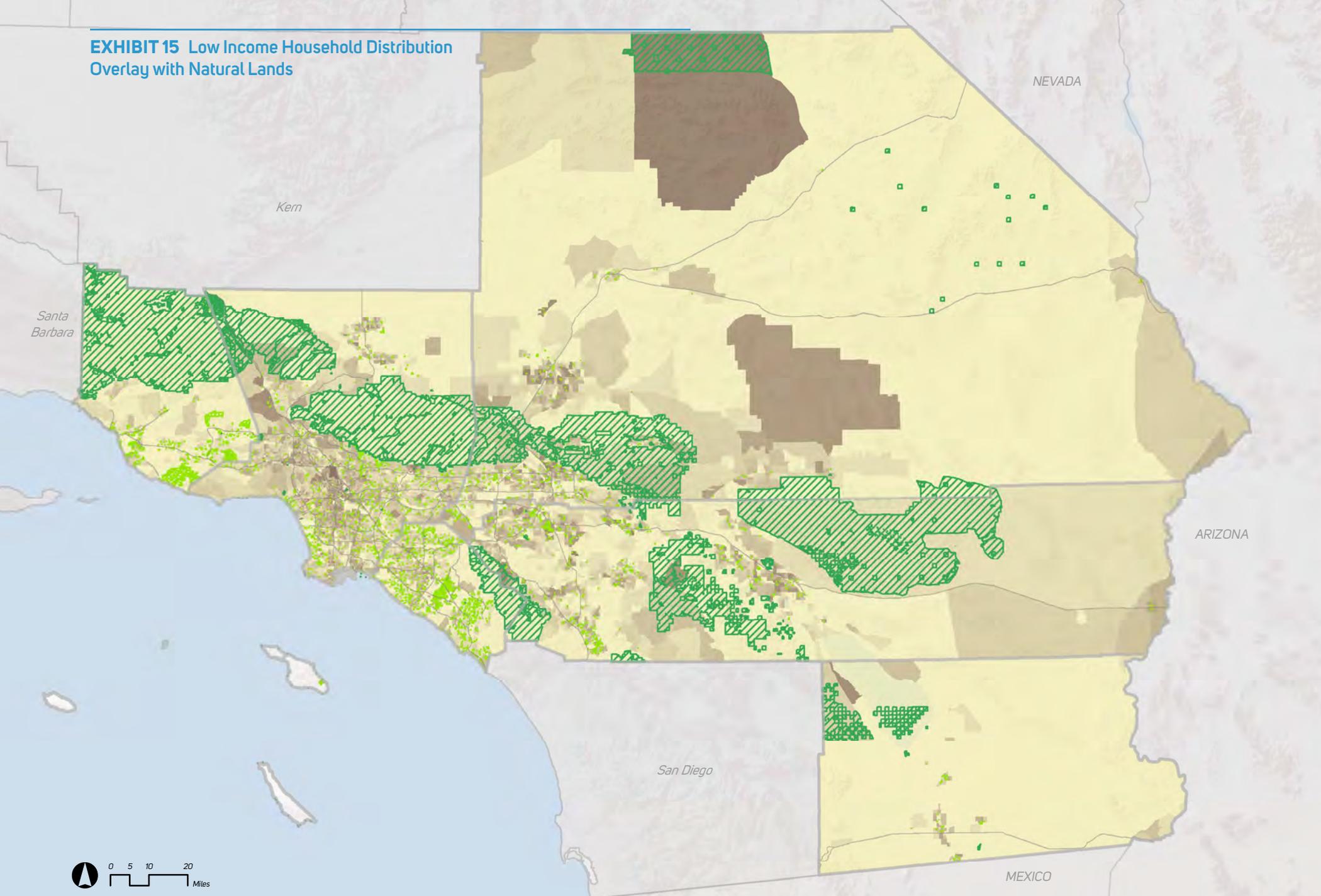
NEVADA

Kern

Santa Barbara

ARIZONA

San Diego

MEXICO

0 5 10 20 Miles

☐ County Boundaries

∿ Freeway

▨ State & Federal Natural Lands

▨ Local Parks

Concentration of Low Income Households (2012)

(Source: SCAG Existing Land Use 2012, and California Protected Area Database, 2014)

TABLE 45 Local Park Accessibility by Transportation Options and Environmental Justice Variables

Weighted Average Local Park Accessibility by Auto within 30 Minutes (Measured as a Share of the Region's Local Park Acreage Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	8.0%	7.2%	8.6%	6.9%	6.3%	7.9%	7.7%	7.1%	9.0%	7.3%	6.8%	8.3%	8.2%	7.4%	8.9%	4.6%	3.5%	4.1%
Disabled	7.9%	7.0%	8.5%	7.1%	6.4%	7.9%	7.8%	7.1%	8.9%	7.4%	6.9%	8.4%	8.0%	7.2%	8.7%	4.4%	3.0%	3.5%
Poverty 1	7.2%	6.4%	7.9%	6.7%	6.1%	7.6%	7.4%	7.0%	8.8%	7.1%	6.8%	8.4%	7.3%	6.6%	8.2%	3.2%	2.4%	2.8%
White	8.0%	7.3%	8.7%	5.9%	5.5%	6.8%	7.7%	6.8%	8.6%	7.5%	6.5%	7.8%	8.2%	7.5%	8.9%	5.4%	4.3%	4.8%
African American	6.5%	5.6%	7.0%	6.3%	5.5%	7.0%	6.8%	6.5%	8.2%	6.2%	6.3%	7.8%	6.6%	5.7%	7.3%	3.8%	1.9%	2.2%
Asian	8.7%	7.5%	9.1%	8.1%	7.0%	8.6%	8.4%	7.6%	9.5%	8.2%	7.3%	8.9%	8.7%	7.6%	9.3%	8.3%	3.7%	4.0%
Native American	6.9%	6.0%	7.3%	6.0%	5.1%	6.3%	7.7%	6.5%	8.3%	7.3%	5.8%	7.1%	7.6%	6.5%	7.9%	1.6%	1.7%	2.1%
Hispanic	7.9%	6.9%	8.4%	7.7%	6.5%	8.1%	7.8%	7.1%	9.0%	7.4%	6.8%	8.4%	8.1%	7.1%	8.7%	3.6%	2.7%	3.3%
Other Race	7.7%	6.8%	8.2%	6.5%	5.8%	7.2%	7.4%	6.8%	8.6%	7.0%	6.6%	8.0%	7.8%	7.0%	8.4%	5.1%	3.4%	3.8%
Quintile 1	7.1%	6.4%	7.8%	6.7%	6.0%	7.5%	7.4%	6.9%	8.7%	7.0%	6.7%	8.2%	7.3%	6.6%	8.1%	3.1%	2.3%	2.8%
Quintile 2	7.6%	6.7%	8.2%	7.0%	6.2%	7.8%	7.7%	7.1%	8.9%	7.3%	6.8%	8.3%	7.7%	6.9%	8.5%	3.6%	2.7%	3.2%
Quintile 3	7.9%	7.0%	8.4%	7.1%	6.3%	7.9%	7.8%	7.1%	9.0%	7.4%	6.8%	8.4%	8.0%	7.2%	8.7%	4.2%	3.0%	3.5%
Quintile 4	8.3%	7.3%	8.8%	7.3%	6.4%	8.0%	8.0%	7.2%	9.1%	7.5%	6.8%	8.3%	8.4%	7.5%	9.1%	5.5%	3.7%	4.2%
Quintile 5	8.9%	7.9%	9.3%	7.3%	6.5%	8.0%	8.1%	7.2%	9.2%	7.5%	6.8%	8.3%	8.9%	8.0%	9.5%	8.4%	5.4%	5.8%
Average	7.8%	6.9%	8.3%	6.9%	6.1%	7.6%	7.7%	7.0%	8.8%	7.3%	6.7%	8.2%	7.9%	7.1%	8.6%	4.6%	3.1%	3.6%

Weighted Average Local Park Accessibility by All Transit within 45 Minutes (Measured as a Share of the Region's Local Park Acreage Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.2%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.5%	0.0%	0.0%	0.0%
Disabled	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.0%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Poverty 1	0.4%	0.3%	0.7%	0.4%	0.4%	0.8%	0.6%	0.5%	1.1%	0.6%	0.6%	1.2%	0.4%	0.3%	0.7%	0.0%	0.0%	0.0%
White	0.2%	0.2%	0.4%	0.2%	0.3%	0.6%	0.3%	0.4%	0.9%	0.3%	0.4%	0.9%	0.2%	0.2%	0.4%	0.0%	0.0%	0.0%
African American	0.5%	0.4%	0.7%	0.5%	0.4%	0.8%	0.6%	0.5%	1.0%	0.7%	0.7%	1.3%	0.5%	0.4%	0.8%	0.0%	0.0%	0.0%
Asian	0.3%	0.3%	0.6%	0.4%	0.4%	0.8%	0.5%	0.5%	1.1%	0.5%	0.5%	1.2%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Native American	0.2%	0.2%	0.4%	0.3%	0.2%	0.5%	0.4%	0.3%	0.8%	0.5%	0.4%	0.9%	0.2%	0.2%	0.5%	0.0%	0.0%	0.0%
Hispanic	0.3%	0.3%	0.6%	0.4%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Other Race	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	1.0%	0.5%	0.5%	1.2%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 1	0.4%	0.3%	0.7%	0.4%	0.4%	0.8%	0.5%	0.5%	1.1%	0.6%	0.6%	1.2%	0.4%	0.3%	0.7%	0.0%	0.0%	0.0%
Quintile 2	0.3%	0.3%	0.6%	0.4%	0.3%	0.7%	0.5%	0.4%	1.0%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 3	0.3%	0.3%	0.5%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.0%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%
Quintile 4	0.2%	0.2%	0.5%	0.3%	0.3%	0.6%	0.4%	0.4%	0.8%	0.4%	0.5%	1.0%	0.2%	0.3%	0.5%	0.0%	0.0%	0.0%
Quintile 5	0.2%	0.2%	0.5%	0.3%	0.3%	0.7%	0.3%	0.4%	0.9%	0.4%	0.5%	1.0%	0.2%	0.3%	0.5%	0.0%	0.0%	0.0%
Average	0.3%	0.3%	0.6%	0.3%	0.3%	0.7%	0.4%	0.4%	0.9%	0.5%	0.5%	1.1%	0.3%	0.3%	0.6%	0.0%	0.0%	0.0%

TABLE 45 Local Park Accessibility by Transportation Options and Environmental Justice Variables Continued

Weighted Average Local Park Accessibility by Local Bus within 45 Minutes (Measured as a Share of the Region's Local Park Acreage Accessible for Each Cohort)																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.3%	0.2%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Disabled	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.3%	0.2%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Poverty 1	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
White	0.1%	0.1%	0.2%	0.1%	0.2%	0.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.4%	0.1%	0.2%	0.2%	0.0%	0.0%	0.0%
African American	0.2%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.5%	0.3%	0.2%	0.3%	0.0%	0.0%	0.0%
Asian	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
Native American	0.1%	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%
Hispanic	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.3%	0.3%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
Other Race	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
Quintile 1	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
Quintile 2	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.3%	0.3%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%
Quintile 3	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Quintile 4	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Quintile 5	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.2%	0.2%	0.4%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
Average	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.3%	0.2%	0.4%	0.2%	0.2%	0.3%	0.0%	0.0%	0.0%

Source: SCAG

TABLE 46 Other Natural Lands Accessibility by Transportation Options and Environmental Justice Variables (Measured as a Share of the Region's Natural Lands Acreage Accessible for Each Cohort)

	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Weighted Average Other Natural Lands Accessibility by Auto within 30 Minutes																		
Seniors	1.6%	1.4%	1.7%	1.7%	1.6%	1.8%	1.0%	1.0%	1.1%	1.1%	1.3%	1.6%	1.5%	1.3%	1.5%	2.6%	3.5%	3.7%
Disabled	1.4%	1.4%	1.7%	1.5%	1.4%	1.7%	1.1%	1.0%	1.2%	1.3%	1.2%	1.5%	1.4%	1.3%	1.6%	2.1%	3.1%	3.5%
Poverty 1	1.4%	1.4%	1.6%	1.4%	1.3%	1.5%	0.8%	0.8%	1.0%	0.9%	0.9%	1.2%	1.4%	1.3%	1.5%	2.7%	3.2%	3.5%
White	1.5%	1.4%	1.6%	2.1%	1.9%	2.2%	1.3%	1.2%	1.4%	1.6%	1.8%	2.2%	1.5%	1.3%	1.5%	2.1%	3.0%	3.2%
African American	0.9%	1.4%	1.7%	0.8%	1.3%	1.6%	0.6%	0.8%	1.0%	0.4%	0.9%	1.1%	0.9%	1.3%	1.6%	1.6%	3.4%	3.6%
Asian	0.8%	1.0%	1.2%	0.7%	0.9%	1.1%	0.6%	0.7%	0.8%	0.9%	0.9%	1.1%	0.8%	0.9%	1.1%	1.8%	3.1%	3.1%
Native American	1.5%	1.6%	1.9%	1.7%	1.8%	2.1%	1.3%	1.1%	1.3%	1.5%	1.5%	1.9%	1.5%	1.5%	1.8%	1.9%	2.4%	2.7%
Hispanic	1.5%	1.5%	1.7%	1.5%	1.4%	1.7%	1.0%	0.9%	1.2%	1.2%	1.1%	1.4%	1.4%	1.4%	1.6%	3.5%	3.4%	3.7%
Other	1.2%	1.3%	1.5%	1.3%	1.4%	1.7%	1.0%	1.0%	1.2%	1.1%	1.3%	1.6%	1.2%	1.2%	1.5%	1.9%	3.0%	3.1%
Quintile 1	1.4%	1.4%	1.6%	1.4%	1.4%	1.6%	0.9%	0.8%	1.0%	0.9%	1.0%	1.2%	1.4%	1.3%	1.5%	2.8%	3.3%	3.6%
Quintile 2	1.5%	1.4%	1.7%	1.5%	1.4%	1.7%	1.0%	0.9%	1.1%	1.0%	1.1%	1.4%	1.4%	1.3%	1.5%	2.7%	3.4%	3.6%
Quintile 3	1.4%	1.4%	1.6%	1.5%	1.5%	1.7%	1.0%	0.9%	1.2%	1.1%	1.2%	1.5%	1.4%	1.3%	1.5%	2.5%	3.3%	3.5%
Quintile 4	1.3%	1.3%	1.6%	1.5%	1.5%	1.7%	1.1%	1.0%	1.2%	1.2%	1.3%	1.6%	1.3%	1.2%	1.5%	2.2%	3.1%	3.3%
Quintile 5	1.3%	1.2%	1.4%	1.5%	1.4%	1.7%	1.1%	1.0%	1.2%	1.2%	1.3%	1.6%	1.2%	1.1%	1.3%	2.1%	2.8%	3.0%
Average	1.3%	1.4%	1.6%	1.4%	1.5%	1.7%	1.0%	0.9%	1.1%	1.1%	1.2%	1.5%	1.3%	1.3%	1.5%	2.3%	3.1%	3.4%
Weighted Average Other Natural Lands Accessibility by All Transit within 45 Minutes																		
Seniors	0.0%	0.1%	0.3%	0.0%	0.1%	0.3%	0.0%	0.1%	0.4%	0.1%	0.1%	0.5%	0.0%	0.1%	0.3%	0.0%	0.1%	0.1%
Disabled	0.1%	0.1%	0.2%	0.1%	0.1%	0.3%	0.1%	0.1%	0.3%	0.1%	0.1%	0.4%	0.1%	0.1%	0.3%	0.0%	0.0%	0.1%
Poverty 1	0.0%	0.1%	0.3%	0.0%	0.0%	0.4%	0.0%	0.0%	0.4%	0.0%	0.1%	0.5%	0.0%	0.1%	0.3%	0.0%	0.1%	0.1%
White	0.0%	0.0%	0.2%	0.0%	0.0%	0.3%	0.0%	0.0%	0.4%	0.1%	0.1%	0.6%	0.0%	0.0%	0.2%	0.1%	0.0%	0.1%
African American	0.0%	0.0%	0.4%	0.0%	0.0%	0.5%	0.0%	0.0%	0.4%	0.0%	0.0%	0.8%	0.0%	0.0%	0.4%	0.1%	0.0%	0.1%
Asian	0.0%	0.1%	0.3%	0.0%	0.0%	0.4%	0.0%	0.0%	0.4%	0.1%	0.1%	0.6%	0.0%	0.1%	0.3%	0.2%	0.1%	0.2%
Native American	0.0%	0.1%	0.2%	0.1%	0.1%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.5%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%
Hispanic	0.1%	0.1%	0.3%	0.1%	0.1%	0.3%	0.1%	0.1%	0.3%	0.1%	0.1%	0.4%	0.1%	0.1%	0.3%	0.1%	0.0%	0.1%
Other	0.0%	0.1%	0.3%	0.0%	0.0%	0.4%	0.0%	0.0%	0.4%	0.1%	0.1%	0.7%	0.0%	0.1%	0.3%	0.1%	0.1%	0.1%
Quintile 1	0.0%	0.1%	0.3%	0.0%	0.0%	0.4%	0.0%	0.0%	0.4%	0.0%	0.1%	0.5%	0.0%	0.1%	0.3%	0.0%	0.1%	0.1%
Quintile 2	0.0%	0.1%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.4%	0.1%	0.1%	0.5%	0.0%	0.1%	0.3%	0.0%	0.0%	0.1%
Quintile 3	0.0%	0.1%	0.2%	0.1%	0.0%	0.3%	0.1%	0.0%	0.3%	0.1%	0.1%	0.5%	0.0%	0.1%	0.3%	0.1%	0.0%	0.1%
Quintile 4	0.1%	0.1%	0.2%	0.1%	0.0%	0.3%	0.1%	0.1%	0.3%	0.1%	0.1%	0.5%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
Quintile 5	0.0%	0.1%	0.2%	0.1%	0.1%	0.3%	0.1%	0.1%	0.4%	0.1%	0.1%	0.5%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%
Average	0.0%	0.1%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.4%	0.1%	0.1%	0.5%	0.0%	0.1%	0.3%	0.1%	0.1%	0.1%

TABLE 46 Other Natural Lands Accessibility by Transportation Options and Environmental Justice Variables (Measured as a Share of the Region's Natural Lands Acreage Accessible for Each Cohort) Continued

	Weighted Average Other Natural Lands Accessibility by Local Bus within 45 Minutes																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Disabled	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%
Poverty 1	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
White	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%
African American	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Asian	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.2%	0.1%	0.2%
Native American	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Hispanic	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
Other	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Quintile 1	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%
Quintile 2	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%
Quintile 3	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%
Quintile 4	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
Quintile 5	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Average	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%

Source: SCAG

FIGURE 60 Park Accessibility by Auto within 30 Minutes of Travel (2012)

Source: SCAG

FIGURE 61 Park Accessibility by All Transit within 45 Minutes of Travel (2012)
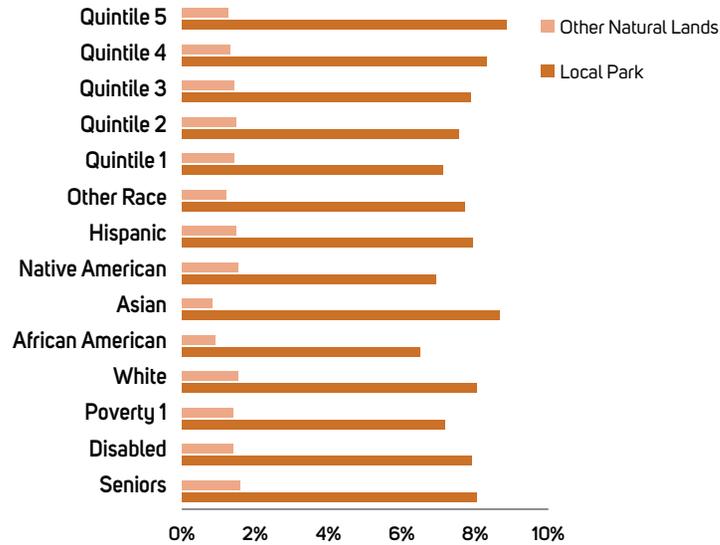
Source: SCAG

FIGURE 62 Park Accessibility by Local Bus within 45 Minutes of Travel (2012)
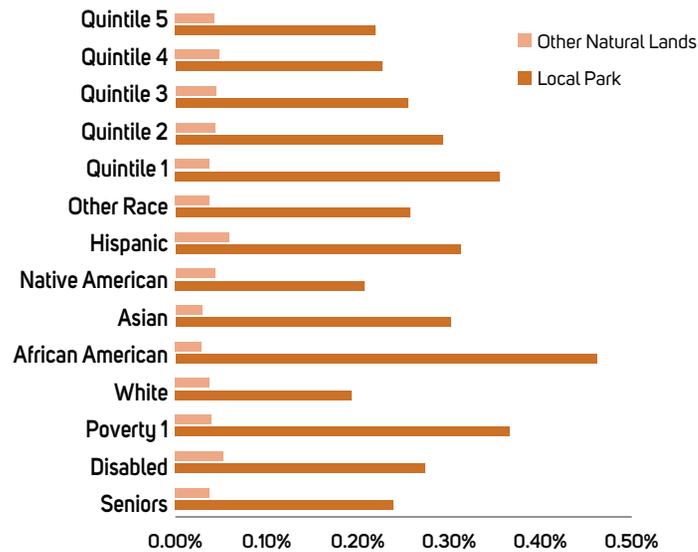
Source: SCAG

FIGURE 63 Improvements in Park Accessibility by Auto within 30 Minutes of Travel (2040)
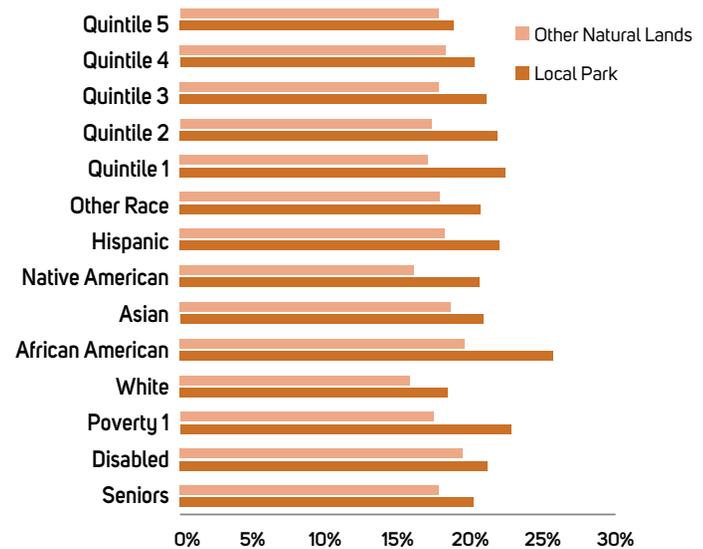
Source: SCAG

FIGURE 64 Improvements in Park Accessibility by All Transit within 45 Minutes of Travel (2040)

Legend: Other Natural Lands / Local Park
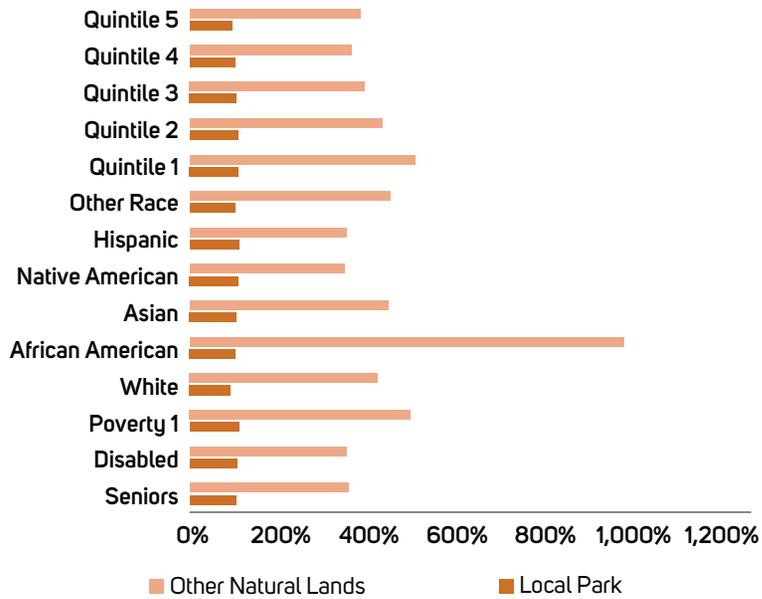
Source:SCAG

FIGURE 65 Improvements in Park Accessibility by Local Bus within 45 Minutes of Travel (2040)

Legend: Other Open Space / Local Park
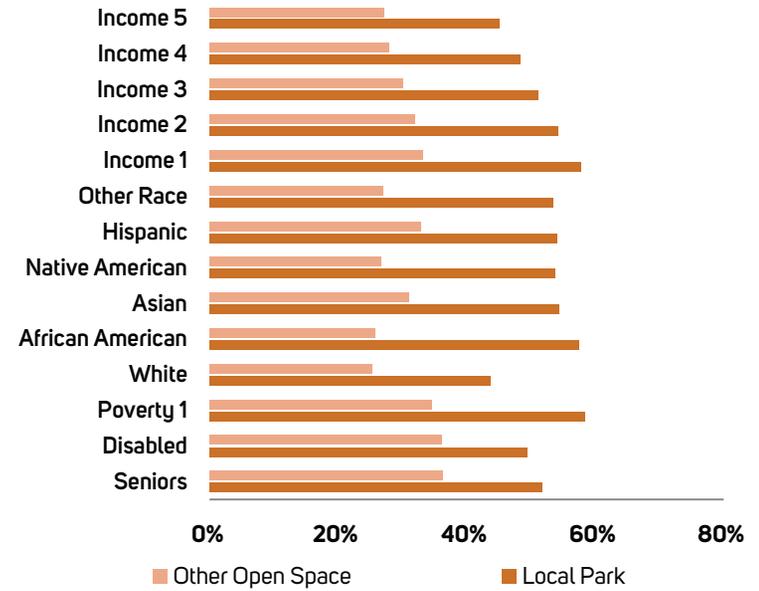
Source:SCAG

TABLE 47 Comparison of Local Park and Other Natural Lands Accessibility by Auto and Environmental Justice Variables

Comparison of Weighted Average Local Park Accessibility by Auto within 30 Minutes (Improvement in Share of Accessible Local Park Acreage)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	-10.7%	-8.5%	-7.8%	-7.2%	-10.0%	-24.4%	20.2%	24.1%	26.2%	22.3%	20.8%	16.5%
Disabled	-11.7%	-10.7%	-8.8%	-7.0%	-10.7%	-30.9%	21.2%	24.2%	25.6%	21.9%	21.8%	15.4%
Poverty 1	-10.6%	-9.4%	-6.2%	-4.7%	-9.5%	-26.1%	22.8%	24.9%	25.9%	23.3%	23.5%	17.0%
White	-8.9%	-7.0%	-11.2%	-13.3%	-8.3%	-19.8%	18.5%	23.8%	26.0%	20.9%	18.9%	11.8%
African American	-14.4%	-12.0%	-4.4%	1.2%	-12.5%	-50.1%	25.7%	26.8%	25.9%	23.1%	26.6%	17.3%
Asian	-13.1%	-13.8%	-8.9%	-11.6%	-12.0%	-54.8%	20.9%	23.7%	24.5%	21.5%	21.5%	7.0%
Native American	-12.9%	-14.8%	-15.2%	-20.2%	-14.4%	7.6%	20.6%	24.1%	26.4%	21.3%	21.5%	22.8%
Hispanic	-13.3%	-15.4%	-9.0%	-7.4%	-11.8%	-24.1%	22.0%	24.7%	26.6%	22.9%	22.6%	21.1%
Other Race	-12.1%	-11.3%	-8.3%	-6.7%	-11.2%	-32.5%	20.7%	25.1%	26.2%	22.0%	21.5%	10.2%
Quintile 1	-10.2%	-9.4%	-6.3%	-4.8%	-9.1%	-24.2%	22.4%	24.7%	25.7%	23.1%	23.1%	18.8%
Quintile 2	-11.3%	-10.9%	-7.9%	-6.4%	-10.3%	-26.6%	21.9%	24.6%	26.0%	22.7%	22.5%	18.1%
Quintile 3	-11.6%	-11.6%	-8.9%	-7.3%	-10.6%	-28.5%	21.1%	24.4%	26.2%	22.1%	21.8%	16.7%
Quintile 4	-11.8%	-12.4%	-10.0%	-8.5%	-10.8%	-32.1%	20.3%	24.4%	26.4%	21.9%	20.9%	13.8%
Quintile 5	-11.3%	-11.4%	-10.4%	-9.3%	-10.3%	-35.9%	18.9%	24.4%	26.3%	21.8%	19.5%	8.1%
Average	-11.7%	-11.4%	-8.9%	-8.2%	-10.8%	-32.3%	21.1%	24.5%	26.0%	22.2%	21.8%	14.2%

Comparison of Weighted Average Other Natural Lands Accessibility by Auto within 30 Minutes (Improvement in Share of Accessible Natural Land Acreage)											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Elderly	-10.9%	-10.7%	-1.9%	22.7%	-15.5%	36.3%	17.8%	17.1%	20.0%	22.3%	18.3%	6.5%
Disabled	-1.1%	-2.3%	-10.1%	-1.8%	-5.7%	49.3%	19.5%	19.5%	23.7%	23.7%	19.7%	11.2%
Poverty	-2.8%	-4.8%	-2.9%	3.3%	-6.7%	20.5%	17.5%	17.8%	25.0%	25.9%	17.8%	6.9%
White	-10.5%	-9.4%	-9.4%	9.9%	-14.9%	40.2%	15.8%	14.3%	18.1%	24.0%	16.3%	8.0%
African American	57.7%	64.3%	47.8%	117.7%	49.3%	117.8%	19.6%	20.3%	27.1%	22.9%	20.0%	5.3%
Asian	18.0%	25.3%	5.6%	-2.0%	13.0%	71.2%	18.6%	19.3%	24.1%	28.2%	18.8%	0.3%
Native American	6.6%	5.7%	-12.2%	2.3%	3.4%	30.7%	16.1%	16.3%	20.7%	24.5%	16.8%	9.3%
Hispanic	-1.6%	-3.2%	-11.2%	-4.7%	-5.0%	-3.9%	18.2%	18.9%	25.2%	25.3%	18.5%	7.8%
Other Race	8.9%	10.0%	-5.8%	13.3%	4.4%	56.3%	17.9%	18.0%	22.1%	23.8%	18.3%	5.4%
Quintile 1	-3.2%	-4.5%	-3.0%	4.7%	-7.2%	19.5%	17.1%	17.5%	24.2%	25.3%	17.4%	6.9%
Quintile 2	-3.5%	-4.3%	-6.7%	5.3%	-7.7%	25.4%	17.3%	17.7%	24.3%	25.1%	17.7%	6.7%
Quintile 3	-2.1%	-3.6%	-8.5%	5.3%	-6.2%	32.3%	17.8%	18.0%	24.2%	25.3%	18.1%	7.4%
Quintile 4	0.1%	0.2%	-8.7%	9.1%	-4.0%	41.9%	18.3%	18.2%	23.6%	25.2%	18.5%	7.7%
Quintile 5	-4.9%	-7.1%	-11.6%	3.8%	-8.5%	37.2%	17.8%	16.9%	20.8%	24.7%	18.2%	6.6%
Average	1.5%	0.5%	-5.2%	8.5%	-2.8%	36.2%	17.8%	17.7%	22.8%	24.6%	18.1%	6.8%

TABLE 48 Comparison of Local Park and Natural Lands Space Accessibility by All Transit and Environmental Justice Variables

Comparison of Weighted Average Local Park Accessibility by Local Bus within 45 Minutes (Improvement in Share of Accessible Local Park Acreage)												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	-1.5%	-3.1%	-2.5%	-2.7%	-0.7%	-15.7%	51.7%	65.3%	67.5%	66.0%	52.8%	39.3%
Disabled	-7.9%	-7.9%	-6.2%	-4.9%	-6.7%	-13.1%	49.4%	58.0%	59.2%	57.0%	50.3%	44.7%
Poverty	-13.3%	-11.8%	-11.2%	-8.2%	-12.0%	-9.5%	58.4%	65.9%	65.9%	63.2%	59.6%	43.2%
White	4.2%	6.4%	15.4%	30.2%	4.6%	-17.8%	43.8%	69.4%	79.9%	74.4%	44.4%	36.8%
African American	-23.8%	-21.0%	-18.4%	-10.4%	-21.8%	-29.9%	57.5%	63.2%	63.0%	68.6%	58.9%	45.1%
Asian	-8.3%	-6.5%	-3.7%	1.6%	-7.1%	-34.9%	54.3%	66.3%	70.1%	75.3%	55.3%	39.0%
Native American	-10.8%	-10.6%	-15.6%	-15.1%	-12.0%	21.0%	53.8%	69.5%	73.5%	65.7%	55.4%	38.4%
Hispanic	-14.1%	-10.4%	-6.2%	-6.7%	-11.9%	-9.8%	54.1%	61.8%	61.9%	56.5%	55.4%	41.5%
Other Race	-4.6%	-4.5%	1.5%	6.1%	-3.7%	-9.2%	53.5%	71.3%	76.1%	76.5%	54.8%	39.9%
Quintile 1	-13.2%	-12.3%	-11.8%	-9.4%	-12.0%	-7.9%	57.7%	66.3%	66.7%	64.6%	58.9%	43.4%
Quintile 2	-7.9%	-7.0%	-5.3%	-6.0%	-6.6%	-15.6%	54.2%	64.0%	65.1%	60.8%	55.3%	40.6%
Quintile 3	-5.3%	-4.8%	-2.0%	-3.1%	-4.1%	-16.5%	51.2%	63.1%	65.0%	60.4%	52.3%	39.3%
Quintile 4	-2.2%	-2.0%	2.2%	0.7%	-1.2%	-24.8%	48.4%	63.4%	66.6%	62.0%	49.5%	38.0%
Quintile 5	-0.1%	-0.2%	7.1%	7.9%	0.7%	-29.8%	45.1%	65.1%	69.3%	68.3%	46.0%	38.0%
Average	-8.8%	-7.6%	-5.2%	-2.8%	-7.6%	-19.2%	52.7%	65.1%	67.6%	65.6%	53.8%	40.3%

Comparison of Weighted Average Other Natural Lands Accessibility by All Transit within 45 Minutes (Improvement in Share of Accessible Natural Land Acreage)												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	47.0%	18.7%	19.1%	19.6%	46.6%	57.1%	351.1%	552.3%	583.2%	719.6%	368.7%	47.5%
Disabled	2.6%	-8.6%	-9.2%	-13.7%	2.3%	32.2%	347.6%	489.9%	499.2%	656.2%	361.3%	54.1%
Poverty 1	37.7%	9.5%	6.3%	0.9%	38.3%	26.5%	488.7%	802.1%	855.5%	992.2%	513.0%	51.6%
White	3.9%	14.3%	61.4%	22.5%	6.3%	-31.3%	416.4%	712.7%	884.4%	768.9%	435.6%	47.8%
African American	32.3%	16.5%	15.2%	37.8%	35.6%	-42.5%	961.7%	1641.9%	1706.9%	2972.1%	1015.2%	69.0%
Asian	85.2%	98.2%	130.9%	33.5%	89.1%	-23.5%	440.2%	872.7%	973.3%	890.6%	464.6%	34.9%
Native American	5.6%	-15.8%	-13.0%	-6.2%	3.5%	37.8%	342.3%	545.7%	689.3%	996.7%	359.7%	65.1%
Hispanic	-3.6%	-20.1%	-16.8%	-15.2%	-2.8%	-7.7%	346.5%	509.4%	532.4%	727.0%	361.0%	55.0%
Other Race	39.0%	35.5%	60.2%	28.3%	41.7%	-6.9%	444.1%	793.7%	922.5%	936.6%	468.3%	49.2%
Quintile 1	41.4%	11.3%	11.5%	10.1%	42.0%	31.8%	498.4%	833.7%	921.8%	1110.5%	523.7%	52.9%
Quintile 2	19.8%	-1.6%	-2.1%	-2.4%	20.6%	5.2%	425.6%	680.0%	732.6%	885.5%	445.5%	53.3%
Quintile 3	11.6%	-5.8%	-6.5%	-6.8%	12.5%	-4.9%	387.6%	606.9%	632.2%	802.3%	405.1%	52.9%
Quintile 4	1.9%	-7.1%	-3.5%	-4.5%	3.4%	-27.0%	357.9%	574.3%	590.5%	755.1%	373.6%	51.0%
Quintile 5	6.7%	1.0%	9.3%	12.5%	8.9%	-32.1%	377.6%	615.5%	612.5%	807.3%	394.8%	48.9%
Average	20.3%	4.3%	8.8%	6.0%	21.0%	-9.3%	432.6%	697.5%	750.1%	913.4%	453.1%	50.0%

TABLE 49 Comparison of Local Park and Other Natural Lands Accessibility by Local Bus and Environmental Justice Variables

Comparison of Weighted Average Local Park Accessibility by Local Bus within 45 Minutes (Improvement in Share of Accessible Local Park Acreage)												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	-1.5%	-3.1%	-2.5%	-2.7%	-0.7%	-15.7%	51.7%	65.3%	67.5%	66.0%	52.8%	39.3%
Disabled	-7.9%	-7.9%	-6.2%	-4.9%	-6.7%	-13.1%	49.4%	58.0%	59.2%	57.0%	50.3%	44.7%
Poverty 1	-13.3%	-11.8%	-11.2%	-8.2%	-12.0%	-9.5%	58.4%	65.9%	65.9%	63.2%	59.6%	43.2%
White	4.2%	6.4%	15.4%	30.2%	4.6%	-17.8%	43.8%	69.4%	79.9%	74.4%	44.4%	36.8%
African American	-23.8%	-21.0%	-18.4%	-10.4%	-21.8%	-29.9%	57.5%	63.2%	63.0%	68.6%	58.9%	45.1%
Asian	-8.3%	-6.5%	-3.7%	1.6%	-7.1%	-34.9%	54.3%	66.3%	70.1%	75.3%	55.3%	39.0%
Native American	-10.8%	-10.6%	-15.6%	-15.1%	-12.0%	21.0%	53.8%	69.5%	73.5%	65.7%	55.4%	38.4%
Hispanic	-14.1%	-10.4%	-6.2%	-6.7%	-11.9%	-9.8%	54.1%	61.8%	61.9%	56.5%	55.4%	41.5%
Other Race	-4.6%	-4.5%	1.5%	6.1%	-3.7%	-9.2%	53.5%	71.3%	76.1%	76.5%	54.8%	39.9%
Quintile 1	-13.2%	-12.3%	-11.8%	-9.4%	-12.0%	-7.9%	57.7%	66.3%	66.7%	64.6%	58.9%	43.4%
Quintile 2	-7.9%	-7.0%	-5.3%	-6.0%	-6.6%	-15.6%	54.2%	64.0%	65.1%	60.8%	55.3%	40.6%
Quintile 3	-5.3%	-4.8%	-2.0%	-3.1%	-4.1%	-16.5%	51.2%	63.1%	65.0%	60.4%	52.3%	39.3%
Quintile 4	-2.2%	-2.0%	2.2%	0.7%	-1.2%	-24.8%	48.4%	63.4%	66.6%	62.0%	49.5%	38.0%
Quintile 5	-0.1%	-0.2%	7.1%	7.9%	0.7%	-29.8%	45.1%	65.1%	69.3%	68.3%	46.0%	38.0%
Average	-8.8%	-7.6%	-5.2%	-2.8%	-7.6%	-19.2%	52.7%	65.1%	67.6%	65.6%	53.8%	40.3%

Comparison of Weighted Average Other Natural Lands Accessibility by Local Bus within 45 Minutes (Improvement in Share of Accessible Natural Land Acreage)												
EJ Variable	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	46.8%	17.0%	15.6%	20.6%	46.4%	58.4%	36.3%	53.8%	64.5%	109.5%	35.6%	47.9%
Disabled	3.6%	-8.3%	-8.9%	-13.6%	3.3%	31.1%	36.1%	50.0%	53.7%	100.9%	35.5%	54.3%
Poverty 1	40.4%	9.9%	5.6%	-0.3%	41.1%	26.1%	34.5%	55.2%	72.0%	108.3%	33.5%	52.0%
White	2.3%	11.0%	58.3%	19.0%	4.6%	-31.6%	25.3%	38.7%	73.9%	95.8%	24.2%	48.1%
African American	36.6%	20.8%	22.1%	50.2%	40.0%	-41.5%	25.7%	39.7%	53.3%	67.6%	22.9%	70.4%
Asian	83.9%	95.1%	130.1%	24.9%	87.7%	-23.6%	31.0%	58.2%	78.7%	113.5%	29.6%	35.0%
Native American	6.2%	-16.1%	-13.1%	-7.6%	4.2%	36.5%	26.8%	40.4%	55.1%	113.8%	25.4%	65.4%
Hispanic	-0.8%	-19.1%	-16.0%	-15.0%	0.1%	-8.8%	32.9%	47.7%	55.0%	106.9%	32.0%	55.7%
Other Race	37.6%	32.8%	57.3%	22.2%	40.3%	-7.3%	27.0%	45.7%	70.1%	86.0%	25.5%	49.4%
Quintile 1	43.6%	11.3%	10.5%	9.0%	44.2%	31.4%	33.2%	54.3%	74.2%	110.1%	32.1%	53.4%
Quintile 2	21.6%	-1.1%	-1.7%	-2.6%	22.5%	4.6%	31.9%	49.7%	64.6%	104.9%	30.8%	53.7%
Quintile 3	12.9%	-5.3%	-5.9%	-6.4%	13.8%	-5.4%	30.1%	46.0%	57.5%	101.1%	29.0%	53.4%
Quintile 4	2.1%	-7.2%	-3.0%	-3.8%	3.6%	-27.5%	28.0%	42.3%	52.5%	97.2%	26.8%	51.4%
Quintile 5	5.8%	-0.4%	7.9%	12.9%	8.0%	-32.6%	27.2%	41.0%	52.7%	104.1%	25.9%	49.2%
Average	21.1%	4.0%	8.1%	5.2%	21.9%	-9.6%	30.7%	47.5%	62.1%	102.1%	29.6%	50.4%

ACCESSIBILITY TO THE SAN GABRIEL VALLEY NATIONAL MONUMENT

On October 10, 2014, President Barack Obama designated as a National Monument an area in the San Gabriel Mountains by executive order under the Antiquities Act of 1906. Under the proclamation, the San Gabriel National Monument will be managed by the U.S. Forest Service, which will partner with various governments, non-profit and private entities. This action by the President not only conserves land for present and future generations, but also recognizes park access as a social justice issue. In President Obama's words, "Too many children in L.A. County, especially children of color, don't have access to parks where they can run free, breathe fresh air, experience nature and learn about their environment. This is an issue of social justice. Because it's not enough to have this awesome natural wonder within your sight—you have to be able to access it."

The San Gabriel National Monument designation has come to fruition after more than a decade of public support and advocacy from a broad coalition of groups from business, tourism, conservation, health, environmental justice, academia and culture preservation. The National Monument is primarily located in the Angeles National Forest, with a small portion in the San Bernardino National Forest. It lies in the central and northern limits of the San Gabriel Mountains. Its boundaries west to east extend from Little Tujunga Canyon to Telegraph Peak at the eastern end of the San Antonio massif. The land area consists of 346,177 acres and lies 90 minutes away from 15 million people. The National Monument provides about 70 percent of the Los Angeles County's available natural lands and 30 percent of its drinking water. In essence, the National Monument protects vast wild parkland and conserves watershed, as well as creates enhanced recreational access and outdoor educational opportunities to millions of visitors per year.

Historically, SCAG has analyzed accessibility to parks as part of its environmental justice analysis for the RTP/SCS. To recognize the significance of the National Monument, SCAG also conducted a public transportation accessibility analysis for the San Gabriel National Monument. Results show that there is currently no direct transit access to the National Monument. However, the relative proximity of both Metro Gold Line and Metrolink service to the National Monument present significant opportunities for future transit connections.

The San Gabriel National Monument accessibility analysis uses a cost-distance analysis, which calculates distance in terms of actual travel - not "as the crow flies." This method gives the ability to rank travel based on available roads and other paths in the measurement of distance. In this section's analysis, a map is included to show areas that are 660 feet, one-quarter mile, one-half mile, one mile, and three miles from the San Gabriel National Monument entry points along the road network (EXHIBIT 16). The distance to entry points of the National Monument are overlaid to public transit stops. In the analyses' results, there is no ready access to the San Gabriel National Monument by transit and walking. By bicycle, using a three mile threshold, there are transit stops with accessibility, yet there are limitations by transit schedule, weekday and especially on the weekend (TABLE 50).

Staff also analyzed transit travel times to the San Gabriel National Monument from six transit hubs across the region (Los Angeles Union Station, El Monte Multimodal Station, South LA's Rosa Park Station, North Hollywood Metro Station, Anaheim's ARTIC Station and Downtown Riverside's Metrolink Station) that serve many transit-dependent populations. Results indicate that the shortest average travel times were from El Monte Transit Hub, one hour and 14 minutes during the week and one hour and 20 minutes on the weekend. Average travel times from Union Station were one hour and 30 minutes during the week and nearly one hour 40 minutes on the weekend. From the North Hollywood, Rosa Parks, and ARTIC stations, average travel times were more than two hours on the weekday and two hours and 30 minutes or more on the weekends. The longest average travel times were from the Riverside Downtown Metrolink Station, over two hours on the weekday and nearly four hours on the weekend.

These findings are consistent with the conclusions of the 2008 and 2012 Regional Transportation Plan environmental justice reports, indicating that access to national and state parks by public transportation in the region is very limited. Staff will continue to work with transit agencies and stakeholders to promote and enhance park and natural lands accessibility through public transit and other viable transportation options in the development of 2016 RTP/SCS.

EXHIBIT 16 San Gabriel National Monument Accessibility
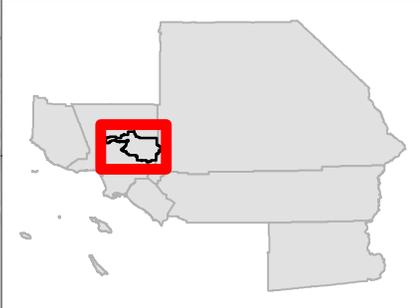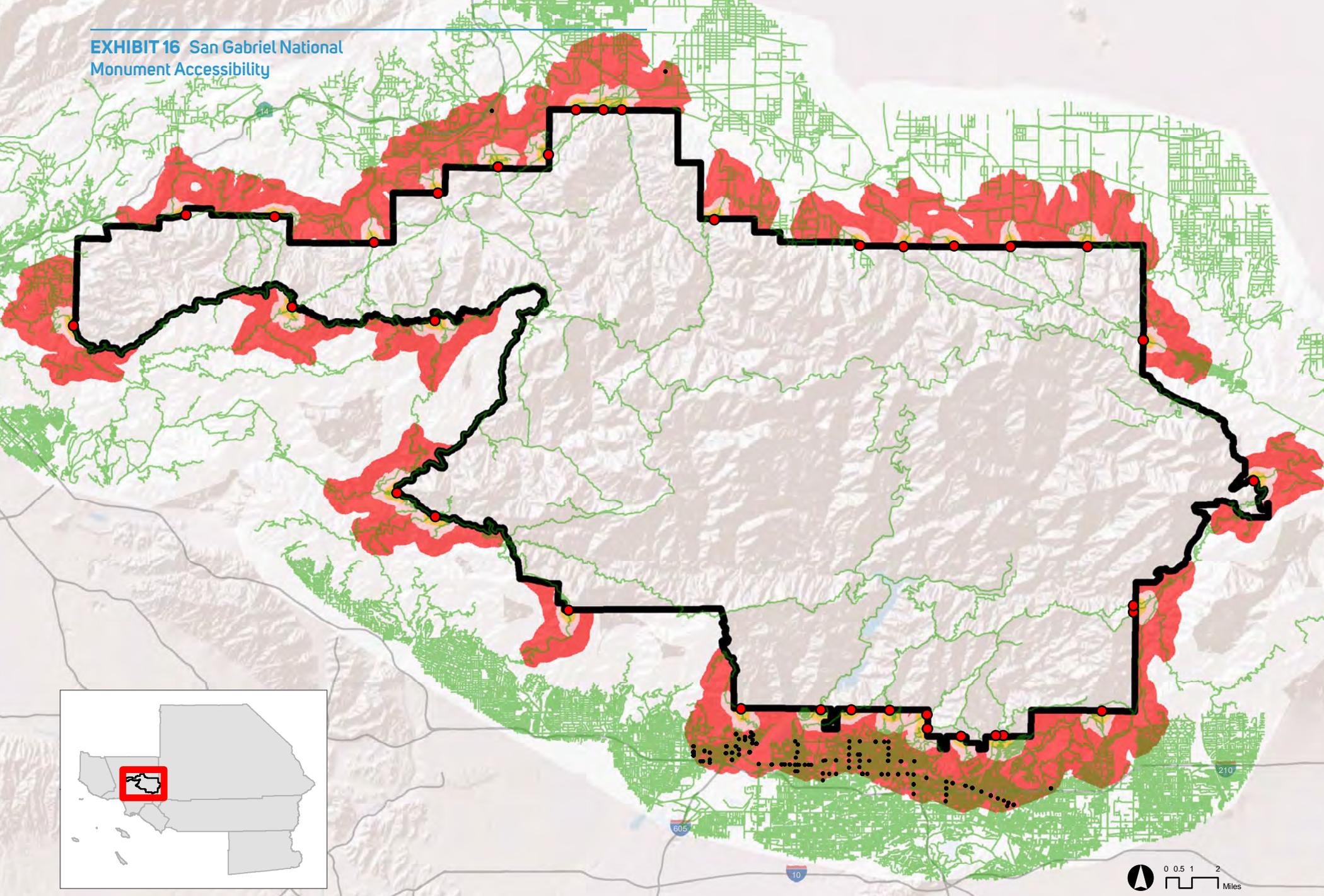
Transit Stops
Entry Points
Roads
Boundary
660'
1/4 Mile
1/2 Mile
1 Mile
3 Miles
Greater than 3 Miles

(Source: SCAG, 2015)

SCAG OUTREACH TO USFS

SCAG staff have proactively outreached to the U.S. Forest Service to offer assistance and help to develop the transportation element of the San Gabriel National Monument Plan (SGNM Plan). Over the last several months, SCAG has met three times with USFS staff to coordinate the planning efforts. The proximity of the National Monument to the Southern California metropolitan area presents a great opportunity to provide public transportation access for millions of residents and visitors. Currently, the Metro Gold Line and Metrolink are major fixed guideway public transportation options that are within the vicinity of the National Monument. Both have stations that would provide viable connections for shuttles to destinations at the National Monument.

TABLE 50 Travel Time to San Gabriel National Monument

Travel Time to San Gabriel National Monument					
Station	Day of Week	Travel Time (minutes)			
		Average	Max	Min	Stand. Dev.
Union Station	Weekday	90	117	65	12
	Weekend	97	174	69	17
El Monte Station	Weekday	74	100	42	14
	Weekend	80	152	43	22
South LA's Rosa Park Station	Weekday	135	175	91	14
	Weekend	154	210	123	18
North Hollywood Station	Weekday	125	157	93	13
	Weekend	141	210	113	17
Anaheim's ARTIC Station	Weekday	150	201	123	17
	Weekend	166	211	138	15
Downtown Riverside's Metrolink station	Weekday	138	208	74	26
	Weekend	218	300	142	30

Source: SCAG

PROXIMITY TO PARKS AND SCHOOLS

METHODOLOGY

This analysis examines the proportion of population within one and two miles of local parks and other natural lands areas. Location data on local parks is obtained from SCAG's Existing Land Use Database and the California Protected Area Database (CPAD). CPAD was also used for geographic data on "other natural lands," which consists of parks that are maintained by state and federal authorities.

KEY FINDINGS

LOCAL PARKS AND OTHER NATURAL LANDS

The share of environmental justice populations within a one-mile and two-mile distance from the region's local parks and other natural lands were determined for the Base Year, Baseline, and Plan scenarios. The datasets are further calculated by showing the changes among different scenarios, which are Baseline versus Base Year and Plan versus Baseline. The results, in general, are different for both local parks and other natural lands. It is important to know that the Plan scenario targets future household and employment in areas that are

well served by transit, which are often in dense areas. The Baseline scenario, alternatively, envisions more growth to occur in outlying areas, which sometimes fall within close proximity to the region's expansive natural lands resource areas. Differences in population within close proximity to natural lands, therefore, do not take into account the improvements in accessibility to parks resulting from transportation investments from the 2016 RTP/SCS or the amount of natural lands that are saved from development as a result of the Plan. **FIGURE 66** presents the current share of population within one and two miles of the region's parks and other natural lands for the year 2012. The proportion overall seems to be consistent in both study areas, with household income Quintile 5 and Quintile 4 having a slightly higher share within the study areas than other household income quintiles. Moreover, Asian, White and Hispanic populations have higher shares than other population groups. Disabled and elderly populations have also yielded higher share than other populations in need.

The proportion of environmental justice population seems to be similar when comparing results at a one-mile and two-mile distance. On average, the proportion of elderly and disabled populations who live within one-mile and two-mile distance from local parks is higher than the share of population in poverty (Poverty 1). Similarly, Hispanic, White and Asian populations have also yielded a higher share than other ethnicities in the area, with the Hispanic population having the highest concentration. The proportion of the Hispanic population and household income Quintile 1 seems to be higher than the population within a one-mile and two-mile distance in all areas of concern for both local parks and other natural lands. The proportions of environmental justice populations within one-mile and two-mile distance from local parks and other natural lands are also calculated to determine the population change among different scenarios, for comparison purposes (**FIGURE 67**).

TABLES 51 - 54 show that the overall trend indicates there are positive changes in nearly all environmental justice populations when comparing Baseline to Base Year, and slight negative changes when comparing Plan to Baseline across all study areas (i.e. EJA, DAC, CoC, Urban and Rural). In addition, the changes in population are generally positive for other natural lands; however, there are negative changes for local parks. As mentioned before, this is due to the fact that the Plan scenario concentrates growth within high quality transit areas (HQTA) in order to promote higher accessibility and improvements for air quality. For local parks, the proportion of elderly, those in poverty, Hispanics, African Americans, Asians, and household income Quintiles 1 and 2, on average, have shown higher improvements in areas within a distance of one-mile and two-mile across EJA, DAC, CoC, Urban and Rural Areas. For other natural lands, the proportion of elderly, African American, Asian, Other Race, and household income quintile four and five have shown higher improvement within one-mile and two-mile distance.

FIGURE 66 Environmental Justice Populations in One and Two Mile of Local Parks (2012)

Source: SCAG

FIGURE 67 2016 RTP/SCS Impacts on Environmental Justice Populations in One and Two Mile of Local Parks (Plan vs. Baseline)
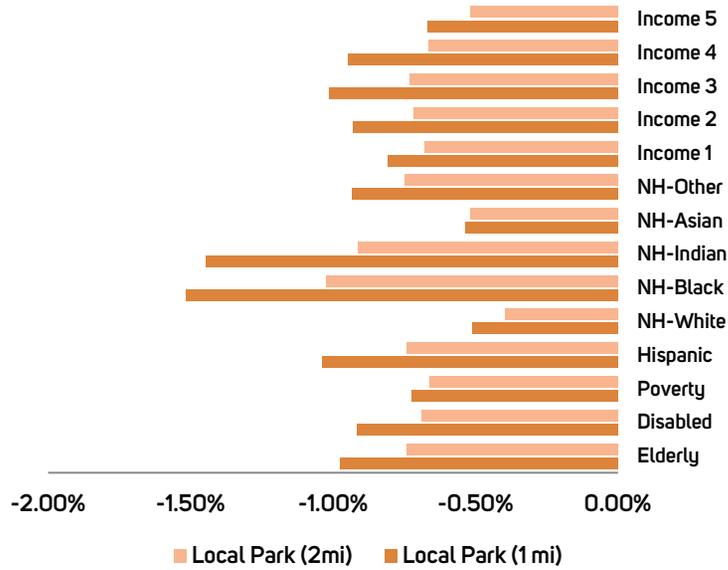
Source: SCAG

TABLE 51 Share of Environmental Justice Populations in One and Two Mile Distance of Local Park

Share of Environmental Justice Populations in One Mile Distance of Local Parks																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	11.4%	17.9%	17.9%	10.0%	16.6%	16.6%	9.2%	15.5%	15.7%	8.4%	14.7%	14.8%	11.4%	17.9%	17.9%	13.6%	18.8%	19.1%
Disabled	9.3%	9.3%	9.3%	10.0%	9.9%	9.9%	10.2%	10.0%	10.0%	9.9%	9.9%	9.9%	9.3%	9.3%	9.3%	10.4%	10.3%	10.2%
Poverty 1	4.4%	4.6%	4.6%	5.0%	5.0%	5.0%	5.2%	5.0%	5.1%	5.9%	5.6%	5.6%	4.4%	4.6%	4.6%	4.3%	4.9%	4.9%
Hispanic	46.6%	52.4%	52.3%	58.4%	60.2%	60.2%	67.5%	65.7%	65.5%	72.4%	69.7%	69.6%	46.6%	52.4%	52.3%	37.4%	56.8%	56.7%
White	31.1%	22.0%	22.0%	18.0%	14.1%	14.1%	11.7%	10.9%	11.0%	7.6%	8.6%	8.6%	31.1%	21.9%	22.0%	50.4%	26.5%	25.5%
African American	6.6%	5.3%	5.2%	8.4%	6.4%	6.3%	8.8%	6.5%	6.4%	11.4%	7.9%	7.8%	6.6%	5.3%	5.2%	3.4%	5.0%	5.1%
Native American	0.3%	0.4%	0.4%	0.3%	0.4%	0.3%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.7%	0.9%	0.9%
Asian	13.1%	16.9%	17.0%	13.2%	16.4%	16.5%	10.3%	14.3%	14.6%	7.2%	11.5%	11.7%	13.2%	17.0%	17.0%	5.4%	7.8%	8.7%
Other Race	2.3%	3.1%	3.1%	1.9%	2.6%	2.6%	1.5%	2.2%	2.3%	1.2%	2.1%	2.1%	2.3%	3.1%	3.1%	2.6%	3.1%	3.1%
Quintile 1	19.9%	20.5%	20.5%	24.0%	23.4%	23.4%	25.9%	24.6%	24.4%	29.3%	27.4%	27.2%	19.9%	20.5%	20.5%	20.1%	22.0%	21.9%
Quintile 2	19.8%	20.6%	20.6%	22.5%	22.5%	22.5%	23.7%	23.3%	23.2%	25.0%	24.3%	24.2%	19.8%	20.6%	20.6%	20.0%	22.0%	21.9%
Quintile 3	19.9%	20.4%	20.4%	20.7%	20.9%	20.8%	20.7%	20.8%	20.8%	20.5%	20.5%	20.6%	19.9%	20.4%	20.3%	20.0%	20.8%	20.9%
Quintile 4	20.1%	19.8%	19.8%	18.3%	18.5%	18.5%	17.2%	17.8%	17.8%	15.4%	16.3%	16.3%	20.1%	19.8%	19.8%	20.0%	18.8%	19.1%
Quintile 5	20.3%	18.7%	18.8%	14.6%	14.8%	14.8%	12.4%	13.5%	13.8%	9.8%	11.6%	11.7%	20.3%	18.8%	18.8%	19.9%	16.4%	16.3%

Share of Environmental Justice Populations in Two Mile Distance of Local Parks																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	11.5%	18.1%	18.1%	10.1%	16.8%	16.8%	9.1%	15.6%	15.8%	8.5%	14.9%	14.9%	11.4%	18.1%	18.0%	13.7%	19.5%	19.9%
Disabled	9.3%	9.4%	9.4%	10.0%	9.9%	9.9%	10.3%	10.0%	10.0%	10.0%	9.9%	9.9%	9.3%	9.4%	9.4%	9.7%	10.1%	10.1%
Poverty 1	4.4%	4.6%	4.6%	5.1%	5.1%	5.1%	5.2%	5.0%	5.1%	5.9%	5.6%	5.6%	4.5%	4.6%	4.6%	4.3%	4.9%	4.9%
Hispanic	46.2%	52.4%	52.4%	57.4%	59.7%	59.7%	67.2%	65.5%	65.3%	71.8%	69.0%	68.9%	46.3%	52.4%	52.3%	35.4%	56.2%	56.7%
White	31.9%	22.1%	22.2%	19.4%	14.7%	14.7%	12.1%	11.2%	11.3%	8.1%	9.1%	9.1%	31.7%	22.0%	22.1%	52.6%	26.3%	24.7%
African American	6.5%	5.3%	5.3%	8.2%	6.4%	6.3%	8.7%	6.5%	6.4%	11.3%	7.9%	7.8%	6.5%	5.3%	5.3%	3.5%	5.2%	5.4%
Native American	0.3%	0.4%	0.4%	0.3%	0.4%	0.4%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.8%	0.8%	0.8%
Asian	12.8%	16.7%	16.7%	12.8%	16.2%	16.2%	10.3%	14.2%	14.4%	7.3%	11.7%	11.8%	12.9%	16.8%	16.8%	5.2%	8.3%	9.3%
Other Race	2.4%	3.1%	3.1%	1.9%	2.7%	2.7%	1.5%	2.3%	2.3%	1.3%	2.1%	2.1%	2.4%	3.1%	3.1%	2.6%	3.1%	3.1%
Quintile 1	19.9%	20.5%	20.5%	24.0%	23.4%	23.4%	25.9%	24.6%	24.4%	29.3%	27.4%	27.2%	19.9%	20.5%	20.5%	20.1%	22.0%	21.9%
Quintile 2	19.8%	20.6%	20.6%	22.5%	22.5%	22.5%	23.7%	23.3%	23.2%	25.0%	24.3%	24.2%	19.8%	20.6%	20.6%	20.0%	22.0%	21.9%
Quintile 3	19.9%	20.4%	20.4%	20.7%	20.9%	20.8%	20.7%	20.8%	20.8%	20.5%	20.5%	20.6%	19.9%	20.4%	20.3%	20.0%	20.8%	20.9%
Quintile 4	20.1%	19.8%	19.8%	18.3%	18.5%	18.5%	17.2%	17.8%	17.8%	15.4%	16.3%	16.3%	20.1%	19.8%	19.8%	20.0%	18.8%	19.1%
Quintile 5	20.3%	18.7%	18.8%	14.6%	14.8%	14.8%	12.4%	13.5%	13.8%	9.8%	11.6%	11.7%	20.3%	18.8%	18.8%	19.9%	16.4%	16.3%

Source: SCAG

TABLE 52 Share of Environmental Justice Populations in One and Two Mile Distance of Other Natural Lands

Share of Environmental Justice Populations in One Mile Distance of Other Natural Lands																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	13.0%	19.4%	19.3%	12.1%	18.3%	18.2%	9.7%	16.2%	17.0%	8.6%	15.8%	16.6%	12.9%	19.2%	19.1%	14.4%	20.7%	20.6%
Disabled	9.1%	9.5%	9.5%	10.1%	10.1%	10.1%	11.3%	11.0%	10.9%	9.4%	9.4%	9.4%	9.1%	9.4%	9.5%	8.3%	9.6%	9.6%
Poverty 1	5.2%	5.2%	5.2%	6.6%	6.1%	6.1%	7.1%	5.8%	5.9%	7.8%	6.3%	6.3%	5.2%	5.2%	5.2%	4.6%	5.4%	5.4%
Hispanic	35.9%	46.5%	46.4%	47.0%	53.4%	52.9%	63.4%	64.3%	62.8%	55.2%	58.5%	57.7%	36.9%	46.5%	46.3%	23.6%	47.2%	47.9%
White	45.3%	29.9%	29.9%	34.1%	24.2%	24.6%	11.2%	12.4%	12.7%	14.4%	12.8%	13.2%	43.7%	29.6%	29.8%	65.1%	32.4%	30.9%
African American	6.3%	5.8%	5.9%	8.1%	6.9%	6.9%	12.0%	7.7%	7.5%	16.4%	10.9%	10.4%	6.6%	5.9%	6.0%	3.0%	4.9%	5.2%
Native American	0.4%	0.5%	0.5%	0.4%	0.5%	0.5%	0.3%	0.4%	0.4%	0.3%	0.4%	0.4%	0.3%	0.4%	0.4%	0.8%	0.7%	0.7%
Asian	9.5%	13.8%	13.8%	8.1%	11.8%	11.9%	11.9%	13.0%	14.1%	12.3%	14.7%	15.5%	9.9%	14.1%	14.0%	4.7%	11.3%	11.7%
Other Race	2.7%	3.6%	3.6%	2.3%	3.3%	3.3%	1.2%	2.3%	2.5%	1.5%	2.7%	2.8%	2.6%	3.6%	3.6%	2.8%	3.6%	3.6%
Quintile 1	21.2%	21.3%	21.3%	27.7%	25.4%	25.2%	31.4%	26.8%	26.2%	34.0%	29.4%	28.8%	21.3%	21.2%	21.3%	19.3%	22.3%	22.2%
Quintile 2	19.5%	20.6%	20.6%	22.7%	23.0%	22.8%	23.2%	23.3%	23.1%	24.9%	24.2%	23.9%	19.5%	20.6%	20.6%	19.6%	21.9%	21.7%
Quintile 3	19.2%	19.9%	20.0%	19.7%	20.4%	20.4%	19.1%	20.0%	20.1%	18.9%	19.6%	19.7%	19.1%	19.9%	19.9%	20.0%	20.5%	20.6%
Quintile 4	19.5%	19.4%	19.4%	16.9%	17.7%	17.8%	15.3%	16.7%	17.1%	13.7%	15.4%	15.7%	19.5%	19.4%	19.4%	20.9%	18.9%	19.1%
Quintile 5	20.6%	18.8%	18.7%	12.9%	13.6%	13.8%	11.0%	13.1%	13.6%	8.5%	11.4%	11.8%	20.6%	19.0%	18.9%	20.4%	16.5%	16.5%

Share of Environmental Justice Populations in Two Mile Distance of Other Natural Lands																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Seniors	12.5%	18.5%	18.5%	11.3%	17.1%	17.2%	9.2%	15.7%	16.3%	8.0%	14.8%	15.2%	12.4%	18.4%	18.4%	14.4%	20.8%	20.8%
Disabled	9.2%	9.3%	9.4%	10.2%	10.0%	10.0%	10.3%	9.9%	9.9%	9.6%	9.5%	9.5%	9.2%	9.3%	9.3%	8.8%	9.7%	9.8%
Poverty 1	5.1%	5.2%	5.2%	6.5%	6.0%	6.1%	6.7%	5.8%	6.0%	7.1%	6.2%	6.2%	5.2%	5.2%	5.2%	4.5%	5.3%	5.4%
Hispanic	42.0%	50.2%	50.1%	56.4%	59.8%	59.4%	68.6%	67.4%	66.1%	68.4%	66.4%	65.8%	42.7%	50.3%	50.2%	25.0%	48.2%	48.6%
White	39.7%	26.8%	26.7%	25.2%	18.5%	18.5%	11.1%	11.0%	11.4%	10.1%	10.2%	10.5%	38.7%	26.6%	26.5%	63.2%	31.3%	30.1%
African American	6.5%	5.6%	5.7%	8.7%	6.8%	6.8%	10.6%	6.9%	6.8%	13.0%	9.3%	9.1%	6.6%	5.6%	5.7%	3.2%	4.8%	5.1%
Native American	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.9%	0.8%	0.8%
Asian	9.1%	13.7%	13.7%	7.4%	11.7%	12.0%	8.2%	12.1%	13.0%	7.1%	11.5%	12.0%	9.3%	13.8%	13.8%	5.1%	11.5%	11.9%
Other Race	2.5%	3.3%	3.4%	1.9%	2.9%	2.9%	1.3%	2.2%	2.4%	1.3%	2.3%	2.4%	2.5%	3.3%	3.3%	2.8%	3.5%	3.5%
Quintile 1	21.2%	21.3%	21.3%	27.7%	25.4%	25.2%	31.4%	26.8%	26.2%	34.0%	29.4%	28.8%	21.3%	21.2%	21.3%	19.3%	22.3%	22.2%
Quintile 2	19.5%	20.6%	20.6%	22.7%	23.0%	22.8%	23.2%	23.3%	23.1%	24.9%	24.2%	23.9%	19.5%	20.6%	20.6%	19.6%	21.9%	21.7%
Quintile 3	19.2%	19.9%	20.0%	19.7%	20.4%	20.4%	19.1%	20.0%	20.1%	18.9%	19.6%	19.7%	19.1%	19.9%	19.9%	20.0%	20.5%	20.6%
Quintile 4	19.5%	19.4%	19.4%	16.9%	17.7%	17.8%	15.3%	16.7%	17.1%	13.7%	15.4%	15.7%	19.5%	19.4%	19.4%	20.9%	18.9%	19.1%
Quintile 5	20.6%	18.8%	18.7%	12.9%	13.6%	13.8%	11.0%	13.1%	13.6%	8.5%	11.4%	11.8%	20.6%	19.0%	18.9%	20.4%	16.5%	16.5%

Source: SCAG

TABLE 53 Comparison of Environmental Justice Populations in One and Two Mile Distance of Local Parks

Comparison of Environmental Justice Populations in One Mile Distance of Local Parks												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	85%	98%	96%	102%	85%	103%	-1%	-2%	2%	0%	-1%	10%
Disabled	19%	18%	14%	15%	18%	46%	-1%	-1%	1%	-1%	-1%	7%
Poverty 1	22%	18%	13%	10%	22%	67%	-1%	-1%	2%	-1%	-1%	7%
Hispanic	33%	23%	13%	12%	32%	123%	-1%	-1%	1%	-1%	-1%	8%
White	-17%	-7%	9%	31%	-17%	-23%	-1%	-2%	2%	-1%	-1%	5%
African American	-5%	-10%	-15%	-20%	-6%	114%	-2%	-2%	-1%	-2%	-2%	10%
Native American	65%	67%	64%	86%	65%	76%	-1%	-3%	0%	-2%	-2%	5%
Asian	52%	49%	62%	87%	52%	111%	-1%	-1%	3%	1%	-1%	21%
Other Race	56%	67%	80%	94%	56%	72%	-1%	-2%	2%	-1%	-1%	10%
Quintile 1	26%	22%	16%	15%	26%	67%	-1%	-1%	2%	-1%	-1%	7%
Quintile 2	27%	25%	21%	20%	27%	69%	-1%	-1%	2%	-1%	-1%	8%
Quintile 3	25%	26%	23%	23%	25%	61%	-1%	-2%	2%	-1%	-1%	9%
Quintile 4	21%	27%	26%	29%	21%	48%	-1%	-1%	3%	0%	-1%	10%
Quintile 5	14%	27%	33%	44%	14%	31%	-1%	-1%	5%	1%	-1%	9%

Comparison of Environmental Justice Populations in Two Mile Distance of Local Parks												
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Elderly	89%	101%	102%	108%	88%	128%	-1%	-2%	2%	-1%	-1%	18%
Disabled	20%	19%	15%	17%	20%	66%	-1%	-2%	1%	-1%	-1%	15%
Poverty 1	25%	20%	14%	11%	24%	83%	-1%	-1%	2%	-1%	-1%	16%
Hispanic	36%	26%	15%	13%	35%	154%	-1%	-2%	1%	-1%	-1%	16%
White	-17%	-9%	10%	32%	-17%	-20%	0%	-2%	2%	-1%	-1%	9%
African American	-2%	-6%	-12%	-18%	-2%	140%	-1%	-2%	0%	-2%	-1%	18%
Native American	68%	71%	69%	89%	68%	72%	-1%	-3%	1%	-2%	-1%	10%
Asian	56%	53%	63%	88%	55%	158%	-1%	-1%	3%	0%	-1%	28%
Other Race	58%	69%	83%	97%	58%	88%	-1%	-2%	2%	-2%	-1%	17%
Quintile 1	29%	24%	18%	16%	28%	83%	-1%	-1%	2%	-2%	-1%	16%
Quintile 2	30%	27%	22%	21%	29%	83%	-1%	-2%	2%	-1%	-1%	16%
Quintile 3	27%	28%	25%	25%	27%	73%	-1%	-2%	3%	-1%	-1%	17%
Quintile 4	23%	29%	28%	32%	23%	57%	-1%	-1%	3%	-1%	-1%	18%
Quintile 5	15%	28%	35%	47%	15%	38%	-1%	-1%	5%	0%	-1%	16%

Source: SCAG

TABLE 54 Comparison of Environmental Justice Populations in One and Two Mile Distance of Other Natural Lands

Comparison of Environmental Justice Populations in One Mile Distance of Other Natural Lands											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	85%	90%	97%	117%	81%	132%	-1%	-4%	17%	15%	-2%	8%
Disabled	29%	25%	15%	19%	25%	85%	0%	-3%	10%	9%	-1%	9%
Poverty 1	26%	16%	-3%	-4%	22%	88%	-1%	-3%	13%	9%	-2%	9%
Hispanic	61%	43%	20%	25%	53%	222%	0%	-4%	9%	8%	-1%	10%
White	-18%	-11%	31%	5%	-18%	-20%	0%	-2%	14%	13%	-1%	3%
African American	14%	6%	-24%	-21%	8%	161%	2%	-3%	9%	4%	1%	17%
Native American	57%	52%	58%	65%	59%	50%	1%	-3%	12%	10%	0%	7%
Asian	80%	83%	28%	41%	72%	286%	0%	-2%	21%	15%	-1%	12%
Other Race	67%	81%	130%	110%	64%	104%	0%	-2%	21%	14%	0%	9%
Quintile 1	33%	23%	2%	4%	28%	92%	-1%	-4%	14%	9%	-2%	8%
Quintile 2	38%	34%	26%	26%	34%	86%	-1%	-5%	16%	12%	-2%	7%
Quintile 3	34%	34%	33%	34%	31%	71%	-1%	-4%	19%	16%	-2%	8%
Quintile 4	26%	34%	40%	44%	24%	51%	-1%	-4%	21%	20%	-2%	9%
Quintile 5	17%	38%	62%	79%	15%	37%	-1%	-3%	23%	23%	-2%	7%

Comparison of Environmental Justice Populations in Two Mile Distance of Other Natural Lands											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Seniors	81%	86%	99%	116%	78%	143%	1%	1%	13%	5%	0%	6%
Disabled	24%	20%	12%	14%	21%	85%	1%	1%	9%	2%	1%	7%
Poverty 1	23%	13%	2%	2%	20%	100%	1%	2%	12%	2%	1%	8%
Hispanic	46%	30%	15%	12%	41%	223%	1%	0%	7%	2%	0%	7%
White	-17%	-10%	16%	18%	-18%	-17%	0%	1%	13%	5%	0%	2%
African American	5%	-5%	-24%	-17%	2%	157%	2%	0%	7%	0%	2%	13%
Native American	57%	51%	50%	72%	58%	51%	1%	0%	10%	3%	1%	4%
Asian	84%	92%	73%	89%	79%	279%	1%	3%	16%	6%	1%	10%
Other Race	64%	81%	96%	106%	62%	111%	1%	2%	16%	5%	1%	7%
Quintile 1	28%	18%	5%	7%	25%	103%	1%	1%	13%	1%	1%	6%
Quintile 2	35%	30%	24%	20%	32%	96%	1%	1%	14%	3%	1%	6%
Quintile 3	33%	33%	29%	28%	30%	80%	1%	2%	16%	4%	1%	7%
Quintile 4	26%	34%	34%	39%	25%	59%	1%	3%	18%	6%	1%	8%
Quintile 5	16%	36%	46%	65%	15%	42%	1%	4%	20%	8%	0%	6%

Source: SCAG

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The proportions of environmental justice populations were also calculated within one-mile and two-mile distance from all educational institutions for the Base Year, Baseline and Plan scenarios. **FIGURE 68** shows the current proportion of environmental justice populations within a one-mile and two-mile distance from educational institutions. The proportion overall seems to be consistent in both study areas. The environmental justice population within a one-mile and two-mile from schools seems to be similar with the previous analysis for parks and other natural lands: household income Quintiles 5 and 4 have a slightly higher share within the study areas than other household income quintiles. Moreover, Asians, Whites and Hispanics have a higher share than other population groups. Disabled and elderly groups, and children age 5-14 have also yielded a higher share than other populations.

There are two new age groups introduced into the analysis: children aged 0-4 and 5-14 (**TABLE 55**). It is important to include these particular age groups because they are relevant to education facilities. On average, the proportion of population aged 5-14 who live within a one-mile and two-mile distance from schools is higher than the share of children aged 0-4 who live in the same areas. The proportion of elderly and disabled populations who live within a one-mile and two-mile distance from schools is also higher than the share for those in poverty. In addition, the Hispanic, White and Asian populations have also shown a higher proportional breakdown than other ethnicities in the area; the Hispanic population has the highest share. Household income Quintiles 1 and 2 have the highest proportion within a one and two-mile distance from schools, when compared to other household income quintiles.

FIGURE 68 Environmental Justice Populations in One and Two Mile of Schools (2012)
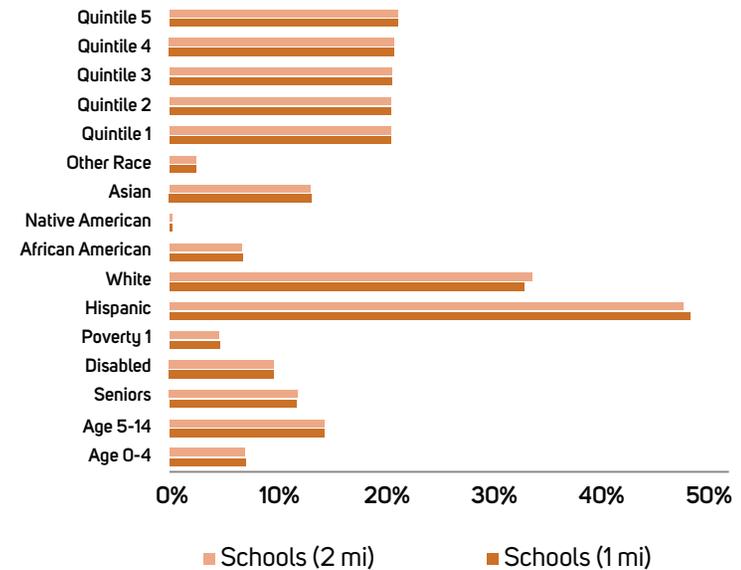
Source SCAG:

TABLE 55 Share of Environmental Justice Populations in One and Two Mile Distance of Schools

	Share of Environmental Justice Populations in One Mile Distance of Schools																	
EJ Var	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Age 0-4	6.8%	6.2%	6.2%	7.4%	6.7%	6.7%	8.0%	7.2%	7.1%	8.3%	7.4%	7.4%	6.8%	6.2%	6.2%	6.9%	6.0%	6.0%
Age 5-14	13.8%	12.6%	12.6%	14.5%	13.1%	13.1%	15.4%	13.8%	13.7%	15.9%	14.0%	14.0%	13.8%	12.6%	12.6%	15.2%	13.2%	13.2%
Seniors	11.3%	18.0%	17.9%	10.0%	16.7%	16.7%	9.1%	15.5%	15.7%	8.5%	14.9%	14.9%	11.3%	18.0%	17.9%	12.0%	18.2%	18.5%
Disabled	9.3%	9.4%	9.4%	10.0%	9.9%	9.9%	10.3%	10.1%	10.0%	10.0%	9.9%	9.9%	9.3%	9.4%	9.4%	10.8%	10.8%	10.7%
Poverty 1	4.5%	4.7%	4.7%	5.1%	5.1%	5.1%	5.2%	5.0%	5.1%	5.9%	5.6%	5.6%	4.5%	4.6%	4.7%	4.4%	5.2%	5.2%
Hispanic	46.5%	52.4%	52.3%	57.7%	59.7%	59.7%	67.4%	65.7%	65.5%	72.0%	69.1%	69.1%	46.5%	52.3%	52.2%	42.2%	58.9%	58.7%
White	31.7%	22.1%	22.3%	19.3%	14.7%	14.7%	12.0%	11.2%	11.2%	7.9%	8.9%	8.9%	31.6%	22.1%	22.3%	47.2%	25.2%	24.8%
African American	6.5%	5.3%	5.3%	8.2%	6.3%	6.3%	8.7%	6.4%	6.3%	11.4%	7.9%	7.8%	6.5%	5.3%	5.3%	3.3%	4.5%	4.8%
Native American	0.3%	0.4%	0.4%	0.3%	0.4%	0.3%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.7%	0.9%	0.8%
Asian	12.7%	16.7%	16.8%	12.7%	16.3%	16.3%	10.2%	14.2%	14.4%	7.3%	11.7%	11.8%	12.8%	16.8%	16.8%	4.1%	7.7%	8.0%
Other Race	2.4%	3.1%	3.1%	1.9%	2.7%	2.7%	1.5%	2.3%	2.3%	1.3%	2.1%	2.1%	2.4%	3.1%	3.1%	2.4%	2.9%	3.0%
Quintile 1	19.8%	20.5%	20.5%	23.9%	23.4%	23.4%	25.8%	24.5%	24.4%	29.3%	27.4%	27.2%	19.8%	20.4%	20.4%	20.6%	22.9%	22.6%
Quintile 2	19.8%	20.6%	20.6%	22.4%	22.5%	22.5%	23.7%	23.3%	23.2%	25.0%	24.3%	24.2%	19.8%	20.6%	20.6%	20.1%	21.9%	21.9%
Quintile 3	19.9%	20.4%	20.3%	20.7%	20.9%	20.8%	20.7%	20.8%	20.8%	20.5%	20.6%	20.6%	19.9%	20.3%	20.3%	20.2%	20.7%	20.8%
Quintile 4	20.1%	19.8%	19.8%	18.3%	18.5%	18.5%	17.3%	17.8%	17.9%	15.4%	16.3%	16.3%	20.1%	19.8%	19.8%	20.0%	18.5%	18.8%
Quintile 5	20.5%	18.8%	18.8%	14.7%	14.8%	14.8%	12.5%	13.6%	13.8%	9.8%	11.6%	11.7%	20.5%	18.8%	18.9%	19.1%	16.0%	15.9%

Source: SCAG

TABLE 55 Share of Environmental Justice Populations in One and Two Mile Distance of Schools (Continued)

EJ Var	Share of Environmental Justice Populations in Two Mile Distance of Schools																	
	SCAG (BY)	SCAG (BL)	SCAG (PL)	EJA (BY)	EJA (BL)	EJA (PL)	DAC (BY)	DAC (BL)	DAC (PL)	CoC (BY)	CoC (BL)	CoC (PL)	Urban (BY)	Urban (BL)	Urban (PL)	Rural (BY)	Rural (BL)	Rural (PL)
Age 0-4	6.7%	6.2%	6.2%	7.4%	6.7%	6.7%	8.0%	7.1%	7.1%	8.3%	7.4%	7.4%	6.7%	6.2%	6.2%	6.5%	5.9%	5.9%
Age 5-14	13.8%	12.6%	12.6%	14.5%	13.2%	13.2%	15.4%	13.8%	13.7%	15.9%	14.0%	14.0%	13.8%	12.6%	12.6%	14.5%	13.0%	13.0%
Seniors	11.5%	18.1%	18.0%	10.1%	16.8%	16.8%	9.1%	15.6%	15.7%	8.5%	14.9%	14.9%	11.5%	18.0%	18.0%	12.3%	18.7%	19.1%
Disabled	9.3%	9.4%	9.4%	10.0%	9.9%	9.9%	10.3%	10.1%	10.0%	10.0%	10.0%	10.0%	9.3%	9.4%	9.4%	10.5%	10.5%	10.4%
Poverty 1	4.4%	4.7%	4.7%	5.1%	5.1%	5.1%	5.2%	5.0%	5.1%	5.9%	5.6%	5.6%	4.4%	4.6%	4.6%	4.4%	5.1%	5.1%
Hispanic	45.9%	52.3%	52.3%	57.2%	59.7%	59.7%	67.4%	65.6%	65.4%	71.9%	69.1%	69.1%	46.0%	52.2%	52.2%	38.5%	56.7%	57.0%
White	32.4%	22.4%	22.4%	19.9%	14.9%	14.9%	12.2%	11.3%	11.3%	8.1%	9.1%	9.0%	32.2%	22.3%	22.4%	50.4%	26.4%	25.2%
African American	6.5%	5.4%	5.3%	8.2%	6.4%	6.3%	8.7%	6.5%	6.4%	11.3%	7.9%	7.8%	6.5%	5.4%	5.3%	3.6%	4.8%	5.1%
Native American	0.3%	0.4%	0.4%	0.3%	0.4%	0.4%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.8%	0.8%	0.8%
Asian	12.6%	16.5%	16.5%	12.6%	16.0%	16.0%	10.1%	14.0%	14.2%	7.3%	11.6%	11.7%	12.7%	16.6%	16.6%	4.3%	8.4%	8.9%
Other Race	2.4%	3.1%	3.1%	1.9%	2.7%	2.7%	1.5%	2.3%	2.3%	1.3%	2.1%	2.1%	2.4%	3.1%	3.1%	2.5%	3.0%	3.1%
Quintile 1	19.8%	20.5%	20.5%	23.9%	23.4%	23.4%	25.8%	24.5%	24.4%	29.3%	27.4%	27.2%	19.8%	20.4%	20.4%	20.6%	22.9%	22.6%
Quintile 2	19.8%	20.6%	20.6%	22.4%	22.5%	22.5%	23.7%	23.3%	23.2%	25.0%	24.3%	24.2%	19.8%	20.6%	20.6%	20.1%	21.9%	21.9%
Quintile 3	19.9%	20.4%	20.3%	20.7%	20.9%	20.8%	20.7%	20.8%	20.8%	20.5%	20.6%	20.6%	19.9%	20.3%	20.3%	20.2%	20.7%	20.8%
Quintile 4	20.1%	19.8%	19.8%	18.3%	18.5%	18.5%	17.3%	17.8%	17.9%	15.4%	16.3%	16.3%	20.1%	19.8%	19.8%	20.0%	18.5%	18.8%
Quintile 5	20.5%	18.8%	18.8%	14.7%	14.8%	14.8%	12.5%	13.6%	13.8%	9.8%	11.6%	11.7%	20.5%	18.8%	18.9%	19.1%	16.0%	15.9%

Source: SCAG

The proportions of environmental justice populations within a one-mile and two-mile distance from schools are also further calculated to determine the population change for future years (**FIGURE 69**). Impacts were calculated by comparing the Baseline scenario with the Base Year and the Plan scenario with the Baseline. The changes for environmental justice population groups within one-mile and two-mile of schools and study area (EJA, DAC, CoC, Urban, Rural) are similar to the results for the aforementioned local parks and other natural lands accessibility analysis. The overall trend has shown that there are positive changes for almost all environmental justice populations when comparing the Baseline to Base Year conditions and a slight negative change (approximately 2 percent) when comparing the Plan to the Baseline scenario across all study areas. Generally, similar impacts across environmental justice population groups are seen within a one-mile and two-mile distance from education institutions. As a result, the proportion of young children aged 0-4, seniors (age 65+), households in poverty (Poverty 1), African Americans, Asians, Other Races and households in income Quintile 4 and 5, on average, have shown a higher improvement within a one-mile and two-mile distance across EJA, DAC, CoC, Urban, and Rural Areas.**TABLE 56** provides additional detail on the results of this analysis.

FIGURE 69 2016 RTP/SCS Impacts on Environmental Justice Populations in One and Two Mile of Schools (Plan vs. Baseline)

Source: SCAG

TABLE 56 Comparison of Environmental Justice Populations in One and Two Mile Distance of Schools

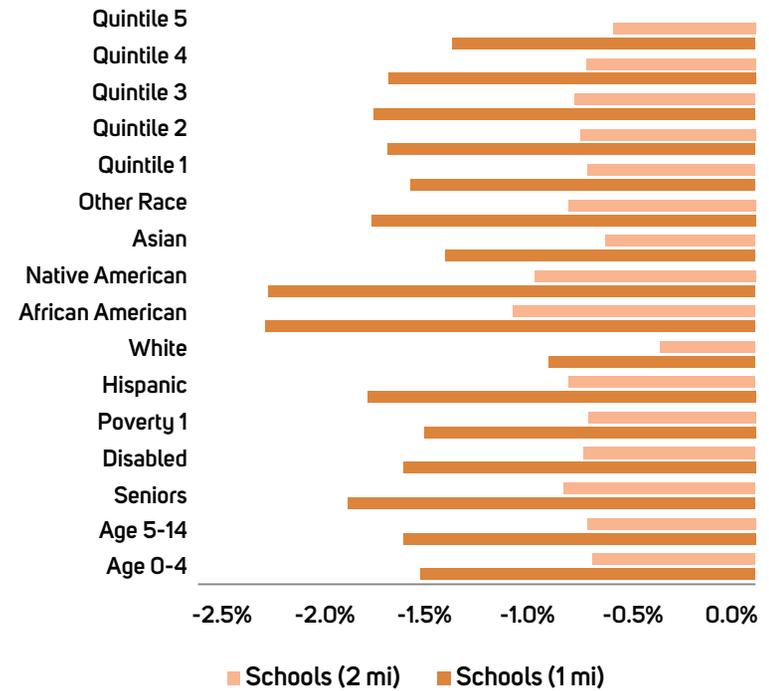|	Comparison of Environmental Justice Populations in One Mile Distance of Schools											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Age 0-4	10%	8%	5%	3%	9%	29%	-2%	-2%	0%	-1%	-2%	9%
Age 5-14	8%	8%	5%	3%	8%	28%	-2%	-2%	0%	-1%	-2%	9%
Seniors	88%	100%	99%	105%	88%	124%	-2%	-3%	1%	-1%	-2%	11%
Disabled	19%	18%	14%	16%	19%	48%	-2%	-2%	0%	-1%	-2%	8%
Poverty 1	24%	19%	13%	10%	23%	73%	-1%	-2%	1%	-1%	-2%	9%
Hispanic	34%	24%	14%	12%	33%	106%	-2%	-2%	0%	-1%	-2%	8%
White	-17%	-8%	9%	32%	-17%	-21%	-1%	-2%	1%	-2%	-1%	7%
African American	-4%	-8%	-13%	-19%	-4%	97%	-2%	-3%	-1%	-2%	-2%	16%
Native American	67%	69%	67%	86%	67%	76%	-2%	-4%	-1%	-3%	-2%	5%
Asian	56%	53%	63%	87%	56%	175%	-1%	-2%	2%	0%	-1%	13%
Other Race	57%	68%	82%	95%	57%	76%	-2%	-3%	1%	-2%	-2%	11%
Quintile 1	27%	23%	17%	16%	27%	73%	-2%	-2%	1%	-2%	-2%	9%
Quintile 2	28%	26%	21%	20%	28%	70%	-2%	-2%	1%	-2%	-2%	11%
Quintile 3	26%	27%	24%	24%	26%	60%	-2%	-2%	2%	-1%	-2%	11%
Quintile 4	22%	28%	27%	30%	22%	45%	-2%	-2%	2%	-1%	-2%	12%
Quintile 5	14%	27%	34%	46%	14%	33%	-1%	-1%	4%	0%	-1%	10%

Source: SCAG

TABLE 56 Comparison of Environmental Justice Populations in One and Two Mile Distance of Schools (Continued)

Comparison of Environmental Justice Populations in Two Mile Distance of Schools											
	2040 Base Line - 2012 Base Year						2040 Plan - 2040 Base Line					
	SCAG	EJA	DAC	CoC	Urban	Rural	SCAG	EJA	DAC	CoC	Urban	Rural
Age 0-4	11%	9%	6%	4%	10%	40%	-1%	-2%	1%	-1%	-1%	14%
Age 5-14	10%	10%	6%	3%	9%	39%	-1%	-2%	1%	-1%	-1%	14%
Seniors	89%	101%	102%	108%	88%	134%	-1%	-2%	2%	-1%	-1%	16%
Disabled	21%	19%	15%	17%	20%	55%	-1%	-2%	1%	-1%	-1%	13%
Poverty 1	25%	20%	14%	11%	25%	81%	-1%	-1%	2%	-1%	-1%	14%
Hispanic	37%	26%	15%	13%	36%	128%	-1%	-2%	1%	-1%	-1%	14%
White	-17%	-9%	9%	32%	-17%	-19%	0%	-2%	2%	-2%	-1%	9%
African American	-1%	-5%	-12%	-18%	-2%	109%	-1%	-2%	0%	-2%	-1%	21%
Native American	68%	70%	69%	90%	68%	62%	-1%	-3%	1%	-3%	-1%	9%
Asian	57%	54%	64%	88%	56%	201%	-1%	-2%	3%	0%	-1%	21%
Other Race	58%	70%	83%	97%	58%	87%	-1%	-2%	2%	-2%	-1%	16%
Quintile 1	29%	25%	18%	17%	29%	82%	-1%	-2%	2%	-2%	-1%	14%
Quintile 2	30%	28%	22%	21%	30%	78%	-1%	-2%	2%	-1%	-1%	16%
Quintile 3	28%	28%	25%	25%	27%	68%	-1%	-2%	3%	-1%	-1%	17%
Quintile 4	23%	29%	28%	32%	23%	51%	-1%	-2%	3%	-1%	-1%	18%
Quintile 5	15%	28%	35%	47%	14%	37%	-1%	-1%	5%	0%	-1%	15%

Source: SCAG

GENTRIFICATION AND DISPLACEMENT

The 2016 RTP/SCS aims to balance future mobility and housing needs with economic, environmental and public health goals. The Plan's future investments will not only stimulate efficient networks and environmental friendly transportation systems, but they will also bring sustainable prosperity to the region by enhancing the movement of goods and people, accessibility to housing, transit and other amenities in Southern California.

Planners, policymakers and transportation scholars have agreed that public transportation investment, especially Transit-Oriented Development (TOD), has continuously and significantly changed its surrounding neighborhoods. Early studies of TOD were focused on urban formations and land use patterns adjacent to transit stations. Recently, however, achieving equity against adverse effects on low income and minority due to likely outcome of gentrification and displacement has emerged as a significant issue in the Southern California region.

Gentrification is sometimes defined as the transformation that takes place when a neighborhood moves from low value to high value. According to Lisa K. Bates in "Gentrification and Displacement Study: implementing an equitable inclusive development strategy in the context of gentrification" (May 2013), public investments to advance neighborhoods can be a form of revitalization and/or gentrification. Investments can bring positive changes by enhancing the aesthetics of a neighborhood. However, public investments leading neighborhood advancement can be a mixed blessing for residents previously residing in the area. Positively, they would be able to enjoy public service upgrades and new commercial venues as long as they can afford it. However negatively, involuntary residential displacement could result from the inevitable upward pressure on housing rents and property values. Rather than the intended revitalization of the neighborhood, planners and policy makers must be prepared to address the inevitable negative consequences associated with transit investment and expansion: gentrification and displacement.

Especially in the planning field, it is particularly painful to face a matter squarely in regard to consequences that were not intended as part of the original plan. However, understanding how much public investments can cause or intensify gentrification is extremely important. While public investments are designated to increase the investment potential of a neighborhood, there can also be unintended effects for vulnerable groups. Such investments can reduce the number of affordable housing units in neighborhoods and eventually create conflicts and inequality concerns.

This analysis examines the social equity impacts of neighborhoods that have experienced transit-induced revitalization in past years, hence reflecting the recent emerging interest in equitable transit-oriented development. Employing the 2000 Census and 2009-2013 American Community Survey (ACS), this analysis observes the patterns of change in demographic and socioeconomic data in the region. This analysis is intended to focus on observing transformations in neighborhoods in close proximity to the transit systems, and to further determine if the transit line has played a role as a catalyst in neighborhood changes from the social equity planning perspective.

Through this analysis, as well as the 2016 RTP/SCS, we expect our future land use strategy and transportation plans to become more equitable for every person in the region.

HIGH QUALITY TRANSIT AREA (HQTA) AND TRANSIT ORIENTED COMMUNITY (TOC):

RECENT GROWTH AND CHARACTERISTICS— EVIDENCE FROM 2000 CENSUS AND 2009–2013 ACS

The following research question was examined: will transit investments change the surrounding neighborhood? While patterns of neighborhood changes vary, the predominant pattern observed in TODs is one in which housing becomes more expensive, the neighborhood median income increases, and the observed vehicle ownership becomes more common. However, this pattern does not signify the growth in affluency among the original inhabitants residing in the neighborhood.

In some of the newly transit-rich neighborhoods, the research reveals how a new transit station can set in motion a cycle of unintended consequences in which core transit users—(e.g., renters and low-income households)—are priced out in favor of higher income, car-owning residents who are less likely to use public transit for commuting. Specifically, this analysis examines trends around rail transit and passenger rail stations versus other areas such as bus corridors. These transit-oriented neighborhoods, shown in **EXHIBITS 17 - 23** and referred to in this analysis as "Transit-Oriented Communities" (TOC), consist of half-mile zones that surround rail transit stations. In order to assess whether HQTAs and TOCs are moving toward more transit-oriented, sustainable and livable communities, SCAG applied Census Tract data processed from the 2000 Census and the 2009-2013 ACS, and calculated a set of performance indicators for both HQTA, TOC and other areas for comparison. The following performance indicators were developed for four categories: (1) Growth, (2) Economies, (3) Equity, and (4) Sustainability.

TABLE 57 shows the share of HQTA s and TOCs in SCAG, Communities of Concern (CoC), SB 535 Disadvantaged Communities (DAC), Environmental Justice Areas (EJA), Urban Areas and Rural Areas.

TABLE 57 Share of HQTA and TOC in Areas of Concern

Area	SCAG	Communities of Concern	SB 535 Disadvantaged Communities	Environmental Justice Areas	Urban Areas	Rural Areas
HQTA	1.27%	26.08%	2.09%	1.23%	9.63%	0.01%
TOC	0.25%	4.93%	0.48%	0.23%	1.86%	0.01%

Source: SCAG

Performance Indicator 1: Growth

As shown in the **TABLES 58 AND 59**, the following observations are interpreted:

- Population growth rates in non-HQTA areas are the highest, while growth in HQTAs appear to be much lower compared with the whole SCAG region and the non-HQTA areas. The growth in the TOCs and the remainder of HQTA areas are comparable to the growth in the full HQTA area.

- Similar to population growth, household growth in non-HQTAs has been higher than that of HQTAs or TOC areas. However, in contrast to the relatively much lower population growth rate observed from the previous table, household growth in the TOC area stands at an impressive 7.1 percent. This growth is more than two times than the growth observed in the HQTA and HQTAs that do not overlap with TOCs.

- Growth in population and households together clearly indicate that growth in TOC areas are primarily small size households.

TABLE 58 Population Growth (Unit: thousand)

| | Total | HQTA | Non HQTA | TOC | | | Rest HQTA (HQTA-TOC) |
				Total	Built before 2000	Built after 2000	
Population from 2000 Census	16,663	5,187	11,476	970	751	219	4,217
Population from 2009-13 ACS	18,227	5,283	12,944	998	771	227	4,286
Growth	9.4%	1.9%	12.8%	2.9%	2.7%	3.7%	1.6%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 59 Household Growth (Unit: thousand)

| | Total | HQTA | Non HQTA | TOC | | | Rest HQTA (HQTA-TOC) |
				Total	Built before 2000	Built after 2000	
Household from 2000 Census	5,458	1,671	3,787	312	242	70	1,360
Household from 2009-13 ACS	5,825	1,721	4,104	334	260	73	1,388
Growth	6.7%	3.0%	8.4%	7.1%	7.4%	4.3%	2.1%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

High Quality Transit Areas (HQTA)   Transit Oriented Communities (TOC)

Source: SCAG, 2015

EXHIBIT 18 2012 High Quality Transit Areas (HQTA) and Transit Oriented Community (TOC) in the areas of Communities of Concern in the SCAG region

High Quality Transit Areas (HQTA)
Transit Oriented Communities (TOC)
Communities of Concern (COC)
HQTA within COC
TOC within COC

Source: SCAG, 2015

EXHIBIT 19 2012 High Quality Transit Areas (HQTA) and Transit Oriented Community (TOC) in the areas of Disadvantaged areas in SCAG region

Legend:
- High Quality Transit Areas (HQTA)
- Transit Oriented Communities (TOC)
- Disadvantaged Communities (DAC)
- HQTA within DAC
- TOC within DAC

Source: SCAG, 2015

EXHIBIT 20 2012 High Quality Transit Areas (HQTA) and Transit Oriented Community (TOC) in the areas of Environmental Justice in SCAG region
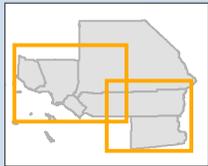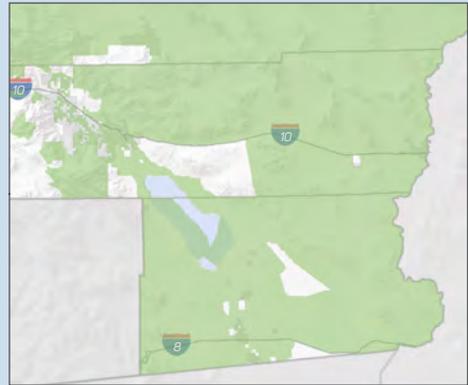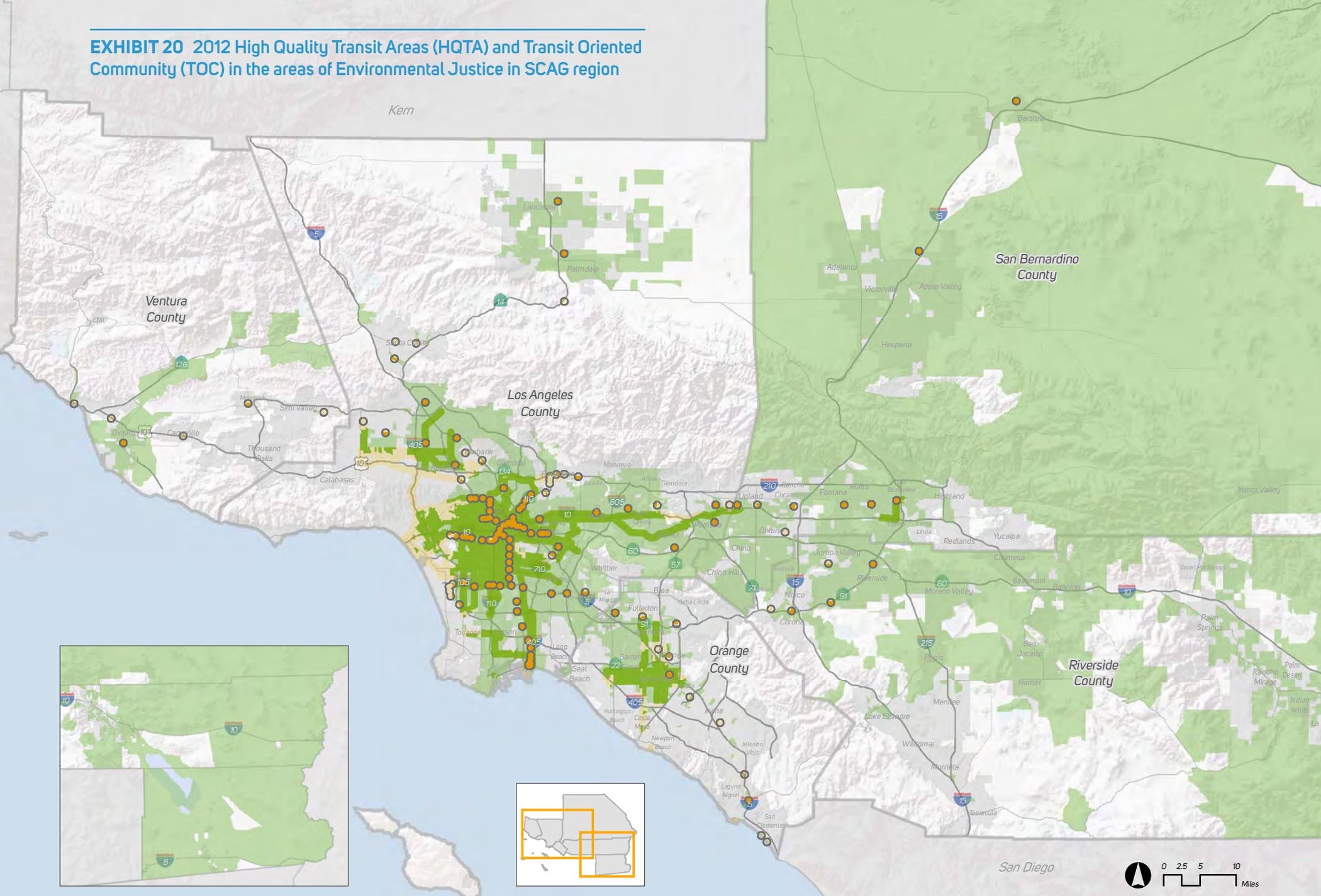
High Quality Transit Areas (HQTA)
Transit Oriented Communities (TOC)
Environmental Justice Area (EJ)
HQTA within EJ Area
TOC within EJ Area

Source: SCAG, 2015

EXHIBIT 21 2012 High Quality Transit Areas (HQTA) and Transit Oriented Community (TOC) in Urban areas in SCAG region
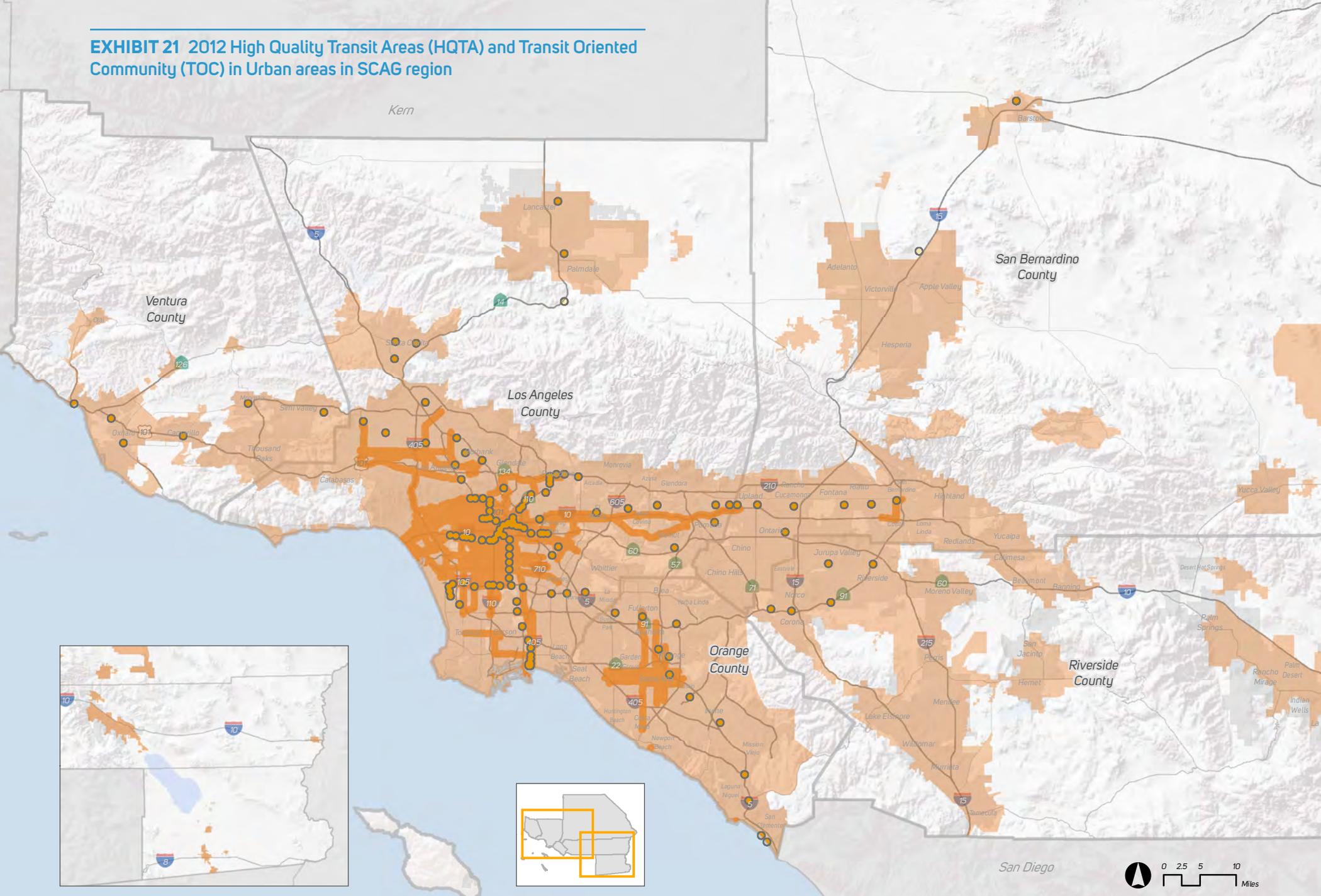
Legend:
- High Quality Transit Areas (HQTA)
- Transit Oriented Communities (TOC)
- Urban Area
- HQTA within Urban Area
- TOC within Urban Area

Source: SCAG, 2015

EXHIBIT 22 2012 High Quality Transit Areas (HQTA) and Transit Oriented Community (TOC) in Rural areas in SCAG region

High Quality Transit Areas (HQTA)
HQTA within Rural Area
Transit Oriented Communities (TOC)
TOC within Rural Area
Rural Area
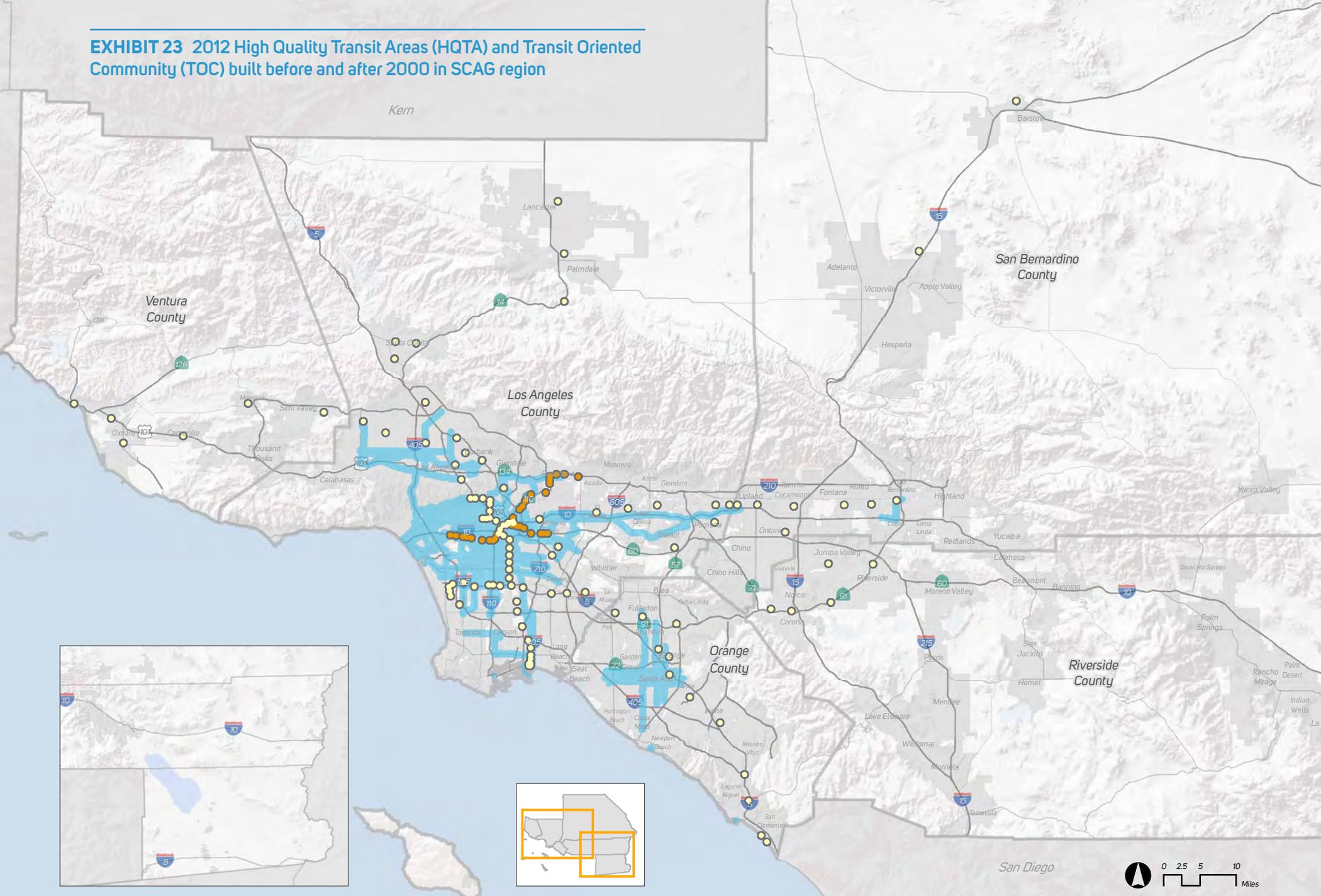
Source: SCAG, 2015

High Quality Transit Areas (HQTA)   Transit Oriented Communities (TOC)

TOC built before 2000   TOC built after 2000

Source: SCAG, 2015

Performance indicator 2: Economies (TABLES 60 THROUGH 65)

- Comparing growth trends in TOC areas with non-TOC areas, the growth rate of workers is exceedingly higher in TOCs. This seemingly reflects the increase in the number of workers that are residing in the TOC areas.

- Median household income in all areas experienced negative growth. Median household income in the TOC areas is comparably less than that of non-TOC areas, yet it also experienced the smallest negative growth compared with the other areas in both periods of observation.

- Median gross rent in all areas increased. All areas show similar rates of growth.

- Median house value for owners increased more in TOC and HQTA than other areas.

- Between 2000 and 2009-2013, households living in rented homes increased more than twice in all areas. Growth in HQTAs appeared to be much smaller than other areas.

TABLE 60 Workers (Unit: thousand)

	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Built before 2000	Built after 2000	
Workers from 2000 Census	6,875	1,993	4,882	347	269	78	1,646
Workers from 2009-13 ACS	7,884	2,334	5,549	432	337	95	1,902
Growth	14.7%	17.1%	13.7%	24.5%	25.3%	21.7%	15.6%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 61 Median Household Income

	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Built before 2000	Built after 2000	
2000 Census	$65,968	$54,237	$76,783	$46,598	$48,022	$43,116	$53,195
2009-2013	$59,561	$49,793	$68,780	$44,005	$44,143	$41,803	$49,395
Growth	-9.7%	-8.1%	-9.5%	-5.8%	-8.1%	-3.0%	-7.6%

SCAG staff processed 2000 Census and 2009-13 ACS data
Note: all incomes show 2013 inflation-adjusted US dollars

TABLE 62 Median Gross Rent

Median Gross Rent	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Before 2000	After 2000	
2000 Census	$1,054	$956	$1,154	$888	$897	$854	$949
2009-2013	$1,240	$1,128	$1,348	$1,057	$1,070	$1,005	$1,125
Growth	17.6%	18.1%	16.8%	19.1%	19.4%	17.6%	18.6%

TABLE 63 Median House Value for Owner

Median House Value for Owner	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Before 2000	After 2000	
2000 Census	$275,964	$268,033	$284,556	$250,509	$249,998	$250,149	$269,933
2009-2013	$376,761	$379,583	$373,672	$356,365	$349,336	$385,441	$381,287
Growth	36.5%	41.6%	31.3%	42.3%	39.7%	54.1%	41.3%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data
Note: all values show 2013 inflation-adjusted US dollars.

TABLE 64 Housing Tenure: Home Owner (Unit: thousand)

Owner	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Built before 2000	Built after 2000	
2000 Census	2,998	583	2,415	80	60	20	503
2009-2013	3,127	583	2,544	84	63	21	500
Growth	4.3%	0.0%	5.3%	5.0%	5.0%	5.0%	-0.6%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 65 Housing Tenure: Renter (Unit: thousand)

Renter	Total	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
				Total	Built before 2000	Built after 2000	
2000 Census	2,461	1,088	1,373	229	180	49	856
2009-2013	2,698	1,138	1,559	251	198	53	888
Growth	9.6%	4.6%	13.5%	9.6%	10.0%	8.2%	4%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

Performance indicator 3: Equity & Ethnicity and Sustainability (TABLE 66-69)

- There is no predominant difference in age distribution between the SCAG region and TOC areas for both 2000 and 2009-2013. However, the percentage of children has decreased more over this period in TOC areas.

- The proportion of the Hispanic population is observed to be higher in TOC areas and in HQTAs. However, the growth of the Hispanic population in TOC areas and HQTAs was much lower than the greater SCAG region.

- Non-Hispanic African American population decreased in TOC and HQTA, while increases were seen for this same group in non-HQTAs.

- The growth rates of Non-Hispanic Asian population in TOC and HQTA appear to be much lower compared with other areas.

- Households without vehicles decreased in both the greater SCAG region and in TOCs.

- Households with more than one vehicle in TOCs increased nearly 50 percent more than the greater SCAG region.

Based on the four indicators, variables were selected to assess the statistical significance of the growth from 2000 to 2009-2013 among TOCs, HQTAs and other areas , as shown in **TABLE 70**. These indicators include: growth of population, household, median household income, median gross rent, household without cars, seniors, renters and the Hispanic population.

Between TOCs and SCAG, all variables except the growth of the overall population showed significant differences. HQTAs and non-TOC HQTA areas, however, show a difference only for median household income and median gross rent. Interestingly, in TOCs, median household income has decreased less and median gross rent has increased more than was seen in the greater region. This may signify that more affluent households are moving into TOCs. Statistical testing (T-test) between TOCs that were built before 2000 and after 2000 was also conducted. The results show no statistical significance in terms of the difference between these two areas.

Although further investigation is needed to conclude the occurrence of gentrification and displacement, these two growth trends may serve as the initial evidence of likely gentrification and displacement. Planners and policy makers should monitor and ensure the plausibility of their public investments to prevent and mitigate the manifestation of negative consequences that policies might bring. Furthermore, this study cannot deny the limitations of the growth rate interpretations due to the lack of statistical significance delivered by T-Test results. Margin of errors (MOE) are carried in all 2009-2013 ACS data, due to sample survey methods. Therefore, it is necessary to take MOE into account for the completion of more accurate statistical tests.

TABLE 66 Share of Population by Age and Hispanic

		SCAG	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
					Total	Before 2000	After 2000	
2000	< 5	7.7%	8.4%	7.5%	8.7%	8.8%	8.3%	8.3%
	5 to 14	16.3%	16.1%	16.4%	16.4%	16.5%	16.3%	16.1%
	15 to 64	65.8%	66.7%	65.5%	66.7%	66.9%	66.2%	66.7%
	> 65	10.1%	8.8%	10.7%	8.2%	7.8%	9.2%	9.0%
	% Hispanic	40.3%	53.3%	34.5%	58.0%	56.9%	61.8%	52.2%
	% African American	7.1%	11.1%	5.3%	11.6%	10.6%	14.8%	11.0%
	% Asian	10.1%	10.8%	9.8%	10.4%	10.8%	9.0%	10.9%
2009-2013	< 5	6.7%	7.0%	6.6%	6.8%	6.9%	6.5%	7.1%
	5 to 14	13.8%	13.1%	14.1%	13.0%	13.2%	12.3%	13.1%
	15 to 64	68.2%	70.0%	67.5%	71.0%	71.0%	70.9%	69.7%
	> 65	11.3%	10.0%	11.9%	9.2%	8.9%	10.4%	10.1%
	% Hispanic	45.6%	55.0%	41.7%	59.0%	58.3%	61.4%	54.0%
	% African American	6.4%	9.4%	5.2%	9.3%	8.8%	11.2%	9.4%
	% Asian	12.2%	12.5%	12.1%	12.0%	12.2%	11.2%	12.7%
GROWTH	< 5	-5.1%	-14.5%	-0.3%	-19.7%	-19.8%	-19.5%	-13.2%
	5 to 14	-7.6%	-17.6%	-3.1%	-18.8%	-17.8%	-22.1%	-17.3%
	15 to 64	13.3%	6.9%	16.2%	9.5%	9.0%	10.9%	6.3%
	> 65	22.6%	15.0%	25.4%	16.6%	16.7%	16.4%	14.7%
	% Hispanic	23.6%	5.1%	36.4%	4.6%	5.2%	2.8%	5.3%
	% African American	-1.6%	-13.9%	9.9%	-17.2%	-15.3%	-22.0%	-13.1%
	% Asian	32.7%	18.7%	39.7%	18.9%	16.6%	28.3%	18.6%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 67 Share of Household by Number of Vehicles: Homeowner

	# of Vehicles	SCAG	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
					Total	Built before 2000	Built after 2000	
2000	0	3.9%	6.1%	3.4%	7.3%	7.3%	7.0%	5.9%
	1	25.9%	29.9%	24.9%	30.3%	30.3%	29.8%	29.8%
	2	44.4%	40.2%	45.4%	38.8%	38.8%	38.9%	40.4%
	3+	25.8%	23.8%	26.3%	23.5%	23.5%	24.3%	23.9%
2009-2013	0	2.7%	3.8%	2.4%	4.7%	4.7%	4.2%	3.7%
	1	22.6%	26.3%	21.7%	27.0%	27.0%	26.1%	26.2%
	2	41.8%	39.5%	42.3%	38.7%	38.7%	39.1%	39.7%
	3+	32.9%	30.4%	33.5%	29.7%	29.7%	30.7%	30.5%
GROWTH	0	-28.6%	-37.9%	-24.5%	-34.0%	-34.0%	-38.2%	-38.6%
	1	-9.0%	-12.0%	-8.1%	-7.8%	-7.8%	-8.5%	-12.7%
	2	-1.7%	-1.7%	-1.7%	3.4%	3.4%	4.9%	-2.5%
	3+	33.0%	27.3%	34.2%	30.9%	30.9%	31.6%	26.8%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 68 Share of Household by Number of Vehicles: Renter

	# of Vehicles	SCAG	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
					Total	Built before 2000	Built after 2000	
2000	0	17.4%	23.3%	12.8%	32.5%	33.6%	28.8%	20.7%
	1	46.1%	47.2%	45.3%	44.0%	43.6%	45.3%	48.0%
	2	28.4%	23.5%	32.3%	18.8%	18.4%	20.4%	24.8%
	3+	8.1%	6.1%	9.6%	4.7%	4.5%	5.5%	6.4%
2009-2013	0	13.4%	18.3%	9.9%	25.2%	25.7%	23.2%	16.3%
	1	44.0%	46.8%	41.9%	46.5%	46.9%	45.3%	46.8%
	2	31.7%	27.1%	35.0%	22.3%	21.7%	24.6%	28.5%
	3+	10.9%	7.9%	13.2%	6.0%	5.7%	6.9%	8.4%
GROWTH	0	-15.4%	-17.8%	-11.9%	-16.4%	-17.0%	-13.9%	-18.4%
	1	4.5%	3.7%	5.2%	14.4%	16.5%	7.0%	1.1%
	2	22.2%	20.7%	23.1%	28.4%	28.3%	28.9%	19.1%
	3+	48.7%	35.7%	55.1%	36.8%	37.4%	34.9%	35.5%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 69 Share of Household by Number of Vehicles: Total Household (Homeowner + Renter)

	Total	SCAG	HQTA	Non HQTA	TOC			Rest HQTA (HQTA-TOC)
					Total	Built before 2000	Built after 2000	
2000	0	10.0%	17.3%	6.8%	26.1%	27.0%	22.8%	15.3%
	1	35.0%	41.1%	32.3%	40.4%	40.2%	41.4%	41.3%
	2	37.2%	29.3%	40.6%	24.0%	23.5%	25.7%	30.6%
	3+	17.8%	12.3%	20.3%	9.5%	9.4%	10.1%	12.9%
2009-2013	0	7.7%	13.4%	5.3%	20.1%	20.5%	18.4%	11.8%
	1	32.5%	39.8%	29.4%	41.7%	41.9%	40.9%	39.4%
	2	37.1%	31.3%	39.5%	26.4%	25.9%	28.2%	32.5%
	3+	22.7%	15.5%	25.8%	11.9%	11.7%	12.5%	16.3%
GROWTH	0	-18.2%	-20.3%	-15.9%	-17.7%	-18.3%	-14.9%	-21.3%
	1	-1.0%	-0.3%	-1.3%	10.2%	11.9%	4.1%	-2.6%
	2	6.5%	10.0%	5.4%	18.0%	18.7%	15.9%	8.5%
	3+	36.2%	30.0%	37.8%	33.0%	33.7%	30.8%	29.5%

Source: SCAG staff processed 2000 Census and 2009-13 ACS data

TABLE 70 T-test of the Selected Variables between TOC and Other Areas for the Growth from 2000 to 2009-2013

Variables	TOC	TOC vs. SCAG		TOC vs. HQTA		TOC vs. Rest HQTA (HQTA-TOC)	
	Growth	Growth	p-value	Growth	p-value	Growth	p-value
Hispanic	4.6%	23.6%	***	5.1%		5.3%	
Seniors (+ 65)	16.6%	22.6%	***	15.0%		14.7%	
Household w/o cars	-17.7%	-18.2%	***	-20.3%		-21.3%	
Median Household Income	-5.8%	-9.7%	***	-8.1%	*	-7.6%	*
Median Gross Rent	19.1%	17.6%	***	18.1%	*	18.6%	*
Population	2.9%	9.4%		1.9%		1.6%	
Household	7.1%	6.7%	**	3.0%		2.1%	
Renter	7.8%	9.6%	*	4.6%		3.7%	

Source: SCAG

EVIDENCE OF LIKELY GENTRIFICATION/DISPLACEMENT IN TOC AREAS

As shown above, trends observed in key indicators show likely evidence of gentrification and displacement from the 2000 Census and 2009-2013 ACS in TOCs, although this determination is still inconclusive. SCAG recognizes the risk of undesirable community transformations that transit investments are capable of stimulating. Therefore, the call is made for additional focus of local jurisdictions and implementation agencies when investments are being planned. SCAG will continue to monitor the trends of the aforementioned indicators in the TOC areas in the years to come. The Environmental Justice Toolbox in this Appendix provides specific strategies to combat displacement for local jurisdictions encountering gentrification.

Our finding is consistent with what Chapple et al. (2015) found in their report prepared for the California Air Resources Board and the California Environmental Protection Agency. They utilized Census 1990, 2000 and ACS 2009-2013 for Los Angeles County, and defined a census tract as gentrified if the tract has above the county average for the following four variables: Percentage of Residents with Bachelor's Degree or Higher, Median

Household Income, Percentage of Non-Hispanic White Residents, and Median Gross Rent. The study found that the census tracts that are included in TOCs are more likely to experience gentrification.

In addition to the residential gentrification and displacement, we may also need to monitor industrial displacement, especially around downtown Los Angeles as we have seen increasing developments of loft residences and new condos in the place of industrial land uses. When industrial buildings are replaced with residential properties, it may cause a loss of jobs and result in a negative impact on the region's economy.

REGIONAL EMISSIONS IMPACT ANALYSIS

Exposure to air pollutants is an environmental justice issue due to the disproportionate share of minority and low-income populations living in close proximity to freeways and heavily traveled corridors, particularly near port and logistics activities. This exposure to unhealthy air could result in many premature deaths and many children with asthma and respiratory symptoms. The SCAG region is at particular risk for health impacts due to air quality, as more than half of all Americans exposed to $PM_{2.5}$ pollution exceeding the national standard reside in the SCAG region.

TABLE 71 Distribution of Air Quality Monitoring Stations in SCAG Region and Environmental Justice Areas

Stations	Region	EJ	DAC	CoC	Urban	Rural	EJ (%)	DAC (%)	CoC (%)	Urban (%)	Rural (%)
$PM_{2.5}$	32	23	12	6	28	4	72%	38%	19%	88%	13%
Ozone	52	31	21	8	44	8	60%	40%	15%	85%	15%
Total	84	54	33	14	72	12	64%	39%	17%	86%	14%

Source: SCAG, California Air Resources Board

There are 84 air quality monitoring stations around the SCAG region operated by SCAQMD, including 32 stations for PM2.5 and 52 stations for ozone. AQMD issues daily air quality forecasts. **TABLE 71** shows the stations within EJA, DAC, CoC and other areas, that are being included here to demonstrate how air quality is measured for various areas of concern in the region.

Air pollution comes from many different sources, and can be classified into two types: ozone pollution and particulate matter. Ozone pollution takes a gaseous form and is generated as vapor emitted from fuel commonly used in vehicles, industrial processes, etc. Ozone is formed by the reaction between volatile organic compounds (VOC) and oxides of nitrogen (NO_X) in the presence of sunlight. Ozone negatively impacts the respiratory system. Particulate matter (PM_{10} and $PM_{2.5}$) are very fine particles made up of materials such as soot, ash, chemicals, metals and fuel exhaust that are released into the atmosphere. Particulate pollution has been linked to significant health problems, including aggravated asthma, increases in adverse respiratory problems, chronic bronchitis, decreased lung function and premature death.

Transportation projects can have both positive or negative impacts on the environment. On the one hand, investments can cause travelers to shift to less polluting modes (e.g., bus, rail transit, carpooling or passenger rail). On the other hand, investments that increase traffic on a particular facility usually degrade air quality in the immediate vicinity of that facility.

In order to evaluate the environmental justice impacts of the 2016 RTP/SCS, this analysis examines the air pollutant emissions that result from the Plan at the regional level, neighborhood level (i.e. TAZ), and for areas of concern. SCAG's air pollutant emissions analysis is based on emission estimates for pollutants that have localized health effects: carbon monoxide (CO) and particulate matter (PM). Analysis is also conducted for PM exhaust emissions from heavy-duty vehicles: an indicator of diesel toxic air contaminants.

METHODOLOGY

Since ambient pollutant concentration levels are directly linked to localized emissions and cannot be easily estimated, the geographic emissions distribution analysis presented here focuses on pollutants that tend to have localized effects. These are generally proportionate to emissions—carbon monoxide (CO) and fine particulate matter (PM_{10} and $PM_{2.5}$). The results are computed based on the average emissions (tons per day) at the TAZ level. The analysis does not cover pollutants that do not have localized effects proportionate to emissions, but are regionally distributed as a result of chemical interactions, photochemical reactions and meteorology (VOC, NO_X, and SO_X).

RESULTS

In the SCAG region, there are great improvements in the reductions of CO and $PM_{2.5}$ emissions that are projected to occur between the Base Year of the Plan, 2012, and 2040. As the result, the percentage of the overall population that resides in areas where CO and PM emissions improve (are reduced) in 2040 increases considerably as well.

TABLE 72 and **TABLE 73** display the difference in CO and PM emissions between 2012 and 2040 for the Baseline scenario. Also presented is the difference in CO and PM resulting from the Plan (Baseline minus Plan) in 2040. Specifically, CO and PM emissions improve in the SCAG region by 79 percent and 27 percent, respectively, when comparing 2012 to the 2040 Baseline. When considering the impacts of the 2016 RTP/SCS, the Plan will result in an additional nine percent and six percent reduction (as compared to the Baseline) in 2040.

Most areas of concern in the SCAG region (EJAs, DACs, and CoCs) display an equal or greater improvement from 2012 to the 2040 Baseline in CO and PM emissions as compared to the region as a whole. This is not the case, however, for Rural Areas, where the reduction in CO from 2012 to 2040 Baseline is less than the improvement incurred at the regional level. The same can be said for DACs, where the level of reduction in PM2.5 from 2012 to 2040 Baseline is less than the regional total.

TABLE 72 CO Emission Reductions

	Region	EJA	DAC	CoC	Urban	Rural
2012 Base Year vs. 2040 Baseline	79%	79%	79%	80%	80%	72%
Baseline vs. Plan	9%	9%	9%	9%	10%	7%

Source: SCAG

TABLE 73 PM $_{2.5}$ Emission Reductions

	Region	EJA	DAC	CoC	Urban	Rural
2012 Base Year vs. 2040 Baseline	27%	28%	30%	25%	25%	33%
Baseline vs. Plan	6%	6%	5%	6%	6%	3%

Source: SCAG

TABLE 74 Population Share by CO Emission Change Areas Resulting from the Plan (vs. Baseline)

	Region (2012)	Areas with CO Reductions	Areas with CO Increases
Region	100%	85%	13%
EJA	68%	86%	11%
DAC	35%	88%	10%
CoC	23%	86%	12%
Urban	97%	85%	12%
Rural	3%	69%	25%

Source: SCAG

TABLE 75 Population Share by PM$_{2.5}$ Emission Change Areas Resulting from the Plan (vs. Baseline)

	Region (2012)	Areas with PM Reductions	Areas with PM Increases
Region	100%	81%	16%
EJA	68%	83%	15%
DAC	35%	85%	13%
CoC	23%	84%	14%
Urban	97%	82%	16%
Rural	3%	63%	31%

Source: SCAG

TABLE 74 provides additional information on the population who live in areas that will experience reductions of PM and CO as a result of the Plan. For instance, 85 percent of the entire population in the region will live in areas that will have decreases in CO Emissions resulting from the 2016 RTP/SCS. When looking at our areas of concern, 86 percent of the population in EJAs will reside in areas where CO emissions show improvements from the Plan. Similarly in DACs, 88 percent of the population would be residing in areas where improvements in CO emissions are projected. In CoCs, 86 percent of the residents will live in areas where CO emissions are reduced as a result of the Plan.

TABLE 75 shows that 81 percent of the region's population will be living in areas that incur reductions in PM$_{2.5}$ emissions as a result of the Plan. For EJAs, DACs and CoCs, more than 83 percent of the population will be living in areas that benefit from the Plan.

Although improvements are significant across the region as a result of the Plan, some areas will incur negative impacts. **TABLES 76 -79** present information on the population who will be residing in areas that will experience increases in PM and CO emissions as a result of the Plan. Information is presented for each race/ethnicity and is broken down by income quintile. In assessing impacts to environmental justice groups, it is important to compare the concentration of these communities with the region as a whole. In instances where there is a significantly higher proportion of minority population living in these areas, there could potentially be disproportion environmental justice impacts.

Looking into the figures, the concentration of households by race/ethnicity and income quintile for areas that incur improvements in CO and PM emissions is very similar to that of the greater region. Within areas that show increases in CO and PM emissions, Hispanic and African American households by income quintile have the same or show a marginally higher concentration (within one percent) than is seen in the region as a whole. **EXHIBITS 24 - 27** display the geographic location of areas that show improvements in CO and PM emissions, both from 2012 to the 2040 Baseline and from the Baseline to the Plan.

Building on this analysis, the next section will look into the impacts of emissions for areas that are in close proximity to highways and highly traveled corridors.

TABLE 76 Distribution of EJ population within CO Emission Change between 2012 Base Year and 2040 Baseline

Households	CO Better	CO Worse	Entire Region
Hispanic Quintile 1	10%	11%	10%
White Quintile 1	4%	5%	5%
African American Quintile 1	2%	2%	2%
Native American Quintile 1	0%	0%	0%
Asian Quintile 1	3%	2%	3%
Other Race Quintile 1	1%	1%	1%
Hispanic Quintile 2	11%	12%	11%
White Quintile 2	5%	5%	5%
African American Quintile 2	1%	2%	1%
Native American Quintile 2	0%	0%	0%
Asian Quintile 2	3%	1%	3%
Other Race Quintile 2	1%	1%	1%
Hispanic Quintile 3	10%	11%	10%
White Quintile 3	5%	6%	5%
African American Quintile 3	1%	2%	1%
Native American Quintile 3	0%	0%	0%
Asian Quintile 3	3%	2%	3%
Other Race Quintile 3	1%	1%	1%
Hispanic Quintile 4	8%	9%	8%
White Quintile 4	6%	6%	6%
African American Quintile 4	1%	2%	1%
Native American Quintile 4	0%	0%	0%
Asian Quintile 4	4%	3%	4%
Other Race Quintile 4	0%	0%	0%
Hispanic Quintile 5	5%	5%	5%
White Quintile 5	8%	6%	8%
African American Quintile 5	1%	1%	1%
Native American Quintile 5	0%	0%	0%
Asian Quintile 5	4%	3%	4%
Other Race Quintile 5	0%	0%	0%

Source: SCAG

TABLE 77 Distribution of EJ Population within PM2.5 Emission Change between 2012 Base Year and 2040 Baseline

Households	$PM_{2.5}$ Better	$PM_{2.5}$ Worse	Entire Region
Hispanic Quintile 1	10%	10%	10%
White Quintile 1	4%	5%	5%
African American Quintile 1	2%	2%	2%
Native American Quintile 1	0%	0%	0%
Asian Quintile 1	4%	2%	3%
Other Race Quintile 1	1%	1%	1%
Hispanic Quintile 2	11%	12%	11%
White Quintile 2	4%	5%	5%
African American Quintile 2	1%	2%	1%
Native American Quintile 2	0%	0%	0%
Asian Quintile 2	3%	2%	3%
Other Race Quintile 2	1%	1%	1%
Hispanic Quintile 3	9%	11%	10%
White Quintile 3	5%	6%	5%
African American Quintile 3	1%	1%	1%
Native American Quintile 3	0%	0%	0%
Asian Quintile 3	4%	2%	3%
Other Race Quintile 3	1%	1%	1%
Hispanic Quintile 4	7%	8%	8%
White Quintile 4	6%	7%	6%
African American Quintile 4	1%	1%	1%
Native American Quintile 4	0%	0%	0%
Asian Quintile 4	4%	3%	4%
Other Race Quintile 4	0%	0%	0%
Hispanic Quintile 5	5%	5%	5%
White Quintile 5	8%	7%	8%
African American Quintile 5	1%	1%	1%
Native American Quintile 5	0%	0%	0%
Asian Quintile 5	5%	3%	4%
Other Race Quintile 5	0%	0%	0%

Source: SCAG

TABLE 78 Distribution of EJ Population within CO Emission Change between Baseline and Plan in 2040

Households	CO Better	CO Worse	Entire Region
Hispanic Quintile 1	10%	10%	10%
White Quintile 1	5%	4%	5%
African American Quintile 1	2%	2%	2%
Native American Quintile 1	0%	0%	0%
Asian Quintile 1	3%	3%	3%
Other Race Quintile 1	1%	1%	1%
Hispanic Quintile 2	11%	12%	11%
White Quintile 2	5%	5%	5%
African American Quintile 2	1%	1%	1%
Native American Quintile 2	0%	0%	0%
Asian Quintile 2	3%	2%	3%
Other Race Quintile 2	1%	1%	1%
Hispanic Quintile 3	10%	11%	10%
White Quintile 3	5%	5%	5%
African American Quintile 3	1%	1%	1%
Native American Quintile 3	0%	0%	0%
Asian Quintile 3	3%	3%	3%
Other Race Quintile 3	1%	1%	1%
Hispanic Quintile 4	8%	9%	8%
White Quintile 4	6%	6%	6%
African American Quintile 4	1%	1%	1%
Native American Quintile 4	0%	0%	0%
Asian Quintile 4	4%	3%	4%
Other Race Quintile 4	0%	1%	0%
Hispanic Quintile 5	5%	5%	5%
White Quintile 5	8%	6%	8%
African American Quintile 5	1%	1%	1%
Native American Quintile 5	0%	0%	0%
Asian Quintile 5	4%	4%	4%
Other Race Quintile 5	0%	0%	0%

Source: SCAG

TABLE 79 Distribution of EJ Population within $PM_{2.5}$ Emission Change between Baseline and Plan in 2040

Households	$PM_{2.5}$ Better	$PM_{2.5}$ Worse	Entire Region
Hispanic Quintile 1	10%	10%	10%
White Quintile 1	5%	4%	5%
African American Quintile 1	2%	2%	2%
Native American Quintile 1	0%	0%	0%
Asian Quintile 1	4%	3%	3%
Other Race Quintile 1	1%	1%	1%
Hispanic Quintile 2	11%	12%	11%
White Quintile 2	5%	4%	5%
African American Quintile 2	1%	1%	1%
Native American Quintile 2	0%	0%	0%
Asian Quintile 2	3%	2%	3%
Other Race Quintile 2	1%	1%	1%
Hispanic Quintile 3	10%	11%	10%
White Quintile 3	5%	5%	5%
African American Quintile 3	1%	1%	1%
Native American Quintile 3	0%	0%	0%
Asian Quintile 3	3%	3%	3%
Other Race Quintile 3	1%	1%	1%
Hispanic Quintile 4	8%	9%	8%
White Quintile 4	6%	6%	6%
African American Quintile 4	1%	1%	1%
Native American Quintile 4	0%	0%	0%
Asian Quintile 4	4%	4%	4%
Other Race Quintile 4	0%	0%	0%
Hispanic Quintile 5	5%	6%	5%
White Quintile 5	8%	7%	8%
African American Quintile 5	1%	1%	1%
Native American Quintile 5	0%	0%	0%
Asian Quintile 5	4%	4%	4%
Other Race Quintile 5	0%	0%	0%

Source: SCAG

EXHIBIT 24 CO Emission Change
(2012 Base Year to 2040 Baseline)

Ventura County

San Bernardino County

Los Angeles County

Riverside County

Orange County

San Diego

San Bernardino County

Riverside County

Imperial County
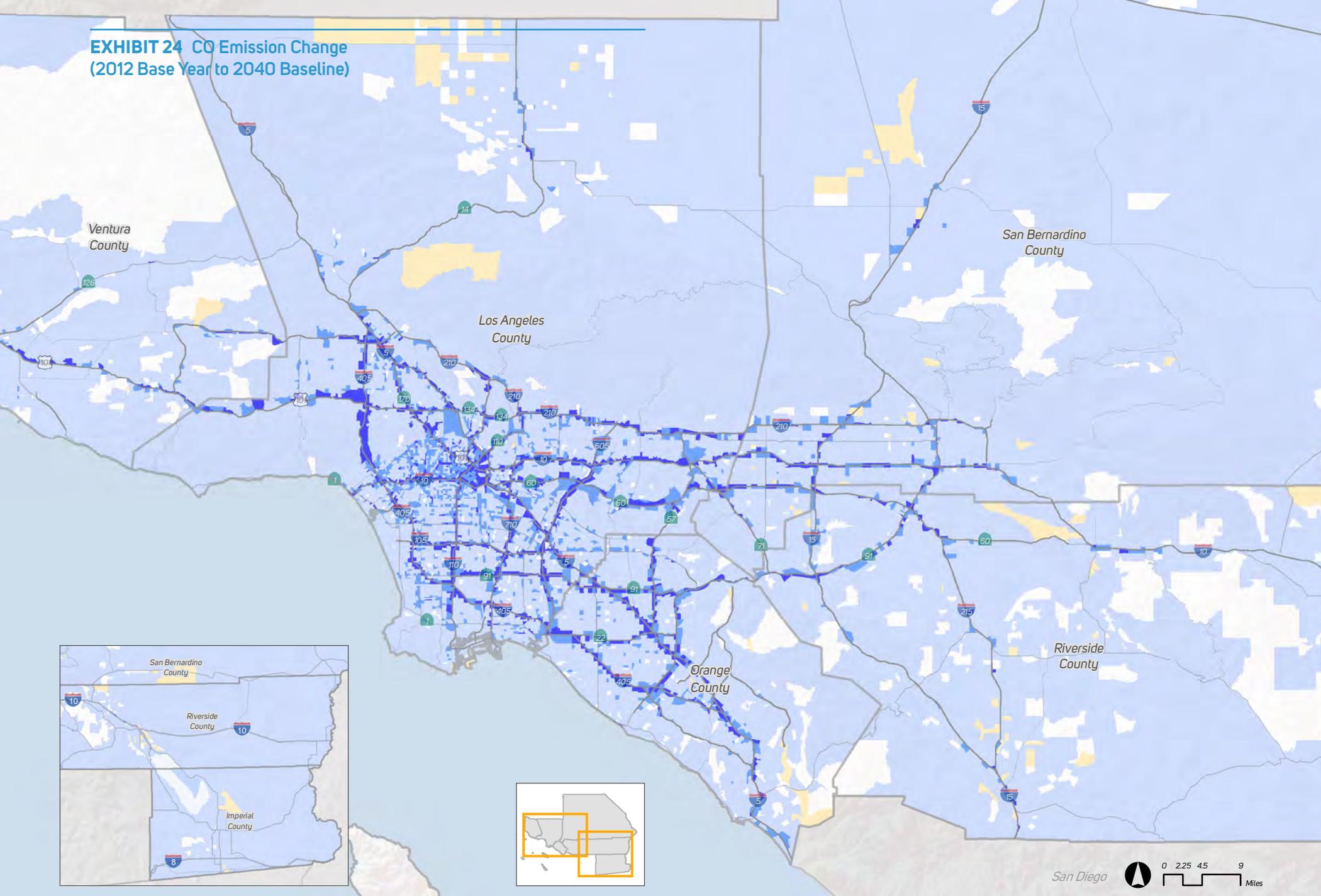
County Boundaries   Freeway

Worsen

Improved

Source: SCAG, 2015

EXHIBIT 25 CO Emission Change
(2040 Baseline to 2040 Plan)
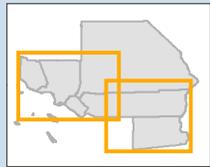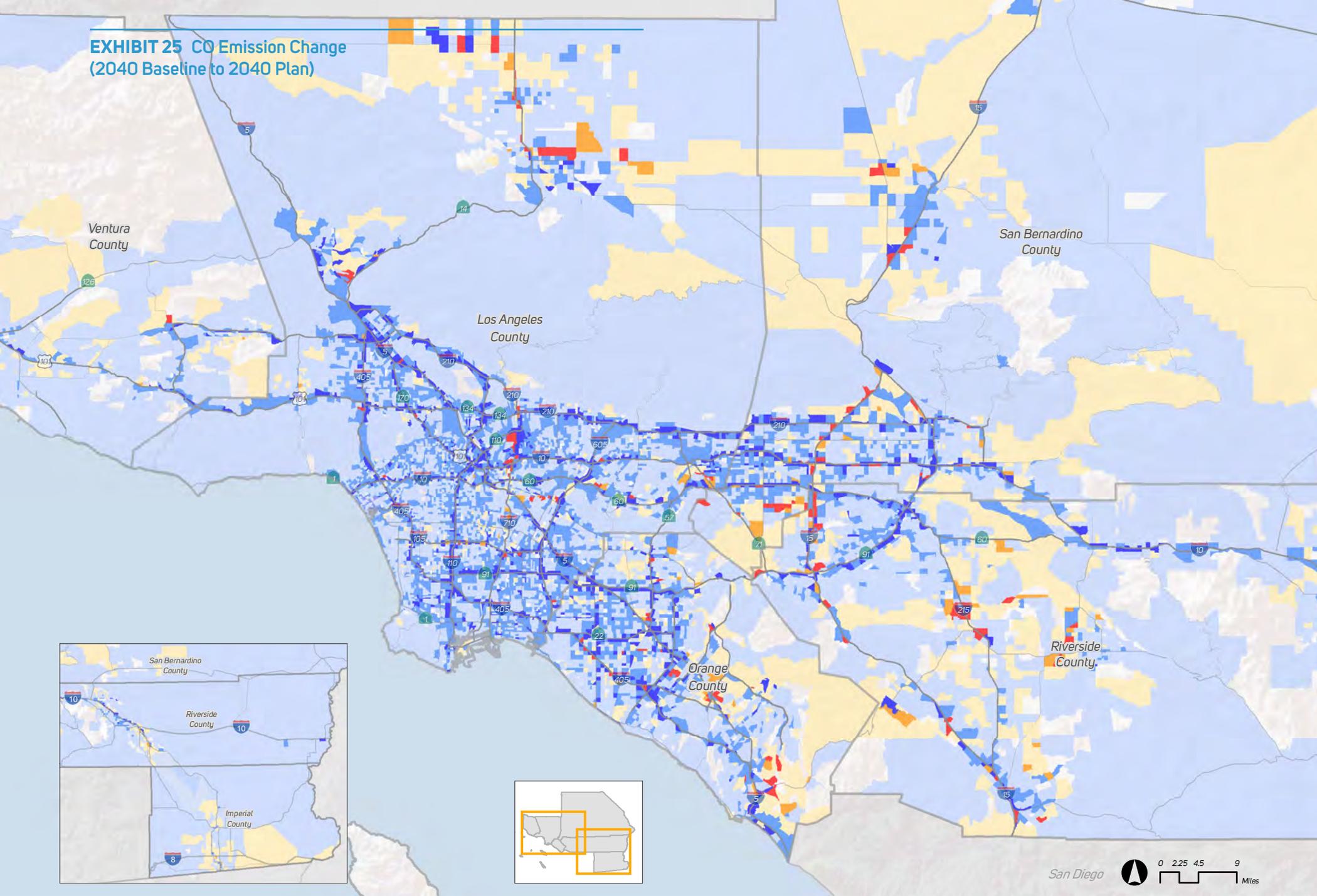
Ventura County

San Bernardino County

Los Angeles County

Orange County

Riverside County

San Diego

San Bernardino County

Riverside County

Imperial County

County Boundaries   Freeway

Worsen

Improved

Source: SCAG, 2015

EXHIBIT 26 PM$_{2.5}$ Emission Change
(2012 Base Year to 2040 Baseline)

Ventura County

San Bernardino County

Los Angeles County

Riverside County

Orange County

San Diego

San Bernardino County

Riverside County

Imperial County

County Boundaries Freeway

Worsen

Improved

0 2.25 4.5 9 Miles

Source: SCAG, 2015

EXHIBIT 27 PM$_{2.5}$ Emission Change
(2040 Baseline to 2040 Plan)

Ventura County

San Bernardino County

Los Angeles County

Riverside County

Orange County

San Diego

San Bernardino County

Riverside County

Imperial County

County Boundaries   Freeway

Worsen

Improved

0 2.25 4.5 9
Miles

Source: SCAG, 2015

EMISSIONS IMPACTS ALONG FREEWAYS AND HIGHLY TRAVELED CORRIDORS (I.E. HIGH VOLUME ROADWAYS)

Exposure levels to PM and CO are often higher in freeway adjacent areas than is seen elsewhere in the region. The average exposure to the nearby residents, workers and other sensitive receptors located in the freeway adjacent areas can be much higher than other places in the region if measured by a concentration index (for example, emissions divided by land area).

METHODOLOGY

SCAG prepared additional analyses to highlight the emissions exposure in areas within 500 feet of freeways and high volume roads. Steps included:

- Estimate the distribution of environmental justice groups within 500 feet of freeways

- Estimate acreages, population and households within (1) 500 feet of freeways and (2) the overlapped area of HQTAs and 500 feet of freeways

- Estimate the CO and PM emissions within (1) 500 feet of freeways and (2) the SCAG region

- Estimate the distribution of environmental justice groups within 500 feet of freeways impacted by changes in CO and PM

RESULTS

The following tables and figures present a comparison of the distribution of environmental justice demographic groups in the areas adjacent to freeways and highly traveled corridors with those in the greater SCAG region for the 2012 Base Year and for the 2040 planned year projection. As indicated in **TABLE 80** and **FIGURES 70-75**, most environmental justice population groups show higher concentrations in the freeway-adjacent areas than is seen in the greater region, except for disabled people, African Americans, Native Americans, those identifying as "Other Race." Alternatively, there is a disproportionately low presence of Whites and households in the highest income quintiles for areas adjacent to freeways and highly traveled corridors.

TABLE 80 Distribution of Environmental Justice Demographic Groups along Freeways and Highly Traveled Corridors

	500-Foot of Freeway			SCAG Region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Population						
Hispanic	50.4%	55.3%	55.3%	45.7%	52.3%	52.3%
White	27.4%	19.0%	18.9%	32.7%	22.4%	22.4%
African American	6.4%	4.8%	4.8%	6.4%	5.3%	5.3%
Native American	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Asian	13.4%	17.6%	17.7%	12.5%	16.4%	16.4%
Other Race	2.3%	3.0%	3.0%	2.4%	3.1%	3.1%
Age 0 to 4	6.9%	6.4%	6.3%	6.7%	6.2%	6.2%
Seniors (65+)	10.7%	17.4%	17.6%	11.5%	18.1%	18.1%
Disabled	9.4%	9.4%	9.4%	9.3%	9.4%	9.4%
Households						
Poverty 1*	14.6%	14.4%	14.3%	13.8%	13.9%	13.9%
Poverty 2*	8.9%	8.9%	8.9%	8.7%	8.7%	8.7%
Poverty 3*	8.4%	8.4%	8.4%	8.3%	8.4%	8.4%
Quintile 1	20.5%	21.1%	21.0%	19.8%	20.5%	20.5%
Quintile 2	20.0%	20.8%	20.8%	19.8%	20.6%	20.6%
Quintile 3	19.9%	20.3%	20.3%	19.9%	20.4%	20.4%
Quintile 4	19.8%	19.5%	19.5%	20.1%	19.8%	19.8%
Quintile 5	19.8%	18.4%	18.4%	20.4%	18.7%	18.7%
Hispanic Quintile 1	9.2%	10.9%	10.8%	8.0%	10.0%	10.0%
White Quintile 1	5.7%	3.9%	3.8%	6.7%	4.5%	4.5%
African American Quintile 1	2.3%	1.7%	1.7%	2.2%	1.8%	1.8%
Native American Quintile 1	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 1	2.9%	3.9%	4.0%	2.4%	3.4%	3.4%
Other Race Quintile 1	0.4%	0.6%	0.6%	0.4%	0.6%	0.6%

	500-Foot of Freeway			SCAG Region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Households						
Hispanic Quintile 2	9.8%	11.8%	11.8%	8.7%	11.0%	11.0%
White Quintile 2	6.0%	4.0%	4.0%	7.0%	4.7%	4.7%
African American Quintile 2	1.6%	1.2%	1.2%	1.6%	1.3%	1.3%
Native American Quintile 2	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 2	2.1%	3.1%	3.2%	2.0%	2.9%	2.8%
Other Race Quintile 2	0.4%	0.6%	0.6%	0.4%	0.6%	0.6%
Hispanic Quintile 3	8.6%	10.3%	10.3%	7.6%	9.8%	9.8%
White Quintile 3	7.0%	4.7%	4.6%	8.1%	5.4%	5.4%
African American Quintile 3	1.4%	1.1%	1.1%	1.4%	1.2%	1.2%
Native American Quintile 3	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 3	2.5%	3.6%	3.7%	2.3%	3.3%	3.3%
Other Race Quintile 3	0.4%	0.5%	0.5%	0.4%	0.6%	0.6%
Hispanic Quintile 4	6.7%	8.1%	8.2%	6.0%	7.8%	7.8%
White Quintile 4	8.3%	5.5%	5.4%	9.6%	6.4%	6.4%
African American Quintile 4	1.3%	1.0%	1.0%	1.3%	1.1%	1.1%
Native American Quintile 4	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 4	3.0%	4.3%	4.4%	2.8%	4.0%	4.0%
Other Race Quintile 4	0.3%	0.4%	0.4%	0.3%	0.5%	0.5%
Hispanic Quintile 5	4.7%	5.6%	5.6%	4.1%	5.2%	5.2%
White Quintile 5	10.4%	6.8%	6.7%	11.9%	7.9%	7.9%
African American Quintile 5	1.0%	0.8%	0.8%	1.0%	0.8%	0.8%
Native American Quintile 5	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 5	3.3%	4.7%	4.8%	3.1%	4.4%	4.4%
Other Race Quintile 5	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

Source: SCAG
* Poverty 1 = Households below poverty; Poverty 2 = Households at 100% to 149% of poverty level; Poverty 3 = Households at 150% to 199% of poverty level

Source: SCAG

FIGURE 70 Breakdown of Population along Freeways and Highly Traveled Corridors (Base Year 2012)

Category	Within 500-Foot of Freeways	SCAG Region
Disabled	9.4%	9.3%
Seniors (65+)	10.7%	11.5%
Age 0 to 4	6.9%	6.7%
Other Race	2.3%	2.4%
Asian	13.4%	12.5%
Native American	0.3%	0.3%
African American	6.4%	6.4%
White	27.4%	32.7%
Hispanic	50.4%	45.7%

Within 500-Foot of Freeways   SCAG Region
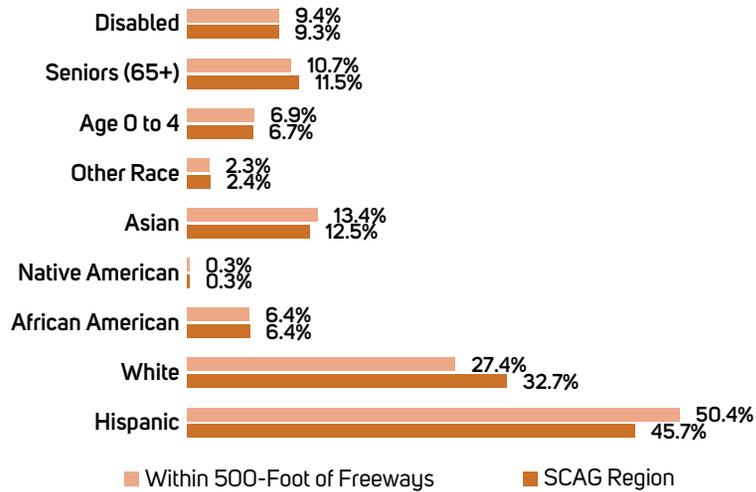
Source: SCAG

FIGURE 72 Breakdown of Poverty Households along Freeways and Highly Traveled Corridors (Base Year 2012)

	Within 500-Foot of Freeways	SCAG Region
Poverty 1*	14.57%	13.77%
Poverty 2*	8.93%	8.67%
Poverty 3*	8.38%	8.30%

Within 500-Foot of Freeways   SCAG Region
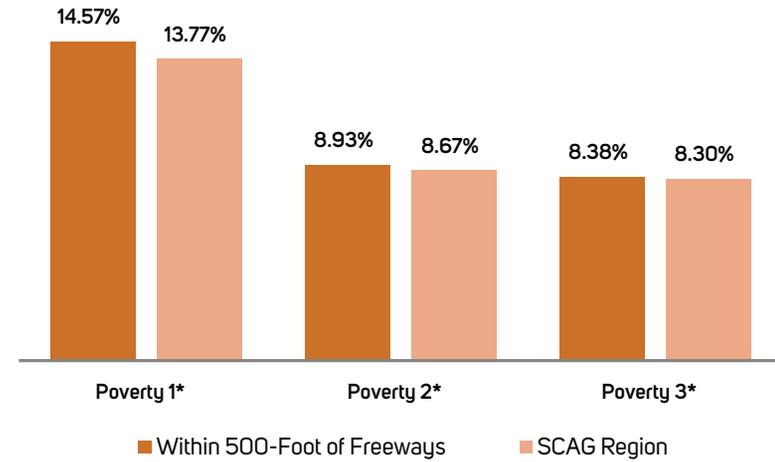
Source: SCAG

FIGURE 71 Breakdown of Population along Freeways and Highly Traveled Corridors (2040 Plan)

Category	Within 500-Foot of Freeways	SCAG Region
Disabled	9.4%	9.4%
Seniors (65+)	17.6%	18.1%
Age 0 to 4	6.3%	6.2%
Other Race	3.0%	3.1%
Asian	17.7%	16.4%
Native American	0.3%	0.4%
African American	4.8%	5.3%
White	18.9%	22.4%
Hispanic	55.3%	52.3%

Within 500-Foot of Freeways   SCAG Region
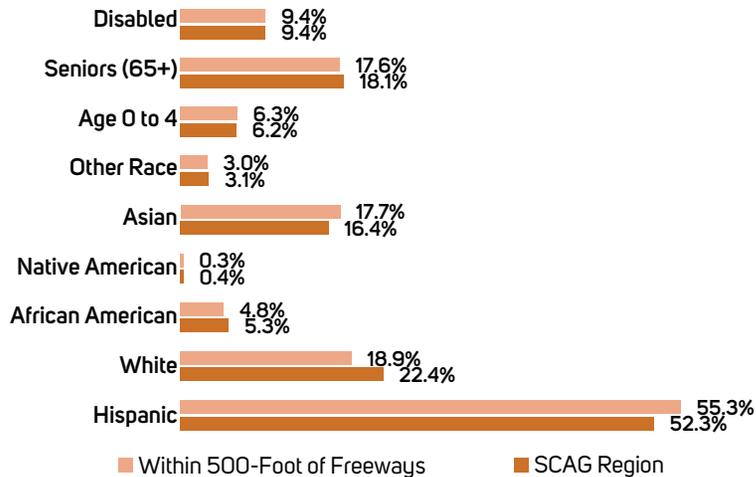
Source: SCAG

FIGURE 73 Breakdown of Poverty Households along Freeways and Highly Traveled Corridors (2040 Plan)

	Within 500-Foot of Freeways	SCAG Region
Poverty 1*	14.3%	13.9%
Poverty 2*	8.9%	8.7%
Poverty 3*	8.4%	8.4%

Within 500-Foot of Freeways   SCAG Region
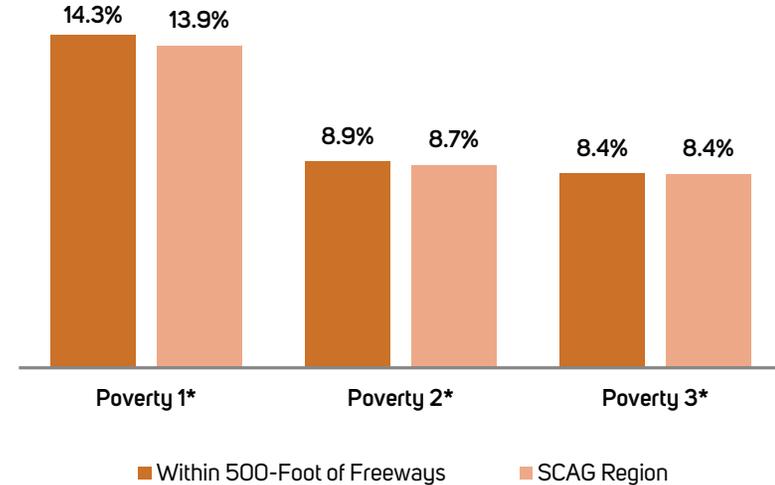
Source: SCAG

FIGURE 74 Breakdown of Households Income Quintile along Freeways and Highly Traveled Corridors (Base Year 2012)

- Quintile 1
- Quintile 2
- Quintile 3
- Quintile 4
- Quintile 5

KEY:
SCAG Region
Within 500-Foot of Freeways

Source: SCAG

FIGURE 75 Breakdown of Households Income Quintile along Freeways and Highly Traveled Corridors (2040 Plan)

- Quintile 1
- Quintile 2
- Quintile 3
- Quintile 4
- Quintile 5

KEY:
SCAG Region
Within 500-Foot of Freeways
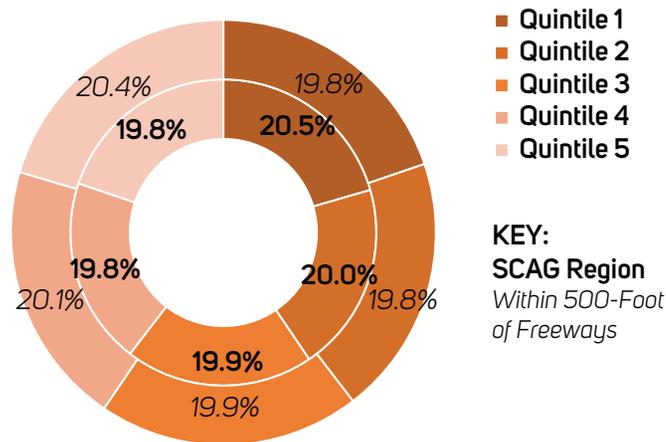
Source: SCAG

It is projected that the share of most environmental justice population groups will increase in the 2040 planned year (both Baseline and Plan), compared to Base Year 2012. Exceptions are African Americans, children age 0-4 and the disabled population. There are no significant differences in the share of environmental justice population groups between the 2040 Baseline and the 2040 Plan. There are disproportionately higher concentrations of environmental justice population groups in the areas adjacent to freeways and highly traveled corridors both in Base Year 2012 and the 2040 planned year projection.

Since the 2012 RTP/SCS process, there have been concerns raised by environmental groups, the health community, housing groups and air quality regulation agencies about incompatible land uses, including sensitive receptors such as hospitals, senior/day care centers, and housing near freeways and busy roadways. A sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure from air contaminants. **EXHIBIT 28** shows schools, colleges, child and senior care facilities, medical care/nursing facilities, churches and recreational facilities in the SCAG region. The concentration of sensitive receptors is highest in south Los Angeles County, north Orange County, southwest San Bernardino County, and northwest Riverside County. The

distribution of these facilities highly correlates with $PM_{2.5}$ emissions in the SCAG region, which suggests that there may be health impacts to these sensitive populations, especially along freeways and highly traveled corridors.

The 2016 RTP/SCS land use strategy calls for redirecting future growth into high quality transit areas (HQTAs). As a result, part of this growth will occur in areas where HQTAs overlap with areas within a distance of 500 feet from freeways. **EXHIBIT 29** shows the intersection of HQTAs and areas within a distance of 500 feet from freeways.

EXHIBIT 28 Sensitive Receptors in 2012
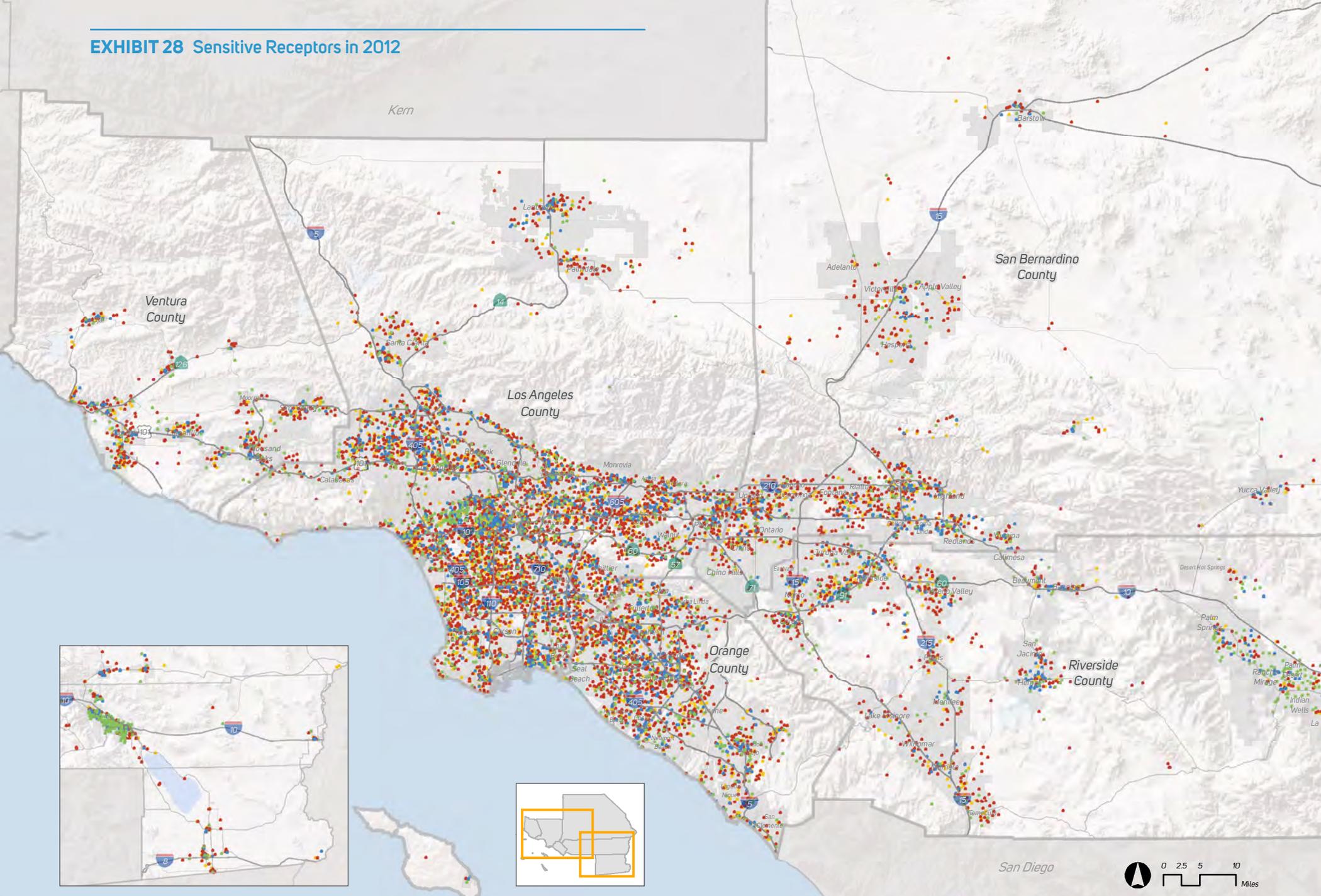
Sensitive Receptors (2012)

- Churches and Recreational Facilities
- Medical Care/Nursing Facilities
- Schools and Colleges
- Child and Senior Care Facilities

(Source: SCAG, TeleAtlas, TomTom)

EXHIBIT 29 High Quality Transit Areas (HQTA) and Areas within a Distance of 500-Foot from Freeways
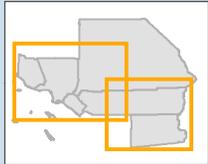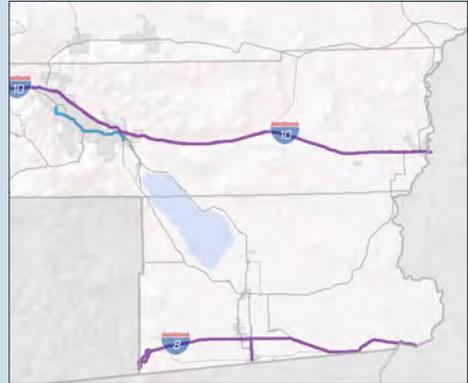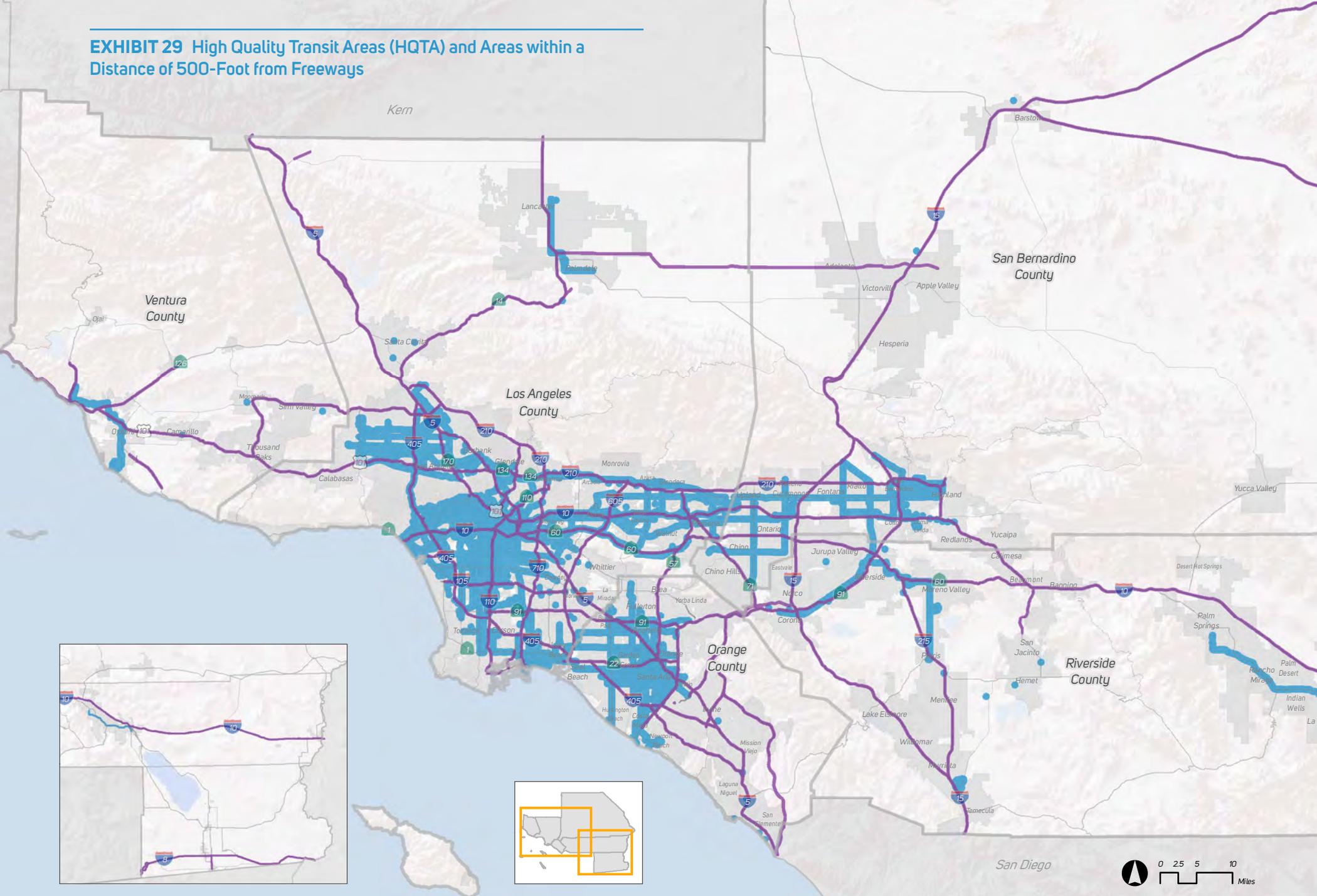
Areas within a Distance of 500-Foot from Freeways

HQTA (2040 Plan)

(Source: SCAG, 2015.)

TABLE 81 shows the share of households and employment within HQTAs, 500 feet of freeways, and overlapping areas within a distance of 500 feet from freeways and HQTAs for the 2016 RTP/SCS. As indicated in the table, freeway adjacent areas accommodate about 4.2 percent of regional households and about 7.5 percent of regional employment both in Base Year 2012 and Plan year 2040. HQTAs accommodate about 30 percent of regional households and about 38 percent of regional employment in Base Year 2012, while they accommodate about 47 percent of regional households and about 56 percent of regional employment in Plan year 2040. Neighborhoods where HQTAs overlap with areas within a distance of 500 feet from freeways accommodate about 1.7 percent of all regional households and about three percent of regional employment in Base Year 2012, and about 2.7 percent of regional households and about 4.4 percent of regional employment in Plan year 2040. While the 2016 RTP/SCS shifts growth of households and jobs further into HQTAs, the Plan also considers the health implications of growth in areas within a distance of 500 feet from freeways, and reduces the share of growth in the areas in HQTAs that overlap with 500 feet of freeway areas as a result.

TABLE 81 Share of Households and Employment within 500-Foot of Freeways and HQTA

Geographic Area	Base Year 2012		2040 Baseline		2040 Local Input		2040 Plan	
	Household	Employment	Household	Employment	Household	Employment	Household	Employment
Within 500 Feet of Freeways	247,800	558,200	300,600	769,700	313,900	748,200	314,100	747,000
(% Total)	4.2%	7.5%	4.1%	7.8%	4.2%	7.6%	4.2%	7.6%
High Quality Transit Area (HQTA)	1,753,600	2,836,800	2,661,900	4,347,200	2,896,900	4,752,400	3,473,100	5,545,600
(% Total)	29.8%	38.1%	35.9%	44.1%	39.1%	48.2%	46.9%	56.2%
Overlap of Areas within a Distance of 500 Feet from Freeways & HQTA	102,700	221,300	149,500	355,700	173,500	385,100	196,800	438,200
(% Total)	1.7%	3.0%	2.0%	3.6%	2.3%	3.9%	2.7%	4.4%
(% HQTA)	5.9%	7.8%	5.6%	8.2%	6.0%	8.1%	5.7%	7.9%
SCAG Region	5,883,000	7,436,000	7,405,000	9,867,000	7,406,000	9,867,000	7,406,000	9,867,000

Source: SCAG

ENVIRONMENTAL IMPACTS IN THE FREEWAY ADJACENT AREAS

TABLE 82 presents a comparison of PM and CO emissions in TAZs within 500 feet of freeways with those in the SCAG region for Base Year 2012 and the Plan year 2040. As shown in the table, the share of PM and CO emissions in freeway adjacent areas is significant relative to freeway adjacent area's share of the region's total land area. While regional emissions overall are projected to decrease significantly between 2012 and 2040, the rate of decrease near freeways is expected to be even greater.

In **FIGURES 76 - 81**, the breakdown of environmental justice groups within freeway adjacent areas is compared with each group's concentration in the greater region, both for areas that incur decreases and increases in CO and PM$_{2.5}$ as a result of the Plan.

FIGURE 76 Breakdown of Population along Freeways and Highly Traveled Corridors Impacted by CO Change
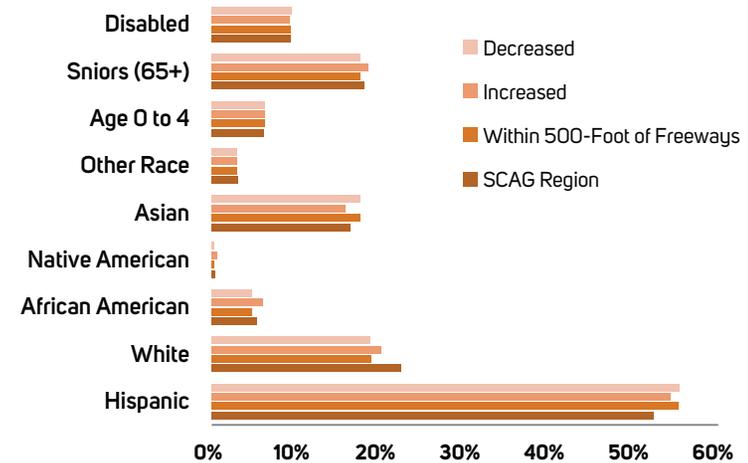
Source: SCAG

TABLE 82 Emissions along Freeways and Highly Traveled Corridors

Criteria Pollutant	Emissions within 500-Foot of Freeways (Tons per Day)			Emissions in the SCAG Region (Tons per Day)			Decrease in Emissions within 500-Foot Freeways		Decrease in Emissions in the SCAG Region	
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012 to 2040 Baseline	2040 Baseline to 2040 Plan	Base Year 2012 to 2040 Baseline	2040 Baseline to 2040 Plan
CO	445	89	80	1,545	326	296	-80%	-9%	-79%	-9%
PM$_{2.5}$	5.0	3.5	3.4	17.6	12.9	12.2	-28%	-6%	-27%	-6%

Source: SCAG

FIGURE 77 Breakdown of Population along Freeways and Highly Traveled Corridors Impacted by PM$_{2.5}$ Change

Legend:
- Decreased
- Increased
- Within 500-Foot of Freeways
- SCAG Region

Categories (top to bottom):
- Disabled
- Sniors (65+)
- Age 0 to 4
- Other Race
- Asian
- Native American
- African American
- White
- Hispanic
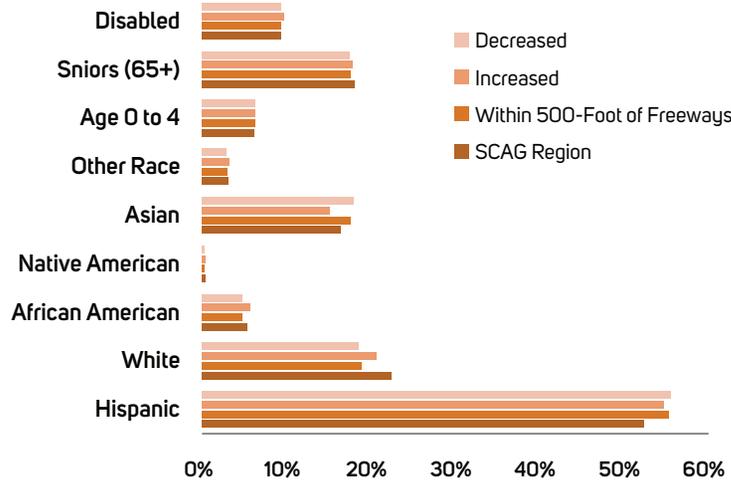
Source: SCAG

FIGURE 79 Breakdown of Poverty Households along Freeways and Highly Traveled Corridors Impacted by PM$_{2.5}$ Change

Poverty 1*: 14.7%, 12.8%, 14.3%, 13.9%
Poverty 2*: 9.0%, 8.2%, 8.9%, 8.7%
Poverty 3*: 8.5%, 8.0%, 8.4%, 8.4%

Legend: Decreased, Increased, Within 500-Foot of Freeways, SCAG Region
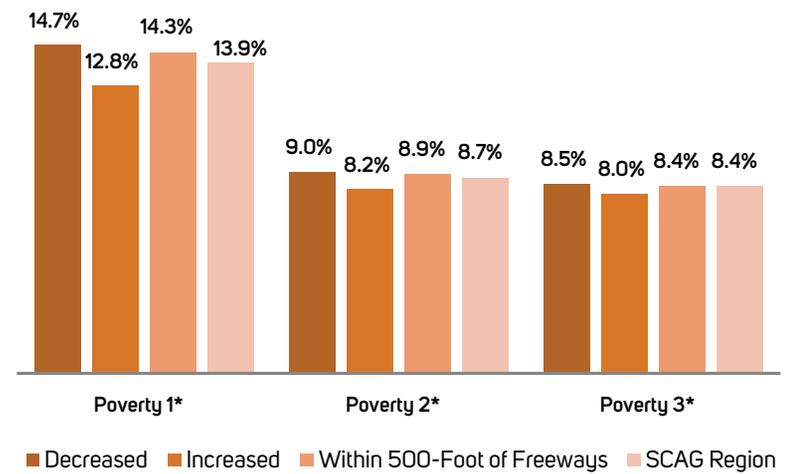
Source: SCAG

FIGURE 78 Breakdown of Poverty Households along Freeways and Highly Traveled Corridors Impacted by CO Change

Poverty 1*: 14.5%, 12.7%, 14.3%, 13.9%
Poverty 2*: 8.9%, 8.2%, 8.9%, 8.7%
Poverty 3*: 8.4%, 8.3%, 8.4%, 8.4%

Legend: Decreased, Increased, Within 500-Foot of Freeways, SCAG Region
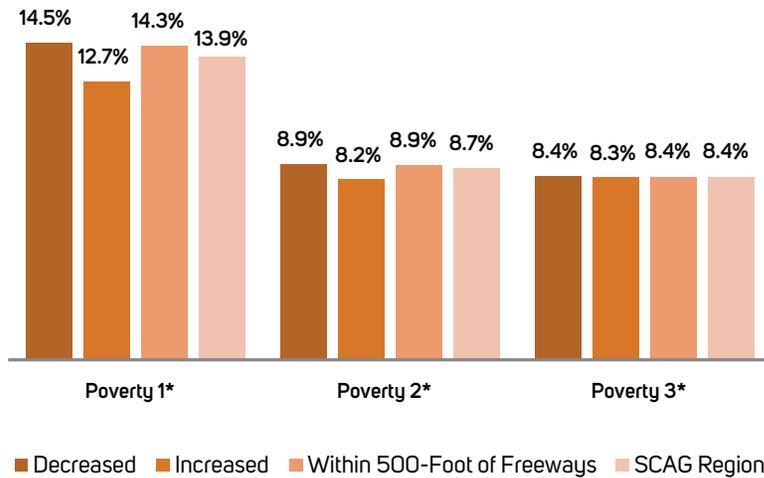
Source: SCAG

FIGURE 80 Breakdown of Households Income Quintile along Freeways and Highly Traveled Corridors Impacted by CO Change

Legend:
- Quintile 1
- Quintile 2
- Quintile 3
- Quintile 4
- Quintile 5

Values:
- 20.5%, 21.0%, 18.9%, 21.2%
- 20.9%, 20.4%, 20.8%, 20.6%
- 20.3%, 21.1%, 20.3%, 20.4%
- 19.4%, 20.8%, 19.5%, 19.8%
- 18.7%, 18.4%, 18.8%, 18.3%
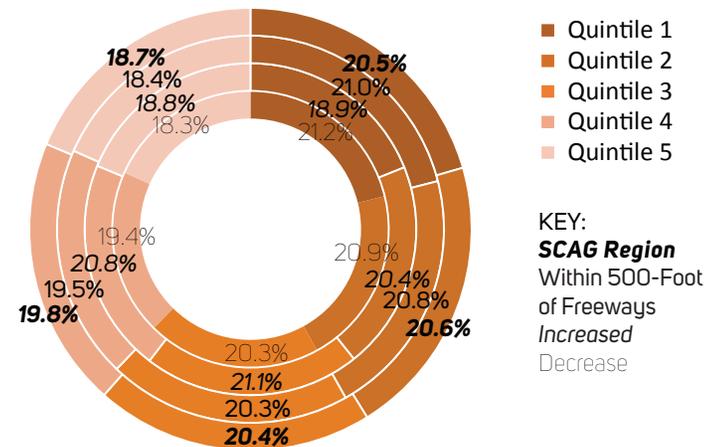
KEY:
SCAG Region
Within 500-Foot of Freeways
Increased
Decrease

Source: SCAG

FIGURE 81 Breakdown of Households Income Quintile along Freeways and Highly Traveled Corridors Impacted by PM$_{2.5}$ Change
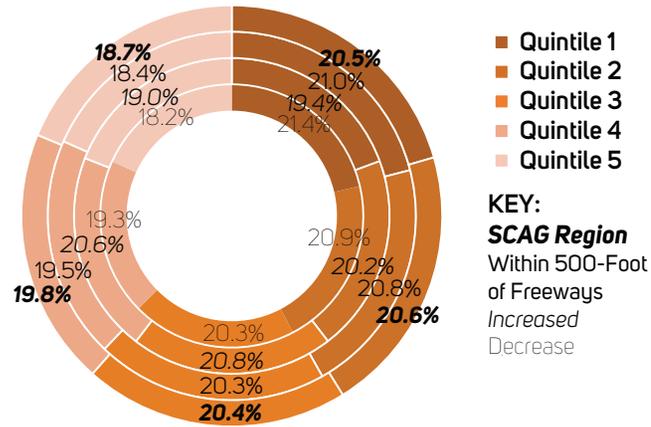
Source: SCAG

AVIATION NOISE IMPACTS

The SCAG region supports more than 50 airports. Collectively, these airports comprise one of the largest aviation systems in the United States. These military, general aviation and commercial airports operate safely and efficiently in a very complex airspace environment. Ten of the airports are commercial, and have the ability to handle scheduled passenger flights: Burbank Bob Hope Airport (BUR), Los Angeles International Airport (LAX), Long Beach Airport (LGB), Ontario International Airport (ONT), Palmdale Regional Airport (PMD), Palm Springs International Airport (PSP), March Inland Port (RIV), San Bernardino International Airport (SBD), John Wayne Airport (SNA), Southern California Logistics Airport (VCV), Imperial County Airport (IPL) and Oxnard Airport (OXR). Although the projected demand for airport capacity has decreased compared with the 2012 RTP/SCS, there is still moderate growth planned for the future. Projected noise impacts from aircraft operations at the region's airports in 2040 were modeled for inclusion in the Programmatic Environmental Impact Report for the RTP. For each airport, modeling produced a contour or isoline for the 65 dB Community Noise Equivalent Level (CNEL), a measure of noise that takes into account both the number and the timing of flights, as well as the mix of aircraft types. The Federal Aviation Administration has a national noise policy that helps to minimize residential noise exposure, while still promoting inter-state commerce. The airports, local jurisdictions and airport users all have a role in noise mitigation within Noise Impacted Areas, and limiting the development of new "incompatible land uses", including residential units.

METHODOLOGY

To identify potentially impacted populations, the anticipated population within the 65 dB CNEL contour was calculated using the following steps:

- Use the Integrated Noise Model (INM) to generate aviation noise contour of 65 dB (community noise equivalent - CNEL), based on the estimated noise analysis from the aviation technical information in SCAG's 2001 RTP. Note that the noise contours estimated from the 2001 planning cycle represent potentially the largest noise contour areas in recent years, due to trends in the industry that have been signaling the adoption of quieter airplane engines and less aviation operations.

- Identify areas of concern within the aviation noise zone.

- Estimate and compare to the greater region the share of environmental justice groups for each area of concern within the noise zone.

RESULTS

For the purposes of this study, Aviation Noise Areas are defined as areas that are adversely affected by aircraft and airport noise. As part of the environmental justice analysis, special attention will be focused on the income levels, disability, age and race/ethnicity of affected populations. **TABLE 83** shows the breakdown of passengers at each airport in the region based on the Baseline and the Plan. Units are presented as Million Annual Passengers (MAPs). This indicates that the 2016 RTP/SCS will result in less airport activity and moderate noise improvements, as fewer people will be exposed to harmful levels of aviation noise primarily due to lower MAPs anticipated at each airport. **TABLE 84** presents the current distribution of all environmental justice groups within the aviation noise impacted areas, and their comparisons with the regional average. When looking at the population closely, most residents within the noise contours in 2012 are minority and come from low-income households. For example, African Americans accounted for just 6.4 percent of the region's population in 2012 but represented a quarter of all population within the noise contour. Similarly, but to a lesser extent, Hispanics represent nine percent more of the population in noise impacted areas (55 percent) than their share of the region's total population (46 percent). There are 92,000 (0.5 percent) people, or 28,700 households in year 2012 that reside within noise impacted areas. For 2040, 134,000 people (0.6 percent) will be exposed within 65+ dB aviation noise. However, the draft 2016 RTP/SCS, even with the top range of LAX MAP (96.6) is projected to have a less aviation noise impacts on environmental justice population than the case under baseline. The Plan will result in 22,000 fewer people exposed to harmful aviation noise than under baseline conditions, with the most notable improvements experienced by African Americans and Hispanics.

TABLE 83 2016-2040 RTP/SCS Aviation Plan and Scenario

Scenario/Airport	BUR	IPL	LAX	LGB	ONT	OXR	PMD	PSP	RIV	SBD	SNA	VCV	SCAG Region
Baseline	6.3	0.2	100.7	5.0	7.2	0.0	0.0	3.0	0.0	0.0	13.8	0.0	136.2
TC-Low	7.3	0.2	82.9	5.0	11.0	0.2	0.5	3.7	0.2	0.2	12.5	0.2	123.9
TC-High	7.3	0.2	96.6	5.0	19.0	0.2	2.5	3.7	0.2	1.5	12.5	0.2	148.9
2016-2040 RTP/SCSplan	7.3	0.2	91.8	5.0	13.5	0.2	1.0	3.7	0.2	0.5	12.5	0.2	136.2

Notes: 2012 MAP levels do not sum to total due to rounding.
TC adopted a total regional MAP of 136.2 for 2040, along with the ranges for each airport shown in the table above.
TC directed that the 2040 modeling include the high end of the range for each airport
Therefore, the 2040 modeled trips are the equivalent of 148.9 MAP.

TABLE 84 EJ Variables within the Aviation 65-dB Noise Impacted Areas for 2016 RTP/SCS

	2012 Base Year		2040 Baseline		2040 Plan		Plan - Baseline	Percent Difference
Population	91,928	0.5%	156,253	0.7%	134,277	0.6%	(21,976)	-14%
Hispanic	50,773	55%	86,253	55%	74,965	56%	(11,288)	-13%
White	12,873	14%	20,004	13%	17,622	13%	(2,383)	-12%
African American	23,096	25%	30,563	20%	24,711	18%	(5,852)	-19%
Native American	158	0%	430	0%	378	0%	(52)	-12%
Asian & PI	3,173	3%	14,343	9%	12,647	9%	(1,697)	-12%
Other Races	1,855	2%	4,659	3%	3,954	3%	(705)	-15%
Age 0 to 4	7,256	8%	10,885	7%	9,268	7%	(1,617)	-15%
Seniors (65+)	8,184	9%	24,714	16%	21,437	16%	(3,276)	-13%
Disabled	8,180	9%	14,710	9%	12,248	9%	(2,463)	-17%
Male	44,547	48%	76,070	49%	65,488	49%	(10,582)	-14%
Female	47,380	52%	80,183	51%	68,789	51%	(11,394)	-14%
Households	28,734	0.5%	52,328	0.7%	44,512	0.6%	(7,815)	-15%
Poverty 1*	4,796	17%	9,258	18%	7,615	17%	(1,643)	-18%
Poverty 2*	2,841	10%	5,350	10%	4,496	10%	(854)	-16%
Poverty 3*	2,589	9%	4,760	9%	4,049	9%	(711)	-15%
Quintile 1	7,229	25%	13,936	27%	11,659	26%	(2,277)	-16%
Quintile 2	6,326	22%	11,825	23%	10,041	23%	(1,784)	-15%
Quintile 3	5,761	20%	10,316	20%	8,840	20%	(1,476)	-14%
Quintile 4	4,905	17%	8,604	16%	7,409	17%	(1,196)	-14%
Quintile 5	4,513	16%	7,647	15%	6,564	15%	(1,083)	-14%
Hispanic Quintile 1	3,238	11%	6,574	13%	5,583	13%	(991)	-15%
White Quintile 1	746	3%	1,290	2%	1,122	3%	(167)	-13%
African American Quintile 1	2,921	10%	4,453	9%	3,560	8%	(893)	-20%
Native American Quintile 1	9	0%	38	0%	34	0%	(4)	-11%
Asian Quintile 1	182	1%	1,193	2%	1,036	2%	(157)	-13%
Other Race Quintile 1	133	0%	388	1%	324	1%	(64)	-16%
Hispanic Quintile 2	3,146	11%	6,300	12%	5,420	12%	(880)	-14%
White Quintile 2	782	3%	1,314	3%	1,141	3%	(173)	-13%
African American Quintile 2	2,125	7%	2,913	6%	2,374	5%	(539)	-19%
Native American Quintile 2	6	0%	32	0%	27	0%	(6)	-18%

Source: SCAG

TABLE 84 EJ Variables within the Aviation 65-dB Noise Impacted Areas for 2016 RTP/SCS Continued

	2012 Base Year		2040 Baseline		2040 Plan		Plan - Baseline	Percent Difference
Asian Quintile 2	161	1%	954	2%	814	2%	(140)	-15%
Other Race Quintile 2	106	0%	310	1%	264	1%	(46)	-15%
Hispanic Quintile 3	2,576	9%	4,900	9%	4,257	10%	(644)	-13%
White Quintile 3	1,007	4%	1,551	3%	1,335	3%	(215)	-14%
African American Quintile 3	1,849	6%	2,417	5%	2,003	4%	(414)	-17%
Native American Quintile 3	13	0%	36	0%	35	0%	(2)	-4%
Asian Quintile 3	219	1%	1,155	2%	994	2%	(161)	-14%
Other Race Quintile 3	98	0%	256	0%	216	0%	(41)	-16%
Hispanic Quintile 4	1,686	6%	3,284	6%	2,867	6%	(417)	-13%
White Quintile 4	1,315	5%	1,889	4%	1,626	4%	(263)	-14%
African American Quintile 4	1,569	5%	1,954	4%	1,642	4%	(313)	-16%
Native American Quintile 4	13	0%	34	0%	32	0%	(2)	-6%
Asian Quintile 4	239	1%	1,231	2%	1,066	2%	(165)	-13%
Other Race Quintile 4	82	0%	212	0%	176	0%	(36)	-17%
Hispanic Quintile 5	1,161	4%	2,226	4%	1,967	4%	(259)	-12%
White Quintile 5	2,007	7%	2,783	5%	2,376	5%	(407)	-15%
African American Quintile 5	968	3%	1,065	2%	913	2%	(152)	-14%
Native American Quintile 5	13	0%	35	0%	26	0%	(9)	-27%
Asian Quintile 5	302	1%	1,382	3%	1,150	3%	(231)	-17%
Other Race Quintile 5	62	0%	157	0%	133	0%	(24)	-15%

Source: SCAG
* Poverty 1 = Household below poverty; Poverty 2 = Household 100%~149% of poverty level; Poverty 3 = Household 150%~199% of poverty level

TRENDS AND DYNAMICS OF AVIATION NOISE CONTOURS

Beginning in 1990 with the Airport Noise and Capacity Act (ANCA) Congress has taken measures to reduce the amount of noise created by aircraft in the vicinity of airports. The noise created by aircraft can negatively impact the quality of life for people that reside within 65 CNEL (Community Noise Equivalency Level). For areas near the region's airports where the 65 CNEL includes residential neighborhoods, there have been aggressive sound attenuation programs that lower interior noise levels to federally acceptable standards (largely through the installation of HVAC units, double paned windows and reinforced doors). Additionally, the Airport Land Use Commission (ALUC) in the State of California has charged counties with ensuring that new noise-sensitive land uses are not allowed near airports. Aside from just homes, noise sensitive land uses include places of worship, hospitals, schools with young children, outdoor theatres, etc. These land use measures have proactively made homes quieter for residents, but also safer for people on the ground and in aircraft.

Jet aircraft have also continued to get quieter since 1990. With new technology being used, jet engines are producing an ever greater amount of thrust and create less noise while offering greater reliability. For example, a newly produced four jet aircraft can hold more passengers with a smaller noise footprint than one produced in 1990. By 2040, the amount of noise produced at the airports in the region will be dramatically reduced because of the number of newer, quieter aircraft operating. In the SCAG region the most common aircraft types used on short, medium and long haul domestic travel (that typically seat between 140-200 passengers), and also have new versions entering the market in the next five years that are already touting noise reductions. Lastly, this same technology is proving to reduce the noise even more dramatically for aircraft arrivals.

The trend in the airline business that we see at SCAG's regional airports through 2040 is a slight up-gauging of aircraft size with higher load factors. This means that an aircraft on a route that used to have 120 seats, may now have 150 seats. And previously, the 120 seat aircraft was 80 percent full, in 2040 the 150 seat aircraft will be 90 percent full. And the noise created by the 150 seat aircraft is the same (or reduced). Thus, for the same number of arrivals and departures there are more passengers with the same amount of noise.

To summarize, given land use controls, noise attenuation programs, jet engine technology and airline scheduling trends the noise created by aircraft is forecast to have minimal impact beyond current levels, even out to 2040.

TABLE 85 Breakdown of Households by Income Quintile and Race/Ethnicity in Impacted Areas in 2012

Households	Within 65 dB (BY 2012)					
	Region	EJA	DAC	CoC	Urban	Rural
Hispanic Quintile 1	8.0%	13.8%	18.8%	14.6%	11.3%	12.7%
White Quintile 1	7.0%	1.1%	1.2%	0.8%	2.6%	2.9%
African American Quintile 1	2.0%	12.7%	8.0%	13.9%	10.2%	0.0%
Native American Quintile 1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asian Quintile 1	2.0%	0.5%	0.4%	0.3%	0.6%	0.0%
Other Quintile 1	0.0%	0.5%	0.3%	0.4%	0.5%	0.0%
Hispanic Quintile 2	9.0%	13.3%	17.8%	13.7%	10.9%	18.1%
White Quintile 2	7.0%	1.1%	1.3%	0.8%	2.7%	3.1%
African American Quintile 2	2.0%	9.1%	5.2%	9.6%	7.4%	0.0%
Native American Quintile 2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asian Quintile 2	2.0%	0.4%	0.4%	0.3%	0.6%	0.0%
Other Quintile 2	0.0%	0.3%	0.2%	0.3%	0.4%	0.0%
Hispanic Quintile 3	8.0%	10.8%	15.0%	11.0%	9.0%	15.8%
White Quintile 3	8.0%	1.3%	1.6%	0.8%	3.5%	3.1%
African American Quintile 3	1.0%	7.9%	4.4%	8.4%	6.4%	0.0%
Native American Quintile 3	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%
Asian Quintile 3	2.0%	0.5%	0.5%	0.4%	0.8%	0.0%
Other Quintile 3	0.0%	0.2%	0.1%	0.2%	0.3%	0.0%
Hispanic Quintile 4	6.0%	6.9%	9.3%	6.8%	5.9%	15.8%
White Quintile 4	10.0%	1.3%	1.6%	0.7%	4.6%	4.3%
African American Quintile 4	1.0%	6.6%	3.4%	6.8%	5.5%	0.0%
Native American Quintile 4	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
Asian Quintile 4	3.0%	0.5%	0.5%	0.4%	0.8%	1.4%
Other Quintile 4	0.0%	0.2%	0.2%	0.2%	0.3%	0.0%
Hispanic Quintile 5	4.0%	4.3%	5.3%	4.1%	4.0%	11.4%
White Quintile 5	12.0%	1.5%	1.5%	0.8%	7.0%	5.8%
African American Quintile 5	1.0%	4.1%	2.2%	4.3%	3.4%	1.4%
Native American Quintile 5	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
Asian Quintile 5	3.0%	0.5%	0.5%	0.3%	1.1%	2.7%
Other Quintile 5	0.0%	0.2%	0.2%	0.1%	0.2%	1.4%

Source: SCAG

TABLE 86 Breakdown of Households by Income Quintile and Race/Ethnicity in Impacted Areas in 2040

Households	Within 65 dB (2040PL)					
	Region	EJA	DAC	CoC	Urban	Rural
Hispanic Quintile 1	10.0%	14.2%	17.0%	14.6%	12.5%	14.1%
White Quintile 1	4.5%	1.8%	1.7%	1.6%	2.5%	1.3%
African American Quintile 1	1.8%	10.0%	6.9%	10.7%	8.0%	0.0%
Native American Quintile 1	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%
Asian Quintile 1	3.4%	2.0%	2.1%	1.9%	2.3%	0.0%
Other Race Quintile 1	0.6%	0.7%	0.5%	0.7%	0.7%	0.0%
Hispanic Quintile 2	11.0%	13.6%	16.1%	13.8%	12.2%	20.4%
White Quintile 2	4.7%	1.7%	1.7%	1.6%	2.6%	1.5%
African American Quintile 2	1.3%	6.6%	4.2%	6.9%	5.3%	0.0%
Native American Quintile 2	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%
Asian Quintile 2	2.8%	1.5%	1.7%	1.5%	1.8%	0.0%
Other Race Quintile 2	0.6%	0.5%	0.4%	0.5%	0.6%	0.0%
Hispanic Quintile 3	9.8%	10.6%	13.2%	10.6%	9.6%	16.9%
White Quintile 3	5.4%	1.8%	1.9%	1.6%	3.0%	1.5%
African American Quintile 3	1.2%	5.6%	3.4%	5.8%	4.5%	0.0%
Native American Quintile 3	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
Asian Quintile 3	3.3%	1.9%	1.9%	1.8%	2.2%	0.0%
Other Race Quintile 3	0.6%	0.4%	0.3%	0.3%	0.5%	0.0%
Hispanic Quintile 4	7.8%	6.9%	8.4%	6.7%	6.4%	17.1%
White Quintile 4	6.4%	1.9%	2.0%	1.6%	3.7%	2.8%
African American Quintile 4	1.1%	4.5%	2.5%	4.6%	3.7%	0.0%
Native American Quintile 4	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%
Asian Quintile 4	4.0%	1.9%	2.0%	1.9%	2.4%	1.3%
Other Race Quintile 4	0.5%	0.3%	0.3%	0.3%	0.4%	0.0%
Hispanic Quintile 5	5.2%	4.3%	5.1%	4.1%	4.4%	12.8%
White Quintile 5	7.9%	2.4%	2.4%	2.0%	5.3%	5.3%
African American Quintile 5	0.8%	2.5%	1.5%	2.5%	2.1%	0.0%
Native American Quintile 5	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%
Asian Quintile 5	4.4%	1.9%	2.0%	1.7%	2.6%	2.5%
Other Race Quintile 5	0.3%	0.3%	0.3%	0.2%	0.3%	2.6%

Source: SCAG

ROADWAY NOISE IMPACTS

The SCAG region has an extensive roadway system, with nearly 25,000 centerline miles and 70,000 lane miles. It includes one of the country's most extensive High-Occupancy Vehicle (HOV) lane systems and a growing network of toll lanes, as well as High Occupancy Toll (HOT) lanes. The region also has a vast network of arterials and other minor roadways. Noise from these transportation facilities may cause significant environmental concerns.

Exposure to noise is a continuing challenge to individual and community health, especially for low-income and minority populations, who tend to reside in higher proportions near busy roadways. To evaluate traffic noise impacts in the context of environmental justice in the larger region, SCAG conducted spatial analysis using GIS tools with FHWA's Traffic Noise Model (TNM).

METHODOLOGY

This analysis for roadway noise integrated the Federal Highway Administration's (FHWA) noise prediction model (called Traffic Noise Model (TNM)) and California Vehicle Noise (CALVENO) Emission Levels with SCAG's traffic model data to generate noise calculations across the region. Because higher speeds lead to higher noise emissions from motor vehicles, and heavy trucks have greater sound emissions than passenger cars, this analysis takes into account traffic volumes, vehicle types, vehicle speed and roadway configurations to model traffic sound (noise) levels in each road segment for the SCAG region. This method considered three scenarios for analysis: the Base Year 2012 (existing), Baseline 2040 (trend), and Plan 2040. Information on anticipated vehicle traffic for these scenarios were derived from SCAG's travel demand models, which include data on traffic volume, speed and vehicle types. There are two vehicle types in this noise computation: autos/light duty trucks (LDT) and heavy duty trucks (HDT).

Noise levels compute "free field" sound levels, which represent sound impacts without consideration for attenuation from intervening objects (barriers, buildings, terrain, etc.). In a free field environment, sound spreads spherically from a source and decreases in level at a rate of 6 dB per doubling of distance from a point source, and at a rate of 3 dB per doubling of distance from a line source. Since Caltrans has maintained a very robust sound wall installation program to mitigate noise impacts, one can reasonably conclude that any negative noise impacts that result from this analysis could potentially be mitigated in the future by the installlation of sound walls.

The roadway traffic noise analysis is based on CNEL noise measurement. Community Noise Equivalent Level (CNEL) is a noise measurement used in California with higher weighting to evening and night traffic volumes. CNEL computes total noise exposure per day (24 hours), which includes three periods in one day (day time, evening time and night time) with different weightings in traffic volume calculations.

$$V_i = A_d \times (P_{i, day} + 3 \times P_{i, evening} + 10 \times P_{i, night}) / 2400$$

V_i	traffic volume (effective volume for a 24 hour period)
A_d	average daily traffic, in vehicles per 24-hour period
P_{day}	percentage (percent) of average daily traffic, day time (7 am to 7 pm)
$P_{evening}$	percentage (percent) of average daily traffic, evening (7 pm to 10 pm)
P_{night}	percentage (percent) of average daily traffic, night time (10 pm to 7 am)
i	vehicle types

To quantify road noise impacts on environmental justice groups and within areas of concern, a 65 dB CNEL noise contour boundary was generated. The computation is based on the following formula, which considers the noise level of road segments vs. distance, and is used to determine the approximate distance that the 65 dB noise impact zone will extend out from the road centerline (noise sources).

For calculating the CNEL noise level (L), this computer for creating noise contours (impact areas) considers only distance (r) for attenuation.

Sound level *L* and Distance r

$$L_2 = L_1 - \left| 20 \cdot \log \left(\frac{r_1}{r_2} \right) \right| \qquad L_2 = L_1 - \left| 10 \cdot \log \left(\frac{r_1}{r_2} \right)^2 \right|$$

$$r_2 = r_1 \cdot 10^{\left(\frac{|L_1 - L_2|}{20} \right)} \qquad r_1 = \frac{r_2}{10^{\left(\frac{|L_1 - L_2|}{20} \right)}}$$

Using GIS, the percentage of each affected TAZ's land area that fell within the 65-dB CNEL noise zone was identified, and this percentage was applied to the demographic data forecast for this TAZ. The demographic characteristics of each impacted TAZ were aggregated and compared with the regional demographics to determine if there would be any disproportionate impacts to environmental justice groups.

RESULTS

TABLE 87 shows that in 2012, there are about 3,566 miles of roadway in the 65-dB noise zone, which impacts an 86,362 acre area. There is a 15 percent increase in the amount of roadway mileage that will generate sound levels of 65-dB in the Baseline for 2040, compared to 2012. This will result in noise impacted areas growing by 32 percent to 113,727 acres. The 2016 RTP/SCS, however, limits the length of 65-dB noise roadways, which are projected to increase by two percent to 4,168 miles. Increased speeds resulting from reduced congestion, however, will marginally grow the area impacted from roadway noise less than one percent. When looking at the impacts on the region's population, the share of residents in 65-dB roadway noise areas are slightly higher, with two percent in 2012 and 2.4 percent in 2040. As indicated previously, given the robust sound wall installation program that Caltrans has implemented, the potential locations identified in this analysis and their impacts on environmental justice populations may be effectively mitigated. Please refer to the Environmental Justice Toolbox for additional strategies to reduce potential harm from roadway noise. .

The 65-dB noise change by roadway length is visualized in **EXHIBIT 30.**

FIGURE 82 indicates that while areas impacted by roadway noise become slightly larger in 2040, they overlap to a lesser extent in the region's areas of concern: EJAs (74.1 percent vs. 71.4 percent), DACs (53 percent vs. 51.6 percent), and CoCs (27.5 percent vs. 26.3 percent). This represents significant improvements in roadway noise for residents in these areas.

However, the 2016 RTP/SCS also confirms that minority groups remain the most affected by roadway noise. **TABLE 88** indicates that racial and ethnic minorities account for over 80% of the residents in potential roadway noise impacted areas for 2040. **FIGURE 86** provides detailed estimates of environmental justice groups within areas impacted by roadway noise in 2012 and in 2040 for both the Baseline and Plan scenarios.

TABLE 87 65-dB Roadway Noise Summary by Area (acre) and Length (mile)

	2012 Base Year	2040 Baseline	2040 Plan	Base Year - Baseline	Baseline - Plan
Acres	86,362	113,727	114,482	32%	1%
Mileage	3,566	4,089	4,168	15%	2%

Source: SCAG

FIGURE 82 EJ Communities Distribution within 65-dB Noise Area in 2012 and 2040

Source: SCAG

FIGURE 83 Ethnicity Group Distribution within 65-dB Roadway Noise Area in 2040
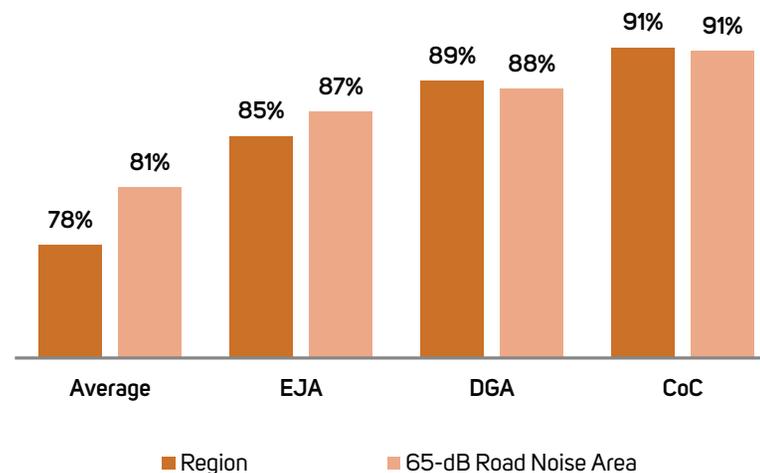
Source:SCAG

TABLE 88 Distribution of EJ population within 65-dB Roadway Noise Area

	2012 Base Year						2040 Baseline						2040 Plan					
	Within 65 dB (2012)						Within 65 dB (2040)						Within 65 dB (2040)					
	Region	EJA	DAC	CoC	Urban	Rural	Region	EJA	DAC	CoC	Urban	Rural	Region	EJA	DAC	CoC	Urban	Rural
Population	**2.0%**	**74.1%**	**53.0%**	**27.5%**	**99.5%**	**0.4%**	**2.3%**	**71.8%**	**51.2%**	**26.4%**	**98.6%**	**1.4%**	**2.4%**	**71.4%**	**51.6%**	**26.3%**	**98.7%**	**1.3%**
Hispanic	51.5%	60.6%	65.9%	73.1%	51.6%	37.2%	56.2%	61.5%	64.3%	69.4%	56.2%	57.7%	56.3%	61.9%	64.6%	69.6%	56.3%	58.0%
White	26.5%	16.8%	13.1%	8.1%	26.4%	50.4%	18.6%	13.6%	12.0%	9.4%	18.6%	21.2%	18.5%	13.4%	11.9%	9.3%	18.5%	20.5%
African American	6.5%	7.6%	7.9%	10.2%	6.5%	3.5%	5.0%	5.5%	5.5%	6.3%	5.0%	5.6%	5.0%	5.5%	5.4%	6.2%	4.9%	5.6%
Native American	0.3%	0.3%	0.2%	0.2%	0.2%	2.6%	0.3%	0.3%	0.3%	0.3%	0.3%	1.0%	0.3%	0.3%	0.3%	0.3%	0.3%	1.0%
Asian	12.9%	12.9%	11.2%	7.2%	13.0%	3.6%	17.0%	16.5%	15.5%	12.5%	17.0%	11.4%	16.9%	16.3%	15.4%	12.5%	17.0%	11.7%
Other Race	2.2%	1.9%	1.6%	1.2%	2.2%	2.6%	2.9%	2.6%	2.4%	2.1%	2.9%	3.2%	2.9%	2.6%	2.4%	2.1%	2.9%	3.2%
Age 0 to 4	6.9%	7.5%	7.7%	8.2%	6.9%	6.8%	6.3%	6.7%	6.9%	7.3%	6.3%	6.0%	6.3%	6.7%	6.9%	7.2%	6.3%	6.0%
Seniors (65+)	10.7%	9.6%	9.5%	8.6%	10.7%	13.1%	17.6%	16.2%	16.1%	15.3%	17.6%	20.5%	17.6%	16.2%	16.1%	15.3%	17.6%	20.6%
Disabled	9.6%	9.9%	10.3%	10.1%	9.6%	11.3%	9.6%	9.8%	10.0%	10.0%	9.5%	10.6%	9.5%	9.8%	10.0%	10.0%	9.5%	10.6%
Male	49.6%	49.9%	49.7%	49.9%	49.6%	51.4%	49.8%	50.0%	49.8%	50.1%	49.7%	51.3%	49.8%	50.0%	49.8%	50.1%	49.7%	51.3%
Female	50.4%	50.1%	50.3%	50.1%	50.4%	48.6%	50.2%	50.0%	50.2%	49.9%	50.3%	48.7%	50.2%	50.0%	50.2%	49.9%	50.3%	48.7%
Households	**2.0%**	**68.7%**	**47.0%**	**23.1%**	**99.6%**	**0.4%**	**1.8%**	**67.2%**	**46.3%**	**22.5%**	**98.5%**	**1.5%**	**2.3%**	**66.6%**	**46.7%**	**22.4%**	**98.5%**	**1.4%**
Poverty 1*	14.6%	17.3%	18.6%	24.1%	14.6%	14.6%	14.5%	16.4%	17.1%	21.0%	14.4%	15.4%	14.4%	16.3%	17.0%	20.9%	14.4%	15.5%
Poverty 2*	9.0%	10.4%	11.3%	13.5%	9.0%	9.5%	9.0%	10.0%	10.4%	12.0%	9.0%	9.8%	9.0%	10.0%	10.3%	11.9%	9.0%	9.8%
Poverty 3*	8.5%	9.5%	10.0%	11.4%	8.5%	9.2%	8.5%	9.2%	9.4%	10.4%	8.5%	9.2%	8.5%	9.2%	9.4%	10.4%	8.5%	9.2%
Quintile 1	20.5%	23.8%	25.5%	30.6%	20.5%	22.7%	21.2%	23.5%	24.4%	28.4%	21.1%	23.8%	21.1%	23.4%	24.2%	28.3%	21.0%	23.8%
Quintile 2	20.2%	22.3%	23.2%	25.0%	20.2%	21.4%	21.0%	22.3%	22.8%	24.0%	21.0%	22.5%	21.0%	22.4%	22.8%	24.1%	21.0%	22.5%
Quintile 3	20.1%	20.6%	20.6%	20.0%	20.1%	20.4%	20.4%	20.6%	20.6%	20.0%	20.4%	20.9%	20.5%	20.7%	20.6%	20.0%	20.5%	20.8%
Quintile 4	19.7%	18.3%	17.5%	14.8%	19.7%	19.5%	19.4%	18.3%	17.8%	15.8%	19.4%	18.3%	19.5%	18.3%	17.9%	15.8%	19.5%	18.3%
Quintile 5	19.4%	15.0%	13.2%	9.6%	19.4%	16.0%	18.0%	15.2%	14.5%	11.8%	18.0%	14.5%	18.0%	15.2%	14.5%	11.8%	18.0%	14.6%

Source: SCAG

EXHIBIT 30 Roadway Noise Level 65 dB and Over in Plan Scenario
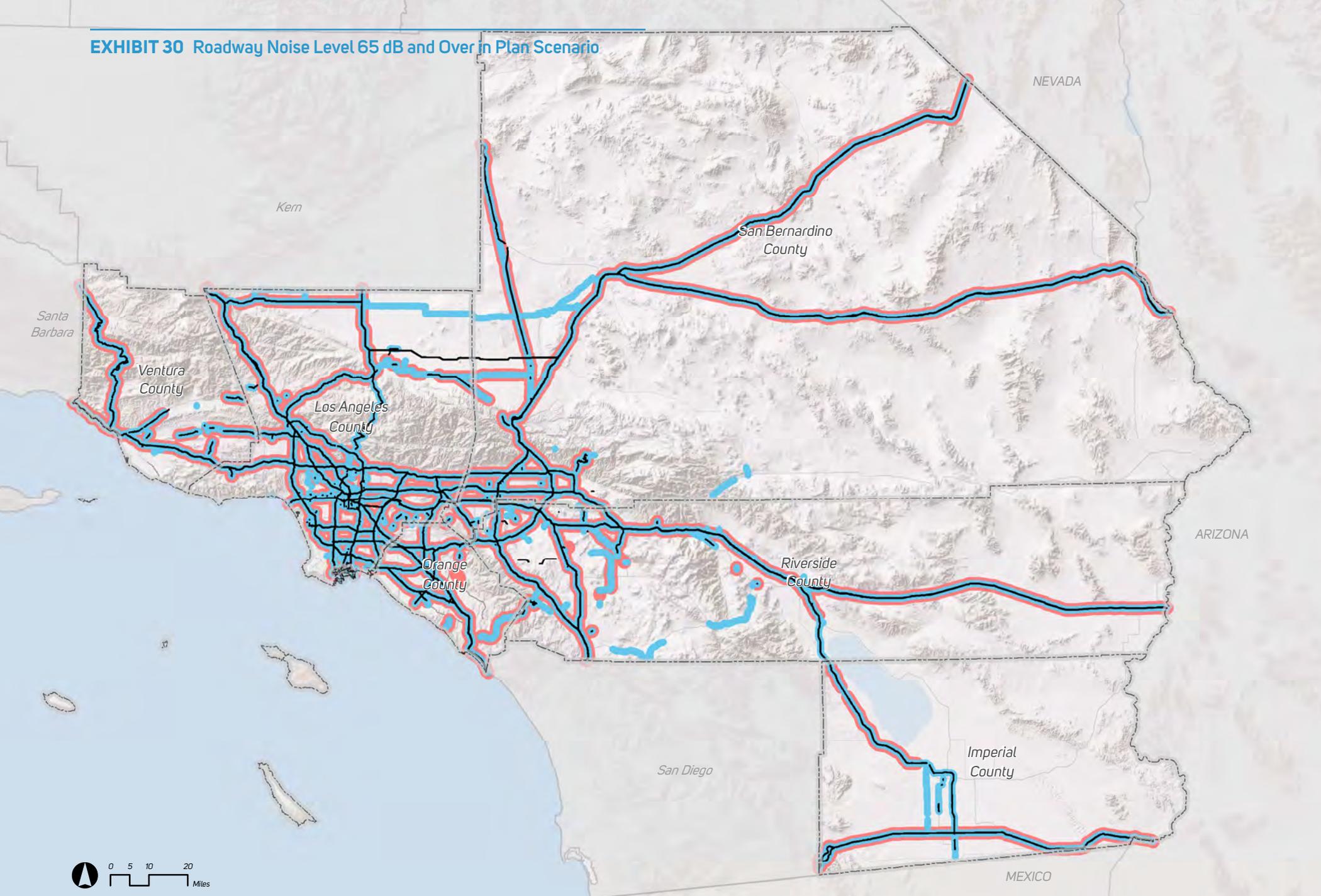
Legend:
- Roadway 65db-Area in 2012
- Roadway 65db-Area in 2040 Baseline
- Roadway 65db-Area in 2040 Plan

Source: SCAG, 2015

ACTIVE TRANSPORTATION HAZARDS

METHODOLOGY

Vehicle collision data for the State of California is maintained by the Transportation Injury Mapping System (TIMS). TIMS was established by a group of researchers at the Safe Transportation Research and Education Center (SafeTREC) at the University of California, Berkeley. In collaboration with the California Office of Traffic Safety (OTS) and a project called "California Statewide Integrated Traffic Records System" (SWITRS), SafeTREC developed an interactive web-based mapping system that displays historic vehicle collision data, including pedestrian and bicyclist involved collisions.

To understand the varying levels of hazard for active transportation users in the region, SCAG obtained collision data from the most recent year available, 2012. In this analysis, we are interested in identifying areas that show the highest concentrations of pedestrian and bicyclist involved vehicle collisions. In order to tabulate impacts for environmental justice groups, these areas were further studied to understand who lives in the neighborhoods that have seen the highest rates of these collisions A geospatial technique, specifically kernel density, was utilized to identify areas with the highest concentration of collisions based on the intensity and clustering pattern of all pedestrian or bicycle incidents. **EXHIBITS 31** and **32** illustrate the concentration of vehicle collisions involving bicyclists and pedestrians, respectively. The density of collisions and resulting severity of hazard is categorized into six groups reflecting relative risk: "None to Very Low," "Low," "Moderately Low," "Moderate," "Moderately High," and "High." This section will examine the economic and demographic conditions of the neighborhoods that experience the highest risk.

RESULTS

As seen through this analysis, the central Los Angeles and Santa Monica areas experienced the highest rate of hazard to bicyclists in 2012. Central Los Angeles also experienced the highest rates of pedestrian-involved collisions in that year. **FIGURES 84 - 86** provide additional details on the residents in these neighborhoods, specifically their racial/ethnic makeup and socioeconomic status. Key findings indicate that there is a higher concentration of Hispanics and Asians in high risk areas than is seen in the region as a whole. There is a lower share of seniors and children, but a higher instance of households below poverty or near poverty (Poverty 1, Poverty 2, Poverty 3). When looking at all households, it appears that neighborhoods with the highest risk areas also have a lower share of the highest earning households from Quintiles 4 and 5 than is seen in the region as a whole. This is seen for

areas that experience high risk for bicyclists, and more so for neighborhoods that have the highest risks for pedestrians. Please refer to the Environmental Justice Toolbox for strategies to reduce risk for active transportation users.

EXHIBIT 31 Bicyclist Involved Vehicle Collisions in 2012
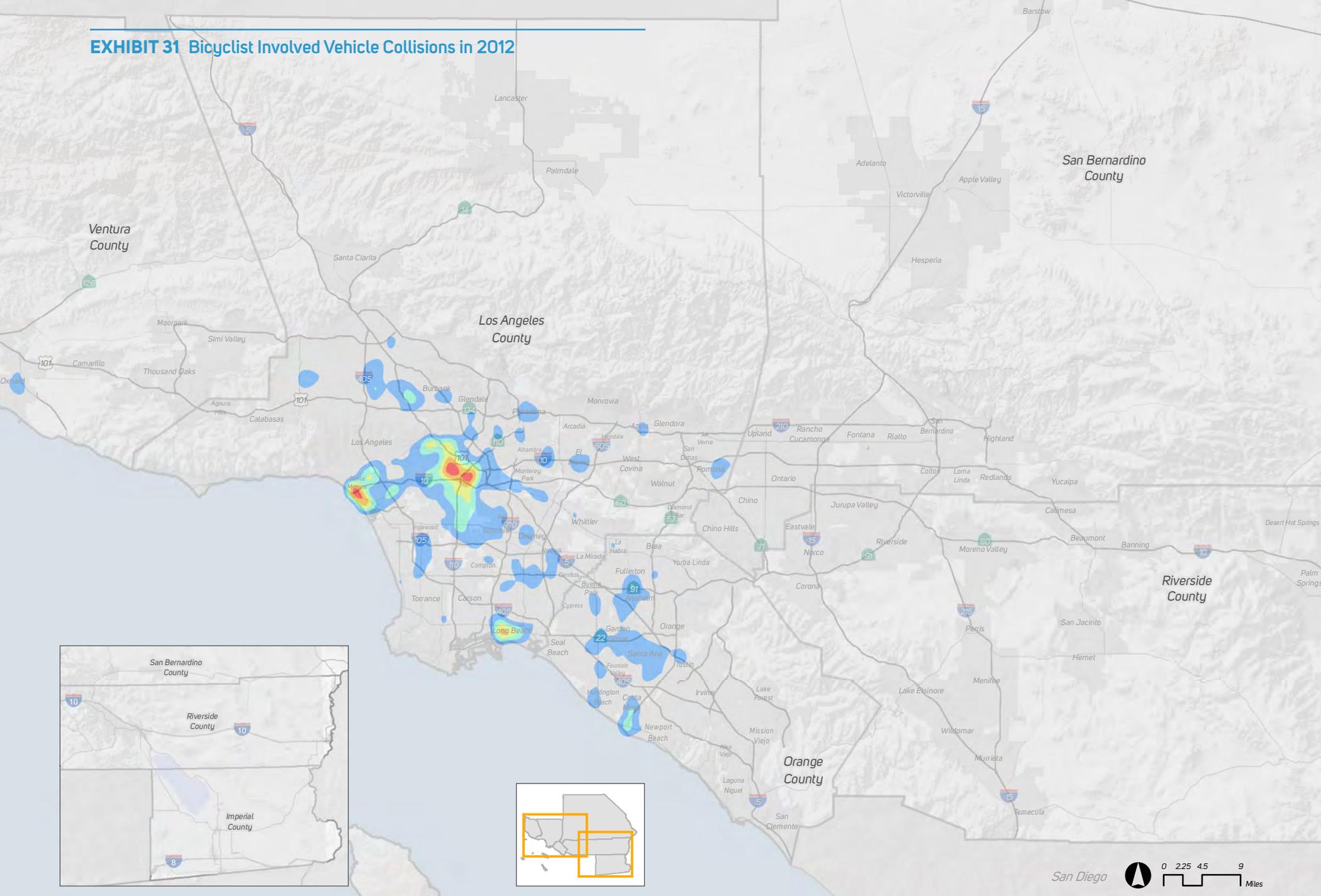
Legend:
- County Boundaries
- City Boundaries
- Freeway
- None to Very Low
- Low
- Moderately Low
- Moderate
- Moderately High
- High

(Source: SCAG, 2015)

EXHIBIT 32 Pedestrian Involved Vehicle Collisions in 2012
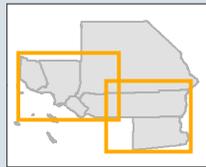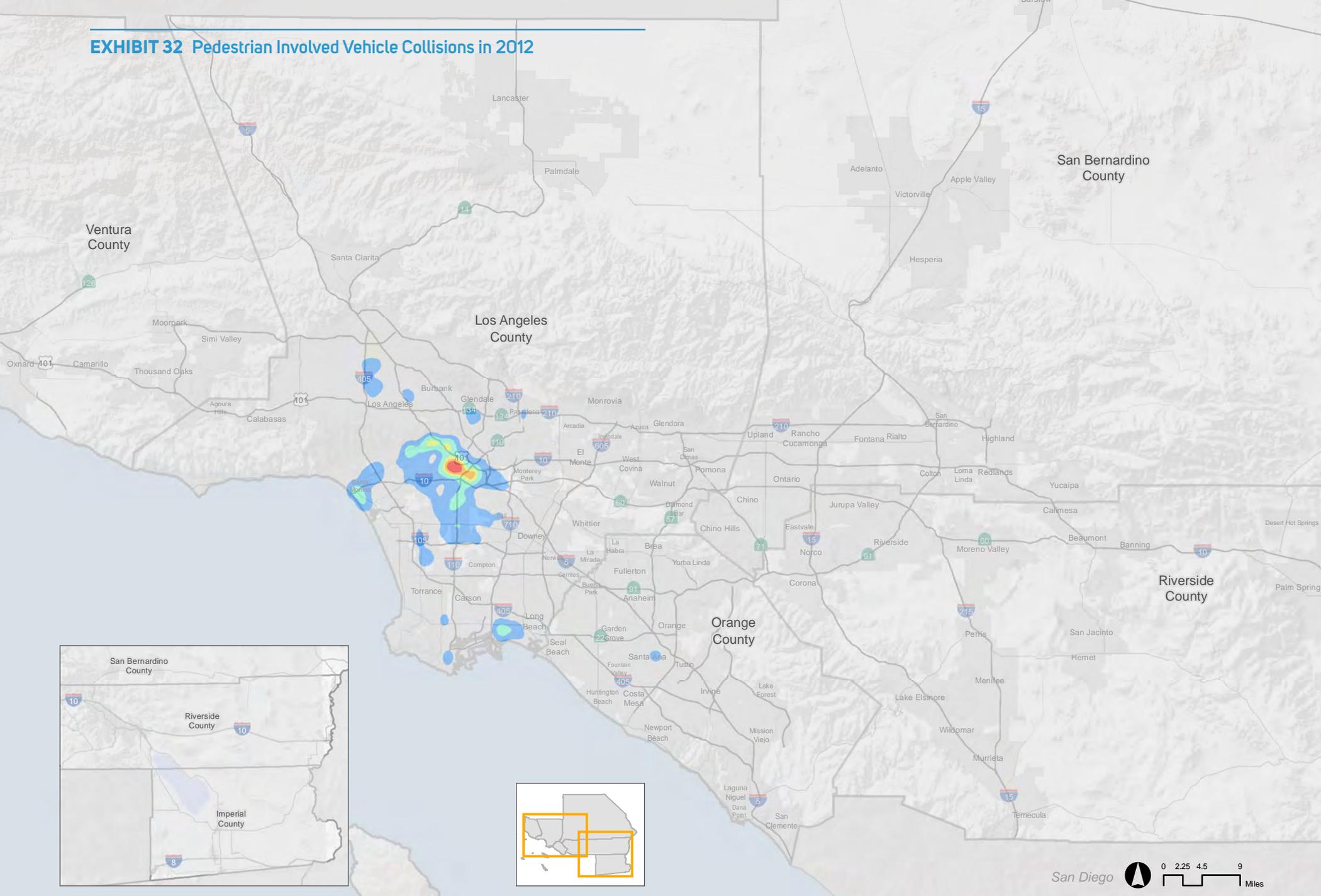
County Boundaries

City Boundaries

Freeway

None to Very Low

Low

Moderately Low

Moderate

Moderately High

High

(Source: SCAG, 2015)

FIGURE 84 2012 Population Breakdown of SCAG region and High Concentrated Area of Bike and Ped Accidents

Categories (top to bottom): Female, Male, Disabled, Seniors (65+), Age 5 to 14, Age 0 to 4, Other Race, Asian, Native American, African American, White, Hispanic

X-axis: 0% 20% 40% 60% 80%

Legend: Ped Accidents, Bike Accidents, Regional Share

Source: SCAG, SWITRS

FIGURE 85 2012 Household Poverty Breakdown of SCAG region and High Concentrated Area of Bike and Ped Accidents

Poverty 1*: Regional Share 14%, Bike Accidents 27%, Ped Accidents 26%
Poverty 2*: Regional Share 9%, Bike Accidents 14%, Ped Accidents 15%
Poverty 3*: Regional Share 8%, Bike Accidents 11%, Ped Accidents 11%

Legend: Regional Share, Bike Accidents, Ped Accidents

Source SCAG, SWITRS:

FIGURE 86 2012 Household Income Quintile Breakdown of SCAG region and High Concentrated Area of Bike and Ped Accidents

Quintile 1: Regional Share 20%, Bike Accidents 40%, Ped Accidents 41%
Quintile 2: Regional Share 20%, Bike Accidents 25%, Ped Accidents 30%
Quintile 3: Regional Share 20%, Bike Accidents 16%, Ped Accidents 16%
Quintile 4: Regional Share 20%, Bike Accidents 10%, Ped Accidents 8%
Quintile 5: Regional Share 20%, Bike Accidents 9%, Ped Accidents 5%

Legend: Regional Share, Bike Accidents, Ped Accidents

Source: SCAG, SWITRS

PUBLIC HEALTH IMPACTS

Unlike the field of medicine, public health does not focus on individual patients or the treatment of particular diseases. Rather, public health initiatives seek to prevent disease and injury while promoting health and prolonging life among the population as a whole. Public health outcomes are the product of the Social Determinants of Health (SDOH), or the circumstances in which people are born, grow up, live, work, play and age. Economic opportunities, government policies and the built environment all play a role in shaping these circumstances and influencing public health outcomes. The Office of Disease Prevention and Health Promotion's Healthy People 2020 Initiative organizes the SDOH into five key domains: (1) Social and Community Context; (2) Health and Health Care; (3) Economic Stability; (4) Education; and, (5) Neighborhood and Built Environment. A growing body of evidence links neighborhood and built environment characteristics such as transportation and land use patterns to health behaviors that can either support or discourage healthy, active and safe lifestyles. This has led to interest, both nationally and across California, in expanding consideration of health outcomes of regional land use and transportation planning efforts. This section will specifically look at some of the existing public health conditions experienced by low income and minority residents throughout the SCAG region, and will breakdown the demographics of the neighborhoods that experience the highest risk for health exposure.

METHODOLOGY

Existing health conditions are examined by looking at historic data showing ozone and particulate matter (PM) concentrations from the California Air Resources Board (ARB) from two different time periods, 2007-2009 and 2009-2011. Comparing these data elements helps to show overall trends throughout the region. Also included in this analysis will be health information from Cal/EPA's CalEnviroScreen Tool, which provides census tract level data on ozone concentrations in the air, $PM_{2.5}$ concentrations in the air, diesel PM emissions, high-hazard/high-volatility pesticides, toxic releases from facilities, traffic density, drinking water contaminants, toxic cleanup sites, groundwater threats, hazardous waste facilities and generators, impaired water bodies, solid waste sites, asthma emergency room (ER) visits, and low birth-weight infants. Populations that live in the highest risk areas in the SCAG region for each of these criteria are examined. Relative vulnerability in SCAG's environmental justice communities are also compared to the remainder of the State of California.

RESULTS

HISTORIC OZONE AND PM CONCENTRATIONS

ARB monitors and publishes air quality data for areas throughout the State of California and exists as an agency for the purposes of attaining and maintaining healthy air quality, protecting the public from exposure to toxic air contaminants, and providing innovative approaches for complying with air pollution rules and regulations[1]. Recently available data from ARB provide air quality information on ozone emissions and the concentration of particulate matter for years 2009-2011. To compare relative improvements from the last available year of data, 2007-2009, additional maps are presented showing differences over this time period.

The region's air quality has continued to improve in the last 40 years, and the implementation of the strategies recommended in the 2016 RTP/SCS will contribute significantly in the future to reduced emissions, further improved air quality, and bringing a healthy and livable environment to all people in the region. For the years 2007-2009, compared with air quality in 2009-2011, consistent with the trends, there are reductions at the regional level for both ozone and particulate emissions at both the regional level and for each area of concern.

EXHIBIT 33 shows the change from 2007-2009 to 2009-2011 in the number of days with ozone exposure exceeding the California 8-hour standard of 0.070 parts per million at the Zip Code Tabulation Area (ZCTA).

Areas in green indicate reductions from 2009-2011 to 2007-2009. Of the population living in areas that saw an increase during this period based on the most recent 2009-2013 ACS 5-Year Estimates, 69 percent are minority. Fourteen percent of households in these same areas are at or below the federal poverty level.

EXHIBIT 34 shows the change from 2007-2009 to 2009-2011 in the number of days with ozone exposure exceeding the California 8-hour standard of 0.070 parts per million at the Zip Code Tabulation Area (ZCTA). Of the population living in areas that saw an increase during this period, 66 percent are minority. 14 percent of households in these same areas are at or below the federal poverty level.

For reference, **EXHIBIT 35** shows the location of ARB's ozone monitoring stations throughout the SCAG region.

Alongside ozone emissions, ARB also tracks $PM_{2.5}$ for years 2007-2009 and 2009-2011. **EXHIBIT 36** depicts the areas in the region that incurred an increase in $PM_{2.5}$ emissions during this time period at the ZCTA geography. Most areas in the SCAG region saw an improvement, save some parts of north Los Angeles County and Imperial County. Of the population living in these areas based on the most recent 2009-2013 ACS 5-Year Estimates, 85 percent were minority, and 18 percent of households were at or below the federal poverty level. **EXHIBIT 37** also includes the locations of ARB's $PM_{2.5}$ monitoring stations, which is included here for reference.

EXHIBIT 33 Ozone Emissions Exceeding 8-Hour California Standard Change Over Time

Change in Daily 8-Hour Ozone Exposure in parts per million Exceeding California 8-Hour Standard of 0.070 parts per million (Difference from 2007-09 Average to 2009-11 Average at ZIP Code Tabulation Area)

- 0.20 or greater decrease
- 0.00 to 0.19 decrease
- 0.01 to 0.20 increase
- 0.21 to 0.40 increase
- 0.41 or greater increase

(Source: SCAG, ARB)

EXHIBIT 34 Ozone 8 Hour Days Change Over Time
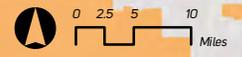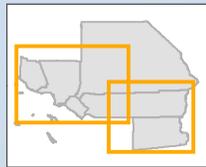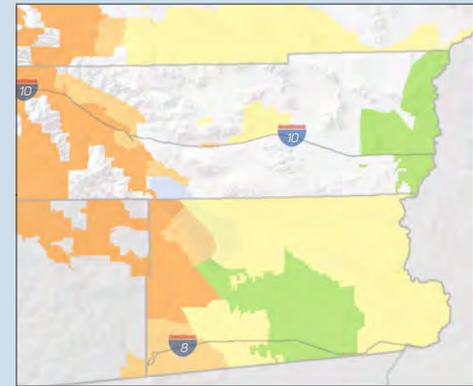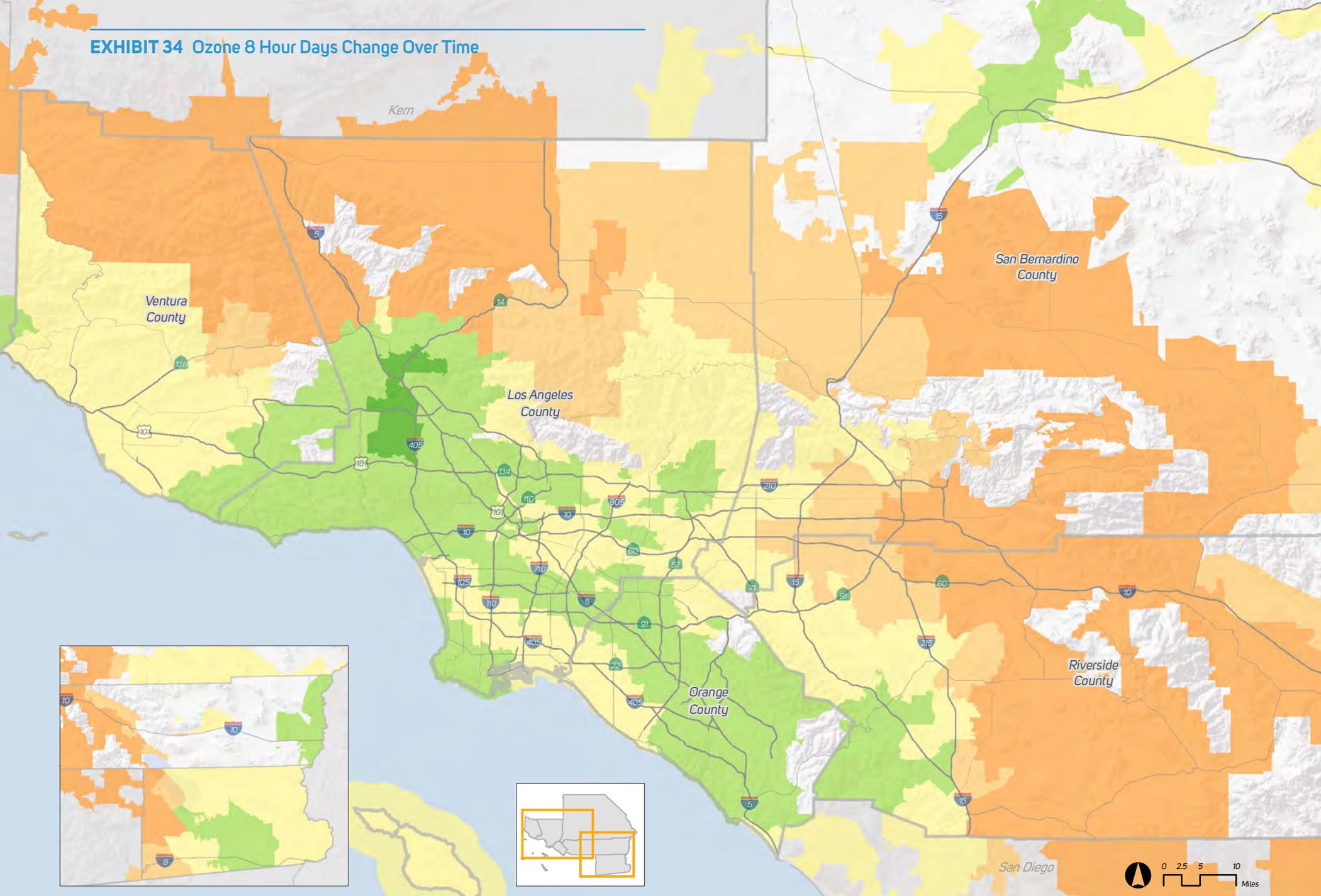
Change in the Number of Days with Ozone Exposure Exceeding California 8-Hour Standard of 0.070 parts per million
(Difference from 2007-09 Average to 2009-11 Average at ZIP Code Tabulation Area)

- 10 or greater decrease
- 0 to 9 decrease
- 1 to 10 increase
- 11 to 20 increase
- 21 or greater increase

(Source: SCAG, ARB)

EXHIBIT 35 Ozone Monitoring Stations

Ozone Monitoring Stations

(Source: SCAG, ARB)

EXHIBIT 36 PM$_{2.5}$ Change Over Time
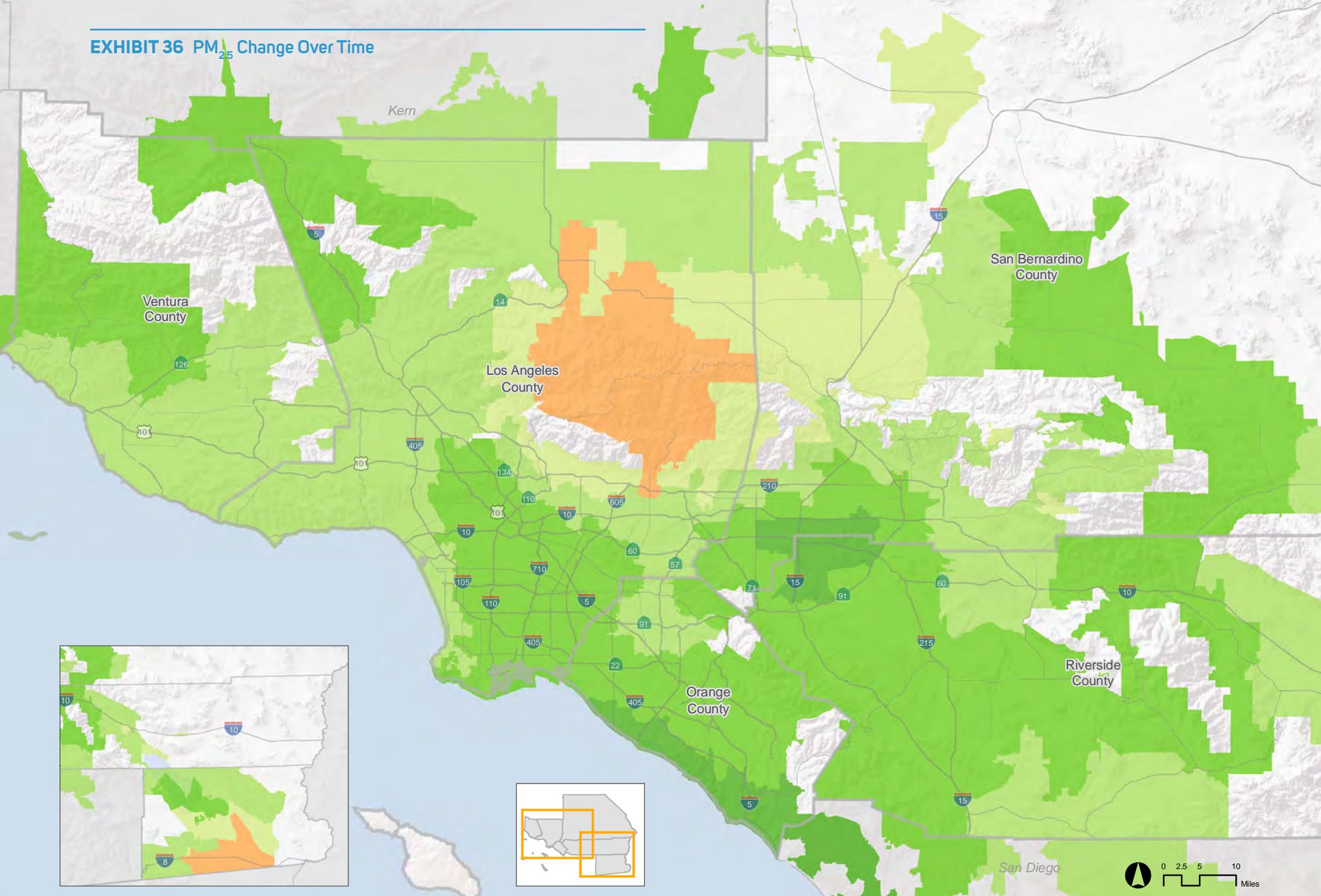
**Change in PM2.5 Emissions in micrograms per cubic meter
(Difference from 2007-09 Average to 2009-11 Average at ZIP Code Tabulation Area)**

- 2.7 or greater decrease
- 1.8 to 2.6 decrease
- 0.9 to 1.7 decrease
- 0.0 to 0.8 decrease
- 0.1 or greater increase

(Source: SCAG, ARB)

EXHIBIT 37 PM₂.₅ Monitoring Stations

PM2.5 Monitoring Stations

(Source: SCAG, ARB)

CALENVIROSCREEN PUBLIC HEALTH VULNERABILITY ANALYSIS

Cal/EPA's office of Environmental Health Hazard Assessment (OEHHA) released the latest version of its environmental health screening tool, CalEnviroScreen, in October 2014. This groundbreaking tool helps to identify cumulative impacts from a comprehensive set of health and environmental indicators for each census tract in the State of California, and it has been used to designate "SB 535 Disadvantaged Areas" that are eligible for projects funded from the state's Cap-and-Trade auctions. The tool uses data from twelve different types of pollution factors to determine the relative amount of exposure for each census tract, along with seven population and socioeconomic factors to assess vulnerability. SCAG will examine 14 of these criteria to assess existing public health conditions in the region.

Since CalEnviroScreen is meant to be used as a comparative tool, detailed data for each criterion will not be included. Instead, this analysis will show how the region performs relative to all census tracts in the state. Due to the variation in geographic unit (census tract vs. a combination of multiple census tracts), raw criterion scores were converted to density and then ranked low to high based upon each criterion's concentrations for a given area. Ranked percentiles for each tract and larger geographic unit were then determined to compare risk in a given geography to all other tracts in the state. The higher a score is on a scale of zero to 100, the higher the observed exposure. **TABLE 89** shows the performance

of the greater SCAG region for the selected criteria. SCAG performs relatively better for the instances of Asthma ER Visits than all other variables. In fact, we score in the bottom half of the state for the geographic density of $PM_{2.5}$ Concentrations in the Air; Drinking Water Contaminants; Traffic Density; Diesel PM Emissions; Groundwater Threats; Toxic Cleanup Sites; and Impaired Water Bodies. This could be due to the fact that the SCAG region is very large, and 98 percent of the region's population live in Urban Areas, which represent only 13 percent of the region's overall land area.

To get a better idea of how various communities in the SCAG region compare to the state, similar analyses were completed for Communities of Concern, SB 535 Disadvantaged Areas, Environmental Justice Areas, Urban Areas and Rural Areas. Communities of Concern show consistently some of the highest exposure, compared to the other geographies. SB 535 Disadvantaged Areas and Environmental Justice Areas perform in a pattern similar to the region as a whole. Urban Areas place in the 60th percentile and higher for risk in all variables, starting with Impaired Water Bodies and Low Birth-Weight Infants at 61.7, and culminating at 93.6 for High-Hazard, High-Volatility Pesticides. Rural Areas show lower risk in most variables, save Solid Water Sites and High-Hazard, High Volatility Pesticides. **FIGURE 87** visualizes this Table using a "spider chart," where a larger "spider web" indicates higher risk for a particular geography.

TABLE 89 Criterion Exposure by Geography Relative to all Census Tracts in the State

CalEnviroScreen Criteria	Greater SCAG Region	Communities of Concern	SB 535 Disadvantaged Areas	Environmental Justice Areas	Urban Areas	Rural Areas
Asthma ER Visits	13.6	64.6	16.4	13.7	63.6	2.5
$PM_{2.5}$ Concentrations in Air	13.8	60	15.6	13.4	65.7	2.6
Drinking Water Contaminants	17.8	69.2	20.7	16.8	73.7	2.6
Traffic Density	18.4	66.1	21.3	17.3	70.6	4.1
Diesel PM Emissions	21.3	70.6	26	21.4	69.4	3.5
Groundwater Threats	36.2	74.8	41.9	36.2	76.9	22.8
Toxic Cleanup Sites	46.4	80.4	52.1	46.3	76.7	33.9
Impaired Water Bodies	48.6	68.7	49.4	47.6	61.7	2.3
Hazardous Waste Facilities and Generators	51.7	86.5	59.7	51.8	84.1	34.3
Ozone Concentrations in Air	58.6	82.8	59.6	57.4	85.1	30.9
Toxic Releases from Facilities	59.5	86.8	65.4	58.3	83.7	10.3
Solid Waste Sites	67.4	85.3	69.6	66.9	84.2	59.0
High-Hazard, High-Volatility Pesticides	83.6	85.8	81.4	79.9	93.6	79.0
Low Birth-Weight Infants	92.3	52.8	13.8	87.3	61.7	2.3

Source: SCAG, Cal/EPA

FIGURE 87 Criterion Exposure by Geography Relative to all Census Tracts in the State

- Communities of Concern
- Environmental Justice Areas
- Greater SCAG Region
- Urban Areas
- SB 535 Disadvantaged Areas
- Rural Areas
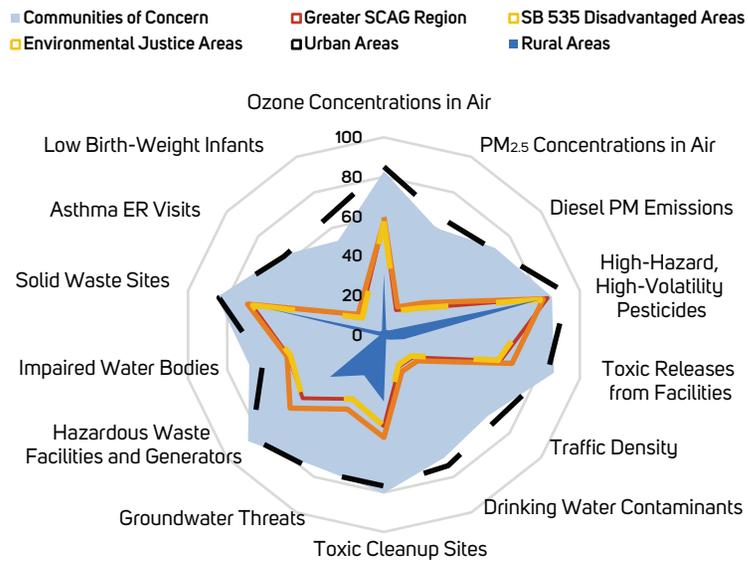
Source: SCAG

Along with examining how the region compares to all census tracts in the state, this appendix also looks at the areas with the highest risk relative only to the SCAG region by examining the population characteristics for the census tracts that place in the top 75th percentile and above in each of the measured CalEnviroScreen variables. **FIGURE 88** shows the race/ethnicity for populations that live in the highest risk areas for each of the exposure criteria. By comparing the breakdown of population by race/ethnicity in these areas with each group's share of the region as a whole, it is possible to determine if a particular group is experiencing relatively higher risk than others. For instance, Hispanics represent 46 percent of the population in 2012 in the greater SCAG region, but represent 60 percent of the population in areas that experience the highest amount of asthma-related emergency room visits and 38 percent of the population with the highest concentration of impaired water bodies. **FIGURE 89** lists the breakdown of households by income quintile for these same areas. **FIGURE 90** looks at the distribution of households below (or near) the poverty level.

From this information, we can see that some areas with the highest exposure to health risks are often predominately home to low-income and minority population groups. Please refer to SCAG's Environmental Justice Toolbox for more information on best practices regarding approaches for improving public health in local communities.

FIGURE 88 Population in the Highest Regional Exposure Areas by Race/Ethnicity

	Hispanic	White	African American	Native American	Asian	Other Race
Entire SCAG Region	46%	33%	6%	0%	13%	2%
Low Birth-Weight Infants	54%	22%	11%	0%	10%	2%
Asthma ER Visits	60%	17%	16%	0%	5%	2%
Solid Waste Sites	48%	31%	7%	0%	12%	2%
Impaired Water Bodies	38%	42%	5%	0%	11%	3%
Hazardous Waste Facilities and Generators	55%	23%	8%	0%	12%	2%
Groundwater Threats	51%	25%	6%	0%	16%	2%
Toxic Cleanup Sites	57%	23%	6%	0%	13%	2%
Drinking Water Contaminants	49%	31%	6%	0%	12%	2%
Traffic Density	47%	30%	6%	0%	14%	2%
Toxic Releases from Facilities	52%	23%	7%	0%	16%	2%
High-Hazard, High-Volatility Pesticides	47%	34%	3%	0%	12%	2%
Diesel PM Emissions	57%	20%	8%	0%	13%	2%
PM 2.5 Concentrations in Air	57%	19%	9%	0%	13%	2%
Ozone Concentrations in Air	48%	34%	7%	0%	8%	2%

Source: SCAG

FIGURE 89 Population in the Highest Regional Exposure Areas by Income Quintile

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Entire SCAG Region	20%	20%	20%	20%	20%
Low Birth-Weight Infants	23%	22%	20%	19%	16%
Asthma ER Visits	28%	24%	21%	17%	11%
Solid Waste Sites	20%	20%	20%	20%	20%
Impaired Water Bodies	17%	17%	18%	21%	26%
Hazardous Waste Facilities and Generators	22%	21%	20%	19%	18%
Groundwater Threats	22%	21%	20%	19%	18%
Toxic Cleanup Sites	22%	21%	20%	19%	18%
Drinking Water Contaminants	19%	21%	21%	21%	18%
Traffic Density	19%	19%	20%	21%	21%
Toxic Releases from Facilities	19%	20%	20%	21%	19%
High-Hazard, High-Volatility Pesticides	16%	18%	20%	22%	24%
Diesel PM Emissions	24%	22%	20%	18%	16%
PM2.5 Concentrations in Air	23%	22%	20%	19%	17%
Ozone Concentrations in Air	19%	21%	21%	21%	17%

Source: SCAG

FIGURE 90 Population in the Highest Regional Exposure Areas at or near the Federal Poverty Level

Category	Poverty 1	Poverty 2	Poverty 3
Entire SCAG Region	14%	9%	8%
Low Birth-Weight Infants	17%	10%	9%
Asthma ER Visits	21%	12%	10%
Solid Waste Sites	14%	9%	8%
Impaired Water Bodies	12%	7%	7%
Hazardous Waste Facilities and Generators	15%	10%	9%
Groundwater Threats	15%	10%	9%
Toxic Cleanup Sites	16%	10%	9%
Drinking Water Contaminants	13%	9%	9%
Traffic Density	14%	9%	8%
Toxic Releases from Facilities	14%	9%	9%
High-Hazard, High-Volatility Pesticides	11%	7%	7%
Diesel PM Emissions	18%	10%	9%
PM2.5 Concentrations in Air	17%	10%	9%
Ozone Concentrations in Air	14%	9%	9%

Source: SCAG

RAIL-RELATED IMPACTS

SCAG examined rail-related environmental justice impacts for the first time in its 2012 RTP/SCS, which provided detailed information on populations living in areas adjacent to railroads and grade separation projects. This section updates that analysis with new demographic data and provides information on considerations for local jurisdictions.

METHODOLOGY

- Estimate the distribution of environmental justice groups within 500-foot of railroads.

- Estimate the distribution of environmental justice groups within 500-foot of grade separation projects.

- Estimate the distribution of key environmental justice populations within 500-foot of railroads, using area-weighted interpolation methodology.

- Existing and Projected Impacts on Grade Separation Project Areas.

RESULTS

The following tables and figures present a comparison of the distribution of environmental justice demographic groups in the railroad adjacent areas with those in the greater SCAG region for Base Year 2012 and Plan year 2040 planned projection year. As indicated in **TABLE 90** and **FIGURES 91 - 96**, most railroad adjacent areas have a higher concentration of environmental justice population groups than the regional average, except for the following: African Americans, Native Americans, Asians, those identifying as "some other race" or "more than one race" ("Other Races"), and seniors age 65 and older.

It is projected that the share of most environmental justice population groups in these areas will increase in 2040, both under Baseline and Plan conditions, as compared to Base Year 2012. Exceptions are African Americans, children age 0-4, disabled individuals, and households in poverty or near poverty (Poverty 1-3).

Although there are no significant differences in the share of environmental justice population groups between 2040 Baseline and 2040 Plan, there is a disproportionately higher concentration of environmental justice population groups in the railroad adjacent areas both in Base Year 2012 and for 2040.

TABLE 90 Distribution of Environmental Justice Demographic Groups in the Railroad Adjacent Areas

	Within 500-Foot of Railroads			SCAG Region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Population						
Hispanic	63.1%	64.2%	63.9%	45.7%	52.3%	52.3%
White	18.6%	14.3%	14.4%	32.7%	22.4%	22.4%
African American	6.1%	4.7%	4.7%	6.4%	5.3%	5.3%
Native American	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Asian	10.2%	14.1%	14.3%	12.5%	16.4%	16.4%
Other Races	1.6%	2.4%	2.4%	2.4%	3.1%	3.1%
Age 0 to 4	7.7%	7.0%	6.9%	6.7%	6.2%	6.2%
Seniors (65+)	9.5%	15.8%	16.1%	11.5%	18.1%	18.1%
Disabled	9.8%	9.6%	9.6%	9.3%	9.4%	9.4%
Households						
Poverty 1*	15.4%	15.2%	15.1%	13.8%	13.9%	13.9%
Poverty 2*	9.9%	9.6%	9.6%	8.7%	8.7%	8.7%
Poverty 3*	9.4%	9.1%	9.1%	8.3%	8.4%	8.4%
Quintile 1	21.3%	21.8%	21.6%	19.8%	20.5%	20.5%
Quintile 2	21.7%	22.0%	21.9%	19.8%	20.6%	20.6%
Quintile 3	21.0%	21.0%	21.0%	19.9%	20.4%	20.4%
Quintile 4	19.5%	19.1%	19.2%	20.1%	19.8%	19.8%
Quintile 5	16.6%	16.2%	16.3%	20.4%	18.7%	18.7%
Hispanic Quintile 1	12.1%	13.0%	12.9%	8.0%	10.0%	10.0%
White Quintile 1	4.1%	3.1%	3.1%	6.7%	4.5%	4.5%
African American Quintile 1	2.4%	1.8%	1.8%	2.2%	1.8%	1.8%
Native American Quintile 1	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 1	2.3%	3.3%	3.3%	2.4%	3.4%	3.4%
Other Race Quintile 1	0.3%	0.5%	0.5%	0.4%	0.6%	0.6%
Hispanic Quintile 2	13.3%	14.2%	14.1%	8.7%	11.0%	11.0%
White Quintile 2	4.4%	3.3%	3.3%	7.0%	4.7%	4.7%
African American Quintile 2	1.7%	1.3%	1.2%	1.6%	1.3%	1.3%
Native American Quintile 2	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 2	1.8%	2.7%	2.7%	2.0%	2.9%	2.8%
Other Race Quintile 2	0.3%	0.5%	0.5%	0.4%	0.6%	0.6%

TABLE 90 Distribution of Environmental Justice Demographic Groups in the Railroad Adjacent Areas Continued

	Within 500-Foot of Railroads			SCAG Region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Hispanic Quintile 3	11.8%	12.5%	12.5%	7.6%	9.8%	9.8%
White Quintile 3	5.2%	3.8%	3.8%	8.1%	5.4%	5.4%
African American Quintile 3	1.4%	1.1%	1.1%	1.4%	1.2%	1.2%
Native American Quintile 3	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 3	2.2%	3.1%	3.1%	2.3%	3.3%	3.3%
Other Race Quintile 3	0.3%	0.4%	0.4%	0.4%	0.6%	0.6%
Hispanic Quintile 4	9.3%	9.8%	9.8%	6.0%	7.8%	7.8%
White Quintile 4	6.1%	4.4%	4.4%	9.6%	6.4%	6.4%
African American Quintile 4	1.3%	0.9%	0.9%	1.3%	1.1%	1.1%
Native American Quintile 4	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 4	2.5%	3.6%	3.6%	2.8%	4.0%	4.0%
Other Race Quintile 4	0.2%	0.4%	0.4%	0.3%	0.5%	0.5%
Hispanic Quintile 5	6.0%	6.3%	6.4%	4.1%	5.2%	5.2%
White Quintile 5	6.7%	4.9%	4.9%	11.9%	7.9%	7.9%
African American Quintile 5	0.9%	0.7%	0.7%	1.0%	0.8%	0.8%
Native American Quintile 5	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 5	2.7%	3.8%	3.9%	3.1%	4.4%	4.4%
Other Race Quintile 5	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%

Source: SCAG
* Poverty 1 = Household below poverty; Poverty 2 = Household 100%~149% of poverty level; Poverty 3 = Household 150%~199% of poverty level

FIGURE 91 Breakdown of Population in the Railroad Adjacent Areas (Base Year 2012)

Disabled
- Within 500-Foot of Railroads: 9.8%
- SCAG Region: 9.3%

Seniors (65+)
- Within 500-Foot of Railroads: 9.5%
- SCAG Region: 11.5%

Age 0 to 4
- Within 500-Foot of Railroads: 7.7%
- SCAG Region: 6.7%

Other Race
- Within 500-Foot of Railroads: 1.6%
- SCAG Region: 2.4%

Asian
- Within 500-Foot of Railroads: 10.2%
- SCAG Region: 12.5%

Native American
- Within 500-Foot of Railroads: 0.3%
- SCAG Region: 0.3%

African American
- Within 500-Foot of Railroads: 6.1%
- SCAG Region: 6.4%

White
- Within 500-Foot of Railroads: 18.6%
- SCAG Region: 32.7%

Hispanic
- Within 500-Foot of Railroads: 63.1%
- SCAG Region: 45.7%

■ Within 500-Foot of Railroads　■ SCAG Region

Source: SCAG

FIGURE 93 Breakdown of Poverty Households in the Railroad Adjacent Areas (Base Year 2012)

Poverty 1*
- Within 500-Foot of Railroads: 15.4%
- SCAG Region: 13.8%

Poverty 2*
- Within 500-Foot of Railroads: 9.9%
- SCAG Region: 8.7%

Poverty 3*
- Within 500-Foot of Railroads: 9.4%
- SCAG Region: 8.3%

■ Within 500-Foot of Railroads　■ SCAG Region

Source: SCAG

FIGURE 92 Breakdown of Population in the Railroad Adjacent Areas (2040 Plan)

Disabled
- Within 500-Foot of Railroads: 9.6%
- SCAG Region: 9.4%

Seniors (65+)
- Within 500-Foot of Railroads: 16.1%
- SCAG Region: 18.1%

Age 0 to 4
- Within 500-Foot of Railroads: 6.9%
- SCAG Region: 6.2%

Other Race
- Within 500-Foot of Railroads: 2.4%
- SCAG Region: 3.1%

Asian
- Within 500-Foot of Railroads: 14.3%
- SCAG Region: 16.4%

Native American
- Within 500-Foot of Railroads: 0.3%
- SCAG Region: 0.4%

African American
- Within 500-Foot of Railroads: 4.7%
- SCAG Region: 5.3%

White
- Within 500-Foot of Railroads: 14.4%
- SCAG Region: 22.4%

Hispanic
- Within 500-Foot of Railroads: 63.9%
- SCAG Region: 52.3%

■ Within 500-Foot of Railroads　■ SCAG Region

Source: SCAG

FIGURE 94 Breakdown of Poverty Households in the Railroad Adjacent Areas (2040 Plan)

Poverty 1*
- Within 500-Foot of Railroads: 15.1%
- SCAG Region: 13.9%

Poverty 2*
- Within 500-Foot of Railroads: 9.6%
- SCAG Region: 8.7%

Poverty 3*
- Within 500-Foot of Railroads: 9.1%
- SCAG Region: 8.4%

■ Within 500-Foot of Railroads　■ SCAG Region
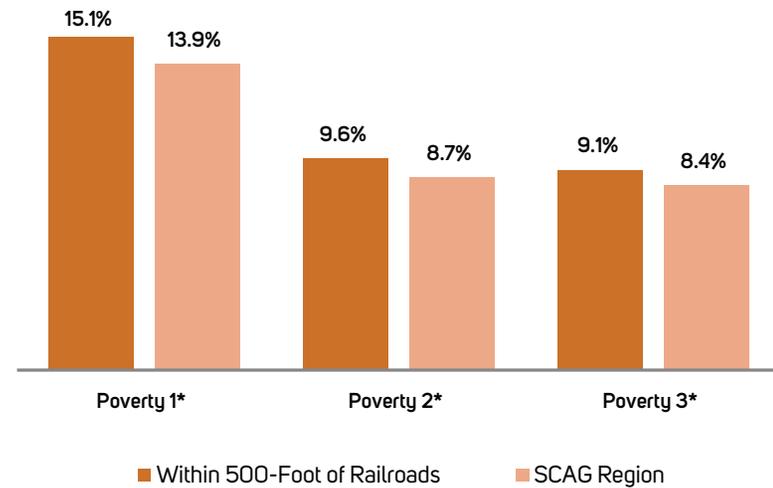
Source: SCAG

FIGURE 95 Breakdown of Households Income Quintile in the Railroad Adjacent Areas (Base Year 2012)

Quintile 1
Quintile 2
Quintile 3
Quintile 4
Quintile 5

KEY:
SCAG Region
Within 500-Foot
of Railroads
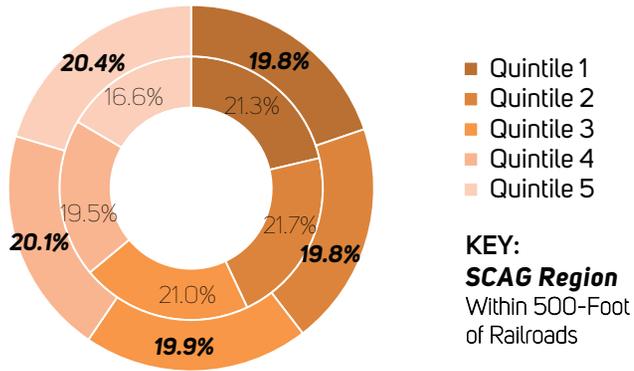
Source: SCAG

The following tables and figures present a comparison of the distribution of environmental justice demographic groups in the areas adjacent to grade separation projects with those in the SCAG region for Base Year 2012 and for 2040. As indicated in the **TABLE 91** and **FIGURES 97 - 102**, there is a higher concentration of minority population overall in the areas adjacent to grade separation projects than the regional average.

It is projected that the share of environmental justice population groups in the areas adjacent to grade separation projects will increase in 2040, under both Baseline and Plan scenarios, compared with Base Year 2012. Exceptions are children age 0-4 and disabled individuals. There are no significant differences in the share of environmental justice population groups between the 2040 Baseline and the 2040 Plan.

FIGURE 96 Breakdown of Households Income Quintile in the Railroad Adjacent Areas (2040 Plan)

Quintile 1
Quintile 2
Quintile 3
Quintile 4
Quintile 5

KEY:
SCAG Region
Within 500-Foot
of Railroads
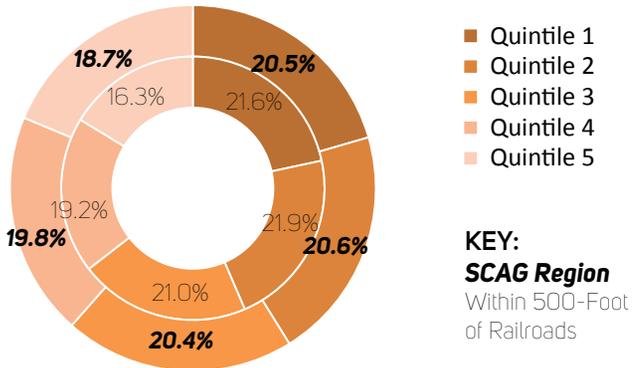
Source: SCAG

TABLE 91 Distribution of Environmental Justice Demographic Groups in the Areas Adjacent to Grade Separation Projects

	Within 500-Foot of Grade Separation Projects			SCAG region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Population						
Hispanic	62.0%	64.2%	64.2%	45.7%	52.3%	52.3%
White	18.2%	13.5%	13.3%	32.7%	22.4%	22.4%
African American	2.8%	3.3%	3.4%	6.4%	5.3%	5.3%
Native American	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Asian & PI	15.1%	16.6%	16.7%	12.5%	16.4%	16.4%
Other Races	1.6%	2.1%	2.1%	2.4%	3.1%	3.1%
Age 0 to 4	7.5%	6.9%	6.9%	6.7%	6.2%	6.2%
Seniors (65+)	9.8%	15.5%	15.5%	11.5%	18.1%	18.1%
Disabled	11.0%	10.4%	10.4%	9.3%	9.4%	9.4%
Households						
Poverty 1*	12.7%	12.9%	12.9%	13.8%	13.9%	13.9%
Poverty 2*	8.7%	8.7%	8.7%	8.7%	8.7%	8.7%
Poverty 3*	8.8%	8.8%	8.8%	8.3%	8.4%	8.4%
HH Quintile 1	18.5%	19.3%	19.3%	19.8%	20.5%	20.5%
HH Quintile 2	20.6%	21.2%	21.2%	19.8%	20.6%	20.6%
HH Quintile 3	21.4%	21.5%	21.5%	19.9%	20.4%	20.4%
HH Quintile 4	20.8%	20.4%	20.4%	20.1%	19.8%	19.8%
HH Quintile 5	18.8%	17.7%	17.6%	20.4%	18.7%	18.7%
Hispanic Quintile 1	10.3%	11.3%	11.2%	8.0%	10.0%	10.0%
White Quintile 1	3.8%	3.0%	2.9%	6.7%	4.5%	4.5%
African American Quintile 1	0.8%	0.9%	1.0%	2.2%	1.8%	1.8%
Native American Quintile 1	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 1	3.3%	3.7%	3.7%	2.4%	3.4%	3.4%
Other Race Quintile 1	0.3%	0.4%	0.4%	0.4%	0.6%	0.6%
Hispanic Quintile 2	12.5%	13.7%	13.7%	8.7%	11.0%	11.0%
White Quintile 2	4.3%	3.2%	3.2%	7.0%	4.7%	4.7%
African American Quintile 2	0.7%	0.8%	0.8%	1.6%	1.3%	1.3%
Native American Quintile 2	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 2	2.6%	3.0%	3.0%	2.0%	2.9%	2.8%
Other Race Quintile 2	0.3%	0.4%	0.5%	0.4%	0.6%	0.6%

TABLE 91 Distribution of Environmental Justice Demographic Groups in the Areas Adjacent to Grade Separation Projects Continued

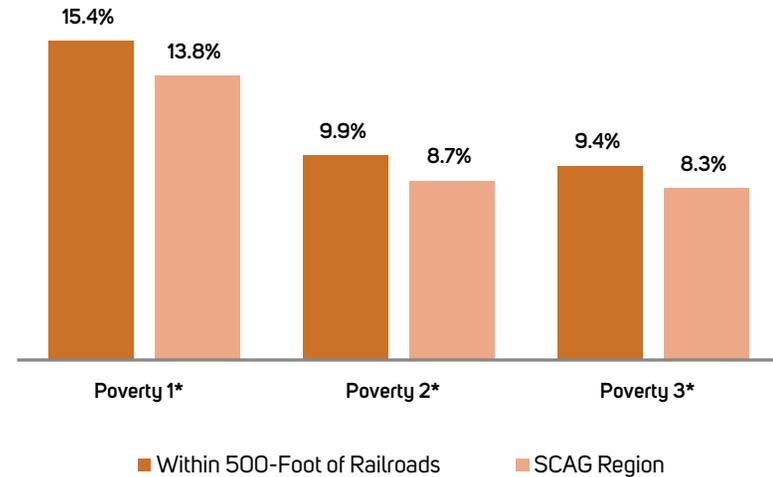|	Within 500-Foot of Grade Separation Projects			SCAG region		
	Base Year 2012	2040 Baseline	2040 Plan	Base Year 2012	2040 Baseline	2040 Plan
Hispanic Quintile 3	12.2%	13.0%	13.1%	7.6%	9.8%	9.8%
White Quintile 3	5.0%	3.6%	3.6%	8.1%	5.4%	5.4%
African American Quintile 3	0.7%	0.7%	0.8%	1.4%	1.2%	1.2%
Native American Quintile 3	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 3	3.2%	3.6%	3.6%	2.3%	3.3%	3.3%
Other Race Quintile 3	0.2%	0.4%	0.4%	0.4%	0.6%	0.6%
Hispanic Quintile 4	9.9%	10.7%	10.7%	6.0%	7.8%	7.8%
White Quintile 4	6.1%	4.3%	4.2%	9.6%	6.4%	6.4%
African American Quintile 4	0.6%	0.7%	0.8%	1.3%	1.1%	1.1%
Native American Quintile 4	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 4	3.9%	4.3%	4.3%	2.8%	4.0%	4.0%
Other Race Quintile 4	0.2%	0.3%	0.3%	0.3%	0.5%	0.5%
Hispanic Quintile 5	6.5%	6.8%	6.8%	4.1%	5.2%	5.2%
White Quintile 5	6.4%	4.4%	4.4%	11.9%	7.9%	7.9%
African American Quintile 5	0.6%	0.7%	0.7%	1.0%	0.8%	0.8%
Native American Quintile 5	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian Quintile 5	5.0%	5.3%	5.3%	3.1%	4.4%	4.4%
Other Race Quintile 5	0.3%	0.4%	0.3%	0.3%	0.3%	0.3%

Source: SCAG
* Poverty 1 = Household below poverty; Poverty 2 = Household 100%~149% of poverty level; Poverty 3 = Household 150%~199% of poverty level

FIGURE 97 Breakdown of Population in the Areas Adjacent to Grade Separation Projects (Base Year 2012)
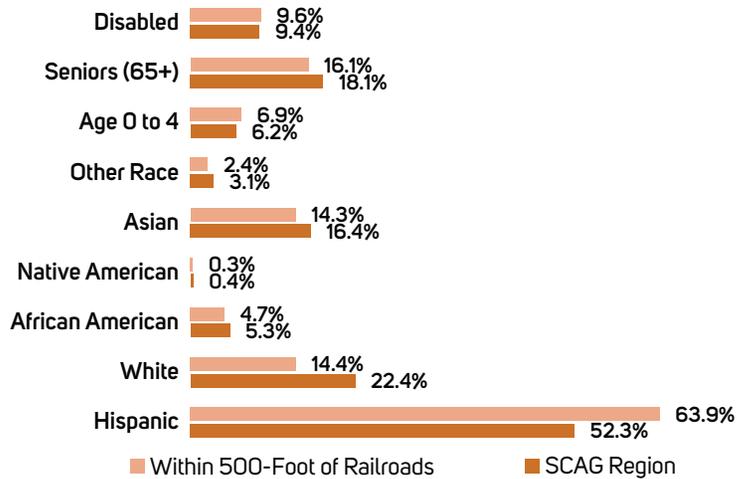

Within 500-Foot of Grade Separation Projects
SCAG Region

	Within 500-Foot	SCAG Region
Disabled	11.0%	9.3%
Seniors (65+)	9.8%	11.5%
Age 0 to 4	7.5%	6.7%
Other Race	1.6%	2.4%
Asian	15.1%	12.5%
Native American	0.3%	0.3%
African American	2.8%	6.4%
White	18.2%	32.7%
Hispanic	62.0%	45.7%
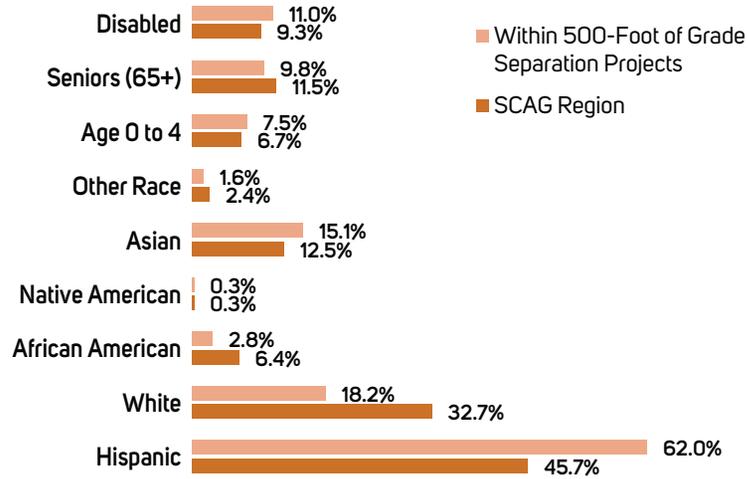
Source: SCAG

FIGURE 99 Breakdown of Poverty Households in the Areas Adjacent to Grade Separation Projects (Base Year 2012)

	Within 500-Foot of Grade Separation Projects	SCAG Region
Poverty 1*	12.7%	13.8%
Poverty 2*	8.7%	8.7%
Poverty 3*	8.8%	8.3%

Within 500-Foot of Grade Separation Projects
SCAG Region
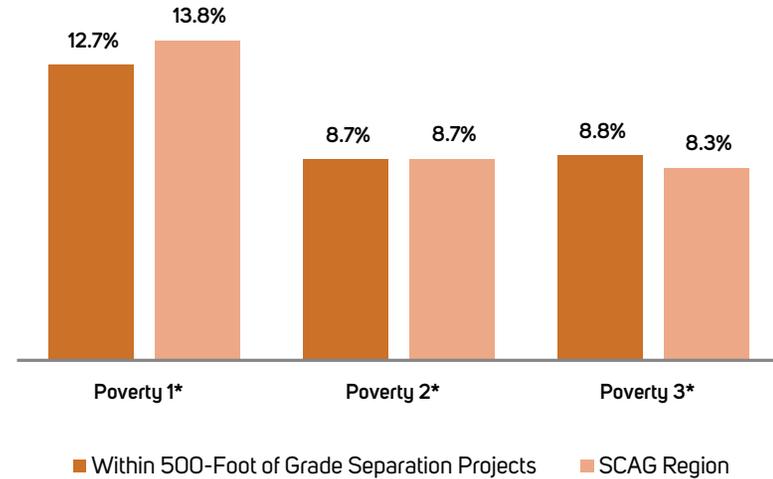
Source: SCAG

FIGURE 98 Breakdown of Population in the Areas Adjacent to Grade Separation Projects (2040 Plan)

Within 500-Foot of Grade Separation Projects
SCAG Region

	Within 500-Foot	SCAG Region
Disabled	10.4%	9.4%
Seniors (65+)	15.5%	18.1%
Age 0 to 4	6.9%	6.2%
Other Race	2.1%	3.1%
Asian	16.7%	16.4%
Native American	0.3%	0.4%
African American	3.4%	5.3%
White	13.3%	22.4%
Hispanic	64.2%	52.3%
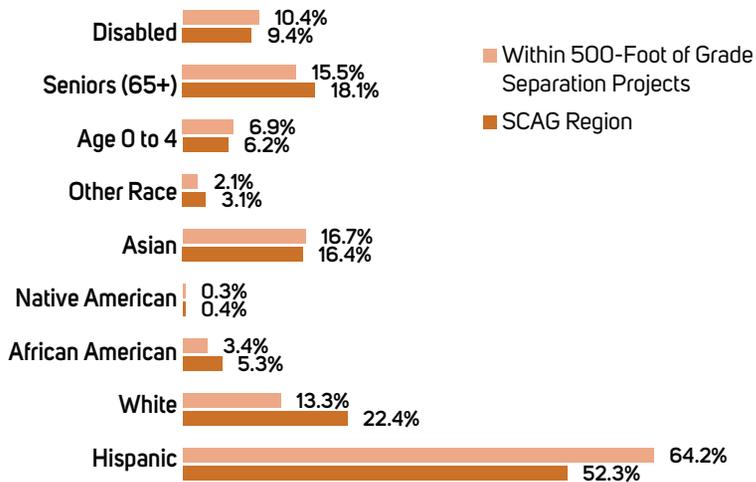
Source: SCAG

FIGURE 100 Breakdown of Poverty Households in the Areas Adjacent to Grade Separation Projects (2040 Plan)

	Within 500-Foot of Grade Separation Projects	SCAG Region
Poverty 1*	12.9%	13.9%
Poverty 2*	8.7%	8.7%
Poverty 3*	8.8%	8.4%

Within 500-Foot of Grade Separation Projects
SCAG Region
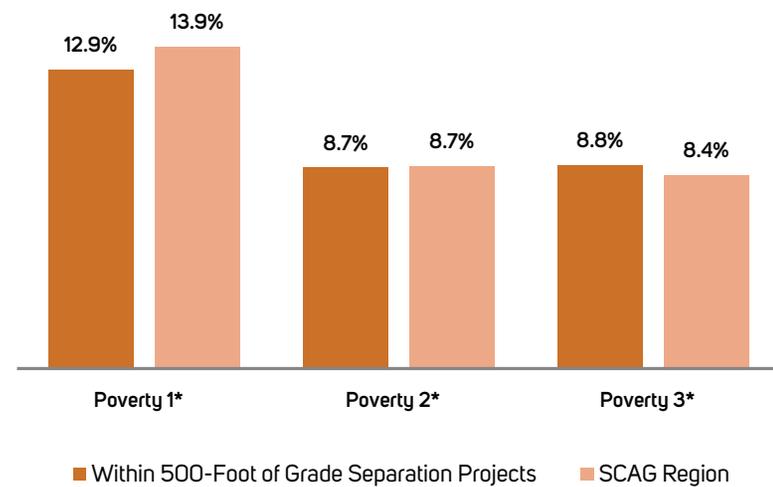
Source: SCAG

FIGURE 101 Breakdown of Households Income Quintile in the Areas Adjacent to Grade Separation Projects (Base Year 2012)

Quintile 1
Quintile 2
Quintile 3
Quintile 4

KEY:
SCAG Region
Within 500-Foot of
Grade Separation Projects
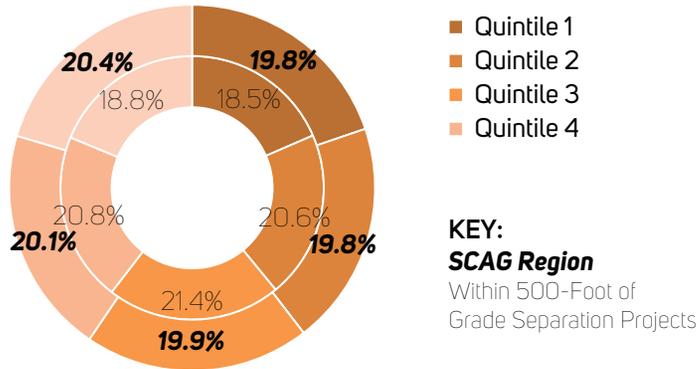
Source: SCAG

FIGURE 102 Breakdown of Households Income Quintile in the Areas Adjacent to Grade Separation Projects (2040 Plan)

Quintile 1
Quintile 2
Quintile 3
Quintile 4

KEY:
SCAG Region
Within 500-Foot of
Grade Separation Projects
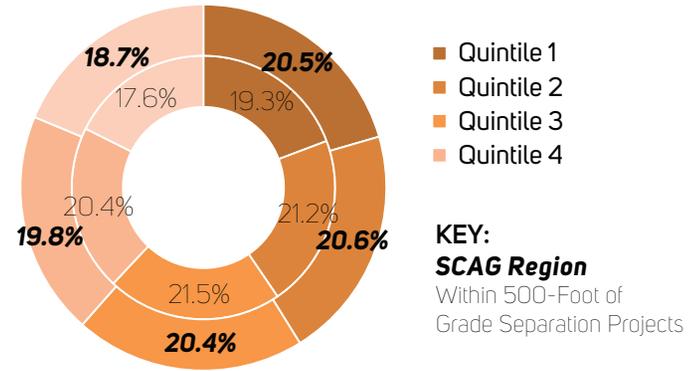
Source: SCAG

CLIMATE VULNERABILITY

As impacts of climate change manifest themselves through droughts, warming trends, and extreme weather events, governments at all levels increasingly must focus on climate change adaptation, thereby limiting the negative effects of climate change on communities. California Governor Brown recently underscored the need for governments to commit to significant carbon reductions, noting "we have to redesign our cities, our homes, and our cars." [2] Mitigation of and adaptation to climate change necessitates innovative transportation and land-use planning strategies.

With respect to environmental justice; the climate mitigation and adaptation literature makes it clear that environmental justice populations are often those most vulnerable and might have the most to gain from climate mitigation and adaptation strategies .[3] Care must be taken when identifying climate strategies using transportation and land use policies to achieve a full accounting of the distribution of costs and impacts.

Climate change adaption efforts in the SCAG region must be tailored to two climate regions, both of which face threats from climate change: the South Coast Region and the Desert region. The impacts of climate change in the SCAG region are of significant local concern as evidenced by its large population (18 million), warm and arid climate, and communities in coastal / low lying areas. The State of California has identified potential impacts of climate change for these two sub-regions: sea-level rise and public health concerns from health and air pollution in the South Coast; public health, social vulnerability, and biodiversity threats in the Desert Region; and water supply in both regions.[4] Each region will have slightly different climate change exposure characteristics that constitute its "vulnerability profile."

TABLE 92 identifies key climate change effects, their associated health impacts, and specific populations at higher risk of bearing the impacts. This table was adapted from the climate plans from the San Francisco Department of Public Health[5] and Toronto Public Health.[6]

For example, in the SCAG region, extreme heat is of great concern. Racial and ethnic minority groups and lower income households have been found to suffer more during extreme heat waves. These groups have lower access than other population segments to common adaptation options including tree canopy (which provides shading and is correlated with a decreased urban heat island effect) and car ownership to access public cooling centers.[7] The elderly, immigrant populations, and those in rural locations may have lower awareness of and access to cooling centers.[8] Other examples include breathing worse air due to an increase in air pollution exposure for lower price housing along and adjacent to noisy busy roadways; reduced access to fresh fruit and vegetables, and even paying more for similar food products; and fewer job opportunities in sectors that employ significant proportions of low-income individuals including agriculture and tourism.[9]

Substandard housing is another condition that would impact people during extreme weather events. The traditional indicator for determining if a housing unit is substandard is the lack of some or all plumbing facilities. In the SCAG region, 57,000 housing units fall in these criteria out of nearly 6.4 million (less than one percent). This number is relatively small when compared with all housing unitsin the region, 51,000 of these substandard housing units are in Environment Justice Areas (89.3 percent). **EXHIBIT 38** illustrates the location of all substandard housing units in the SCAG region (derived using the 2009-2013 ACS), and their relationship with Environmental Justice Areas (EJAs).

Another concern impacted by climate change is coastal flooding, which will have a large impact on Ventura, Los Angeles and Orange counties. **EXHIBIT 39** shows projected coastal inundation areas in 2100, when the region's sea level is modeled to reach 55 feet. Exposure to coastal flooding may cause a range of detrimental physical, economic and psychological effects on the populations impacted. Many of the areas affected fall outside EJAs or other areas of concern, but about 50,000 people are anticipated to be impacted from EJAs, and 48,000 in SB 535 Disadvantaged Communities (DACs). In regard to Communities of Concern (CoCs), there will slightly more than 3,000 people affected from the Harbor Gateway and Wilmington areas.

TABLE 92 Key Climate Change Effects and Their Associated Health Impacts (adapted from San Francisco Department of Public Health (33) and Toronto Public Health (30))

Climate Change Effect	Potential Public Health Impact	Populations at Higher Risk

Increases in ambient temperatures/ extreme heat conditions	• Cardiovascular disease
	• Increased number and range of:
	  » Vector-borne disease, such as West Nile virus, malaria, Hantavirus, or plague
	  » Water-borne disease, such as cholera and E. coli
	  » Food-borne disease, such as salmonella poisoning
	  » Harmful algal blooms causing skin disease causing skin disease and poisoning
	• Vulnerability to wildfires and air pollution
	• Premature death
	• Cardiovascular stress and failure
	• Heat-related illnesses, such as heat stroke, heat exhaustion, and kidney stones
		• Young children
		• Seniors (especially those who are bedridden, unable to care for themselves or socially isolated)
		• Chronically ill individuals
		• People living in areas with poor air quality
		• People working or exercising outdoors
		• People without access to air conditioning
		• People on certain medications

Increases in extreme droughts	• Respiratory illnesses from dust and smoke from fires • Outbreaks of waterborne illness due to increased concentration of contaminants • Hunger, malnutrition and associated stress disorders due to crop failures and economic hardship • Injury or death (in extreme cases) • Stress from loss of property, livelihood, displacement and community disruption	• People living in drought-prone areas • Agriculturally dependent communities • People without insurance • People without resources (e.g. financial and social)
Increased frequency, intensity, and duration of extreme storms	• Population displacement, loss of home and livelihood • Death, injury and illness from violent storms, floods, etc. • Damage to potable water, wastewater, and irrigation systems resulting in a decrease in the quality/quantity of water supply and disruption to agriculture • Water- and food-borne diseases from sewage overflow • Psychological health effects, including mental health and stress related illnesses	• People living in storm-prone areas • People living in low-lying coastal areas or in regions prone to flooding • People living in areas where environmental degradation has created hazardous conditions • Agriculturally dependent communities

EXHIBIT 38 Substandard Housing

NEVADA

Kern

Santa
Barbara

ARIZONA

San Diego

MEXICO

0 5 10   20
Miles
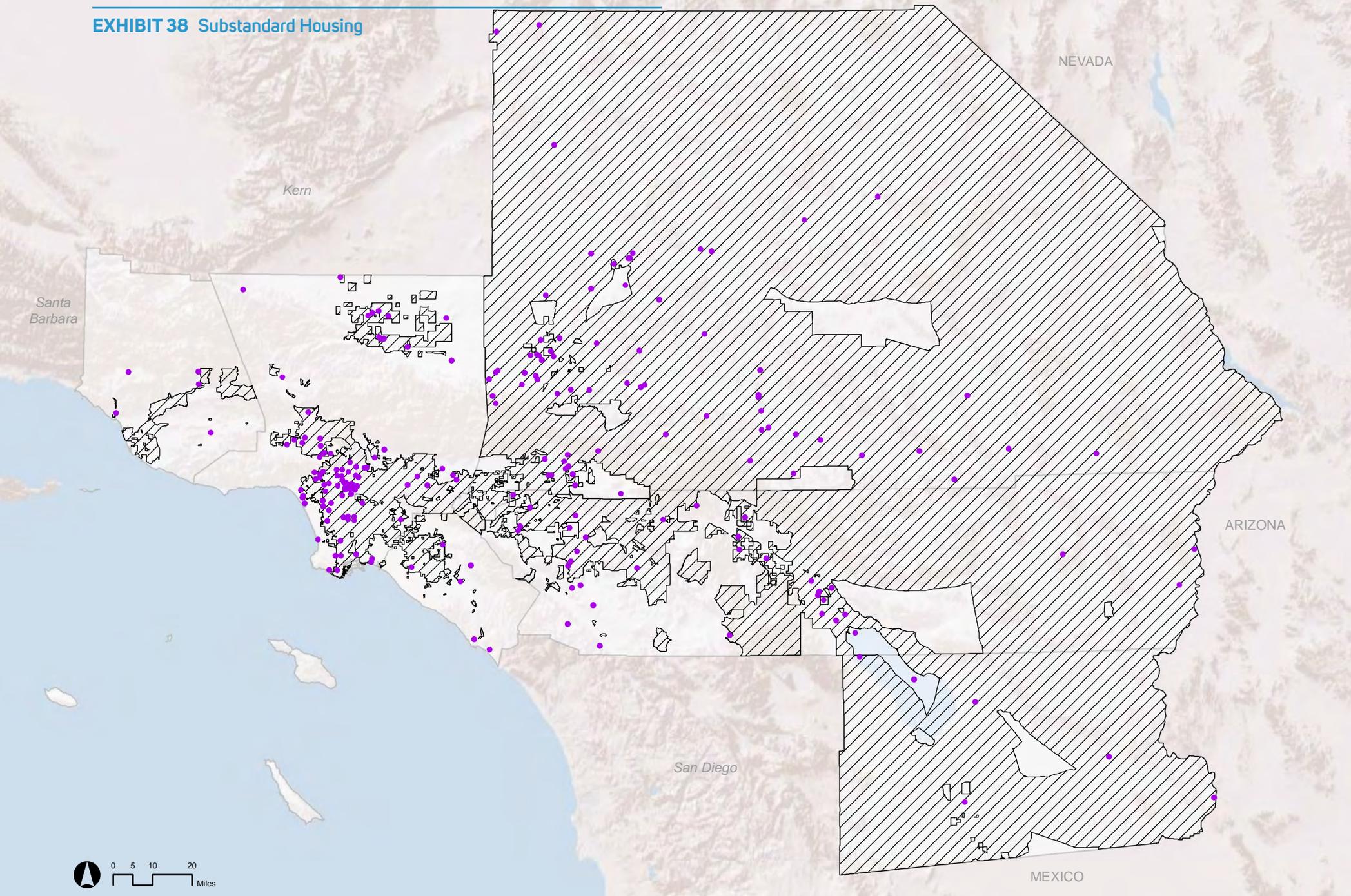
Dot Density   1 Dot = 100   • Housing Without Plumbing   ▨ Environmental Justice Areas

(Source: SCAG, U.S. Census Bureau)

EXHIBIT 39 Sea Level Rise

Santa Barbara

0 2.25 4.5   9
Miles
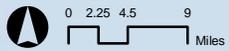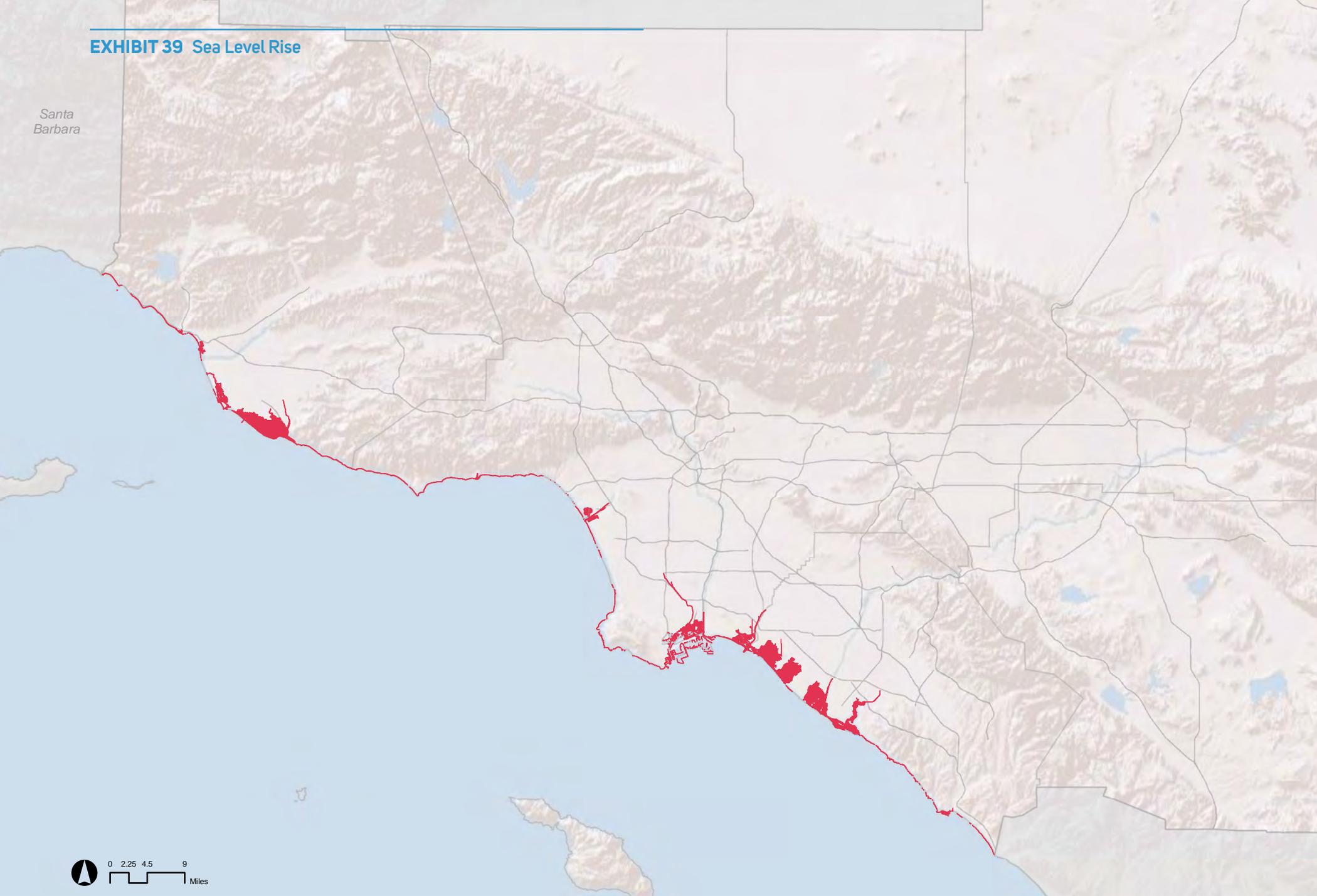
■ Coastal Areas At Risk for Sea Level Rise in 2100

(Source: SCAG, 2015)

In addition to a rise in sea level, warmer temperatures combined with longer dry seasons have resulted in more wildfires in recent years. **EXHIBIT 40** and **TABLE 93** illustrate the areas and population impacted by various levels of fire risk throughout the region. Large fires statewide are anticipated to increase from roughly 58 percent to 128 percent over the next several years, and the resulting burn areas will increase from 57 percent to 169 percent by 2085. As a result, air quality, water quality and perhaps food production and energy pricing will be affected. These extra costs are expected to more severely impact low-income communities.

TABLE 93 Population in High Threat Fire Areas

Population	High Risk Areas	Share of Population Living in High Risk Areas	Very High Risk Areas	Share of Population Living in Very High Risk Areas	Extreme Risk Areas	Share of Population Living in Extreme Risk Areas
Hispanic	90,888	24%	138,011	25%	40,715	29%
White	204,559	54%	309,058	56%	77,406	54%
Minority	175,848	46%	246,110	44%	65,406	46%
African American	16,355	4%	21,620	4%	6,193	4%
Native American	983	0%	2,379	0%	1,046	1%
Asian	55,418	15%	65,941	12%	13,057	9%
Other Race	12,204	3%	18,159	3%	4,395	3%
Age 0 to 4	20,903	5%	32,337	6%	8,658	6%
Seniors (65+)	48,566	13%	64,159	12%	17,304	12%
Disabled	31,531	8%	45,114	8%	12,452	9%
Total	**380,407**		**555,168**		**142,812**	
Households	**High Risk Areas**	**Share of Households in High Risk Areas**	**Very High Risk Areas**	**Share of Households in Very High Risk Areas**	**Extreme Risk Areas**	**Share of Households in Extreme Risk Areas**
Poverty 1	12,864	10%	18,233	10%	4,953	11%
Poverty 2	8,609	7%	12,223	7%	3,471	7%
Poverty 3	8,873	7%	12,830	7%	3,581	8%
Quintile 1	18,773	15%	27,569	15%	7,538	16%
Quintile 2	20,628	16%	30,599	17%	8,357	18%
Quintile 3	23,919	19%	34,674	19%	9,174	20%
Quintile 4	28,418	22%	41,364	23%	10,475	23%
Quintile 5	35,018	28%	49,613	27%	10,776	23%

EXHIBIT 40 High Fire Threat Areas
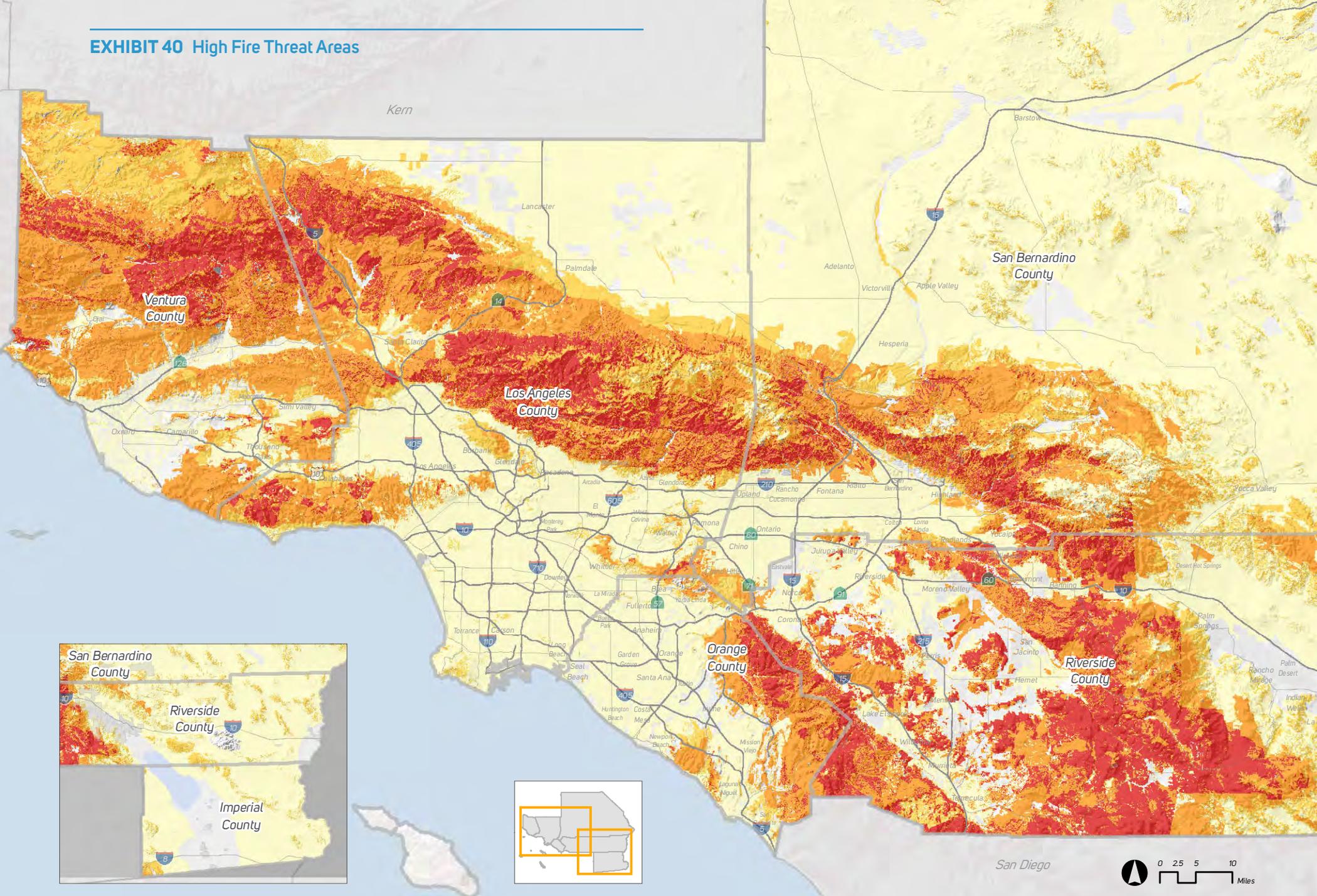
Little or No Threat Moderate High Very High Extreme

(Source: SCAG, CalFire)

FLOOD HAZARD IN THE SCAG REGION

Flood hazard is mapped and analyzed using Digital Flood Insurance Rate Map (DFIRM) data from the Federal Emergency Management Agency (FEMA). **EXHIBIT 41** illustrates the extent of flood hazard in a flood prone community, and shows areas within the 100-year Flood Hazard Zones and 500-year Flood Hazard Zones region-wide. The former Flood Hazard Zone has 1 percent annual chance of occurring and the latter 0.2 percent.

TABLE 94 shows that minority communities are disproportionately affected minorities comprise 71 percent of the population living in 100-year Flood Hazard Zones, and 77 percent of the population of the population residing in a 500-year Flood Zones. This analysis also shows lower income households are disproportionately impacted. The poorest households, as well as the lowest quintile income households, have a larger concentration in flood hazard zones than in the greater region.

In regards to Climate Change, global warming is projected to alter precipitation patterns, increase the intensity of major storm events, and increase risks of floods throughout the U.S. and the SCAG region. As a consequence, many communities are at risk for devastation from floods. Flooding may cause serious health impacts and risks that include death and injury, contaminated drinking water, hazardous material spills, and increases in the populations of disease-carrying insects and rodents. Other negative impacts would include damage to critical infrastructure and community disruption/displacement. Indeed flooding may cause a range of detrimental physical, economic, and psychological effects for residents at risk, which are disproportionately minority and low income persons.

TABLE 94 Population and Households in Flood Hazard Areas in 2012

Population	100-Year Flood Hazard Zone	Share of Population Living in 100-Year Zone	500-Year Flood Hazard Zone	Share of Population Living in 500-Year Zone
Hispanic	8,789	53%	1,432,725	54%
White	4,873	29%	605,179	23%
Minority	11,868	71%	2,056,870	77%
African American	745	4%	186,160	7%
Native American	38	0%	7,645	0%
Asian & PI	1,928	12%	375,515	14%
Other Race	367	2%	54,826	2%
Age 0 to 4	1,017	6%	194,267	7%
Seniors (65+)	2,157	13%	277,342	10%
Disabled	1,711	10%	250,991	9%
Total	**16,741**		**2,662,049**	
Households	100-Year Flood Hazard Zone	Share of Households Living in 100-Year Zone	500-Year Flood Hazard Zone	Share of Households Living in 500-Year Zone
Poverty 1	796	15%	102,562	13%
Poverty 2	486	9%	70,342	9%
Poverty 3	463	9%	69,198	9%
Quinitile 1	1,134	21%	147,287	19%
Quinitile 2	1,097	20%	164,490	21%
Quinitile 3	1,054	20%	165,538	21%
Quinitile 4	1,038	19%	160,903	21%
Quinitile 5	1,070	20%	136,972	18%

EXHIBIT 41 Flood Hazard Zones FEMA
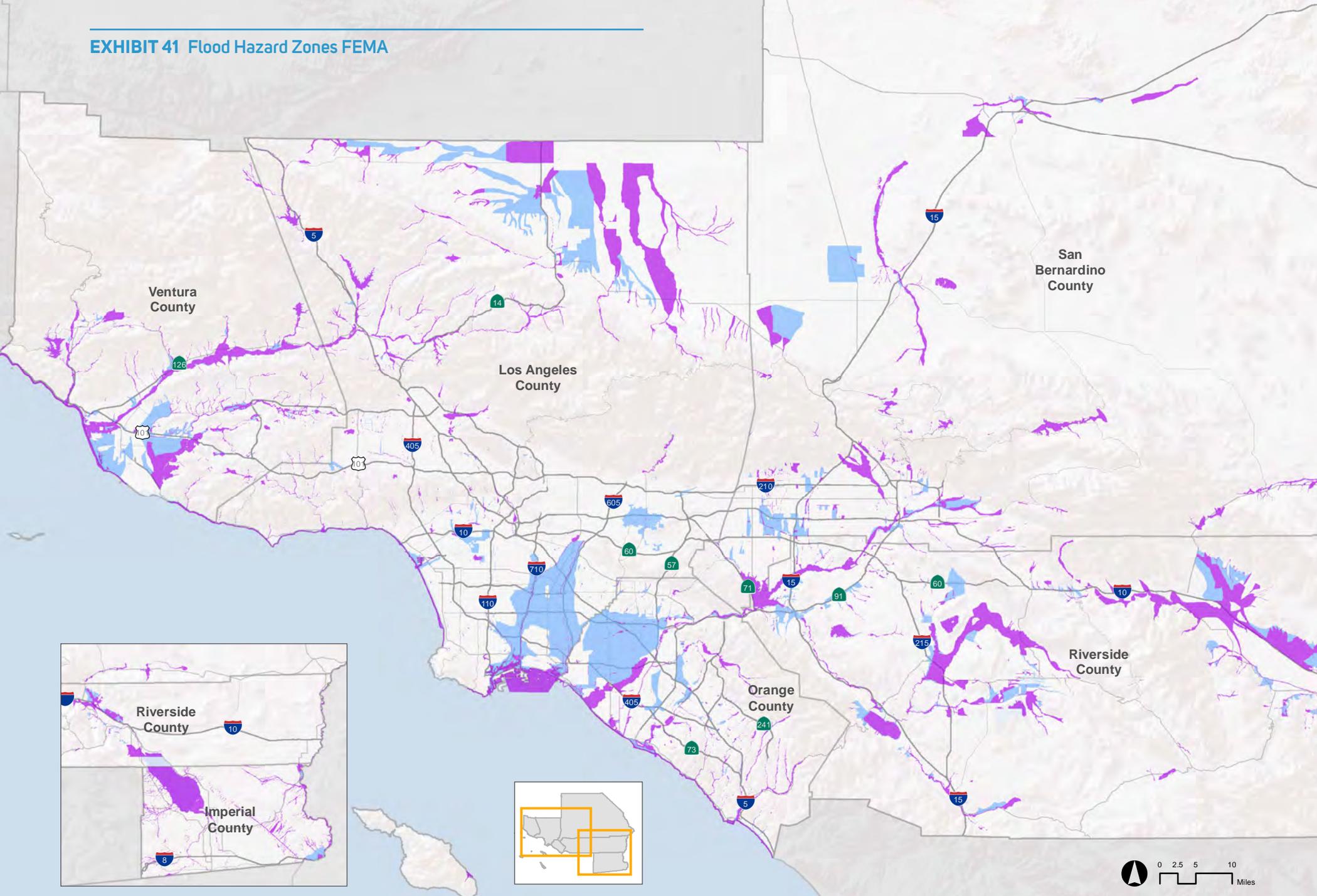
100-year Flood Hazard Zone   500-year Flood Hazard Zone

(Source: SCAG, FEMA)

POTENTIAL STRATEGIES

California leads the United States and many parts of the world in legislation aimed to curb climate change trends through carbon reduction and adaptation policies. The state's Global Warming Solutions Act (AB 32) requires the reduction of carbon emissions from major industries, such as power plants, cement plants, oil refineries and others. In alignment with the Global Warming Solutions Act, SB 375 aims to reduce greenhouse gas emissions from motor vehicles, as cars and light trucks account for 30 percent of the state's overall emissions. Indeed, these laws benefit all Californians by lessening the amount of greenhouse gas emissions and seeking strategies to cope and adapt to the world's changing climate. However, it is important to recognize that climate change does not affect all people equally. People in communities of color and low-income communities will bare the greatest health and economic consequences of climate change. Therefore, it is critical for policy makers to consider the locations of these communities when planning for the future.

By reaching the region's reduction targets under SB 375, the 2016 RTP/SCS helps reduce the impacts of climate change on the region. The land use strategies in the Plan specifically help the region improve its resiliency to the impacts of drought and reduce the risk of sea level impacts and wildfires on new development. The 2016 RTP/SCS anticipates a large share of growth to occur in small-lot single-family and multifamily housing that is targeted for infill locations within high quality transit areas. The RTP/SCS also reduces future development in areas that contain high quality plant and animal habitats, including parklands, natural lands, farmland and other natural resource areas. These land uses are important to the region's environment, economy and public health.

Adapting to climate change is essential for protecting communities both today and well into the future. Adaptation planning helps prevent widespread suffering, dislocation and infrastructure repair costs. Poor and marginalized communities face relatively greater adaptation challenges than segments of society with greater financial and social resources. Environmental justice is therefore an important part of climate change adaptation, transportation, land use and housing planning. For our region, more research needs to be done to assess vulnerabilities to climate change at the community and neighborhood level. **TABLE 95** lists a number of potential climate adaptation policies adopted by other agencies, and includes each policy's potential impacts (both positive [+] and negative [-]) for environmental justice groups.

TABLE 95 Impacts of Potential Adaptation Policies on EJ Populations

Climate Adaptation Policy	Source	Potential Impact on EJ Populations		
		Spatial	Financial	Health
Select materials/designs to improve road resiliency to high temperatures, and to reduce heat retention	State of California	New/reconstructed roads may run through vulnerable communities (-) investment could be prioritized for most vulnerable areas (+)	Higher cost treatments could divert funds from transit, other measures (-); could save costs in long term by avoiding need for reconstruction (+)	Noise impacts; air pollution impacts during construction and use (-). Reduce heat island impacts (+).
Fortify roadways vulnerable to storm surge and sea-level rise	City of Chula Vista; State of California	Roads may run through vulnerable communities (-); Could protect such communities, e.g. during evacuations (+)	Higher cost treatments could divert funds from transit, other measures (-); could save costs in long term by avoiding need for reconstruction (+)	Noise impacts; air pollution impacts during construction and use (-); Could improve safety (+)
Increasing shade trees	Western Riverside Council of Governments (WRCOG); City of Chula Vista	Investment could be prioritized for most vulnerable areas (+)	Funding greater availability of shade trees could divert funds from other measures (-); Shading can reduce cooling costs (+); Increased greening may increase gentrification/housing cost pressures (-)	Visual impacts (+); Reduction in ambient temperatures (+); Reduction in stress (+)
New sea level rise & land development codes	City of Chula Vista	EJ populations communities near the Port of LA are particularly susceptible to sea level rise (-)	Costs to comply with new codes could make (new) housing developments less affordable (-); could save costs in long term by avoiding need for maintenance/reconstruction (+)	Could improve safety (+); could result in higher quality housing (+)
Reducing vehicle miles traveled (VMT) through taxes and fees, congestion pricing	WRCOG, City of San Diego, City of Toronto Public Health	EJ populations may have longer distances and commute time between home and work due to reduced housing purchasing power (-)	Increased costs may disproportionately affect EJ households (-);EJ populations may have less flexibility in changing times they travel to avoid charges (-), or incur additional travel costs by taking longer routes to avoid tolls (-);Could increase attraction of low-cost modes for EJ populations (+)	Increased personal exposure to heat and PM (-) but decreased regional exposure (+) would likely improve health conditions (e.g. cardiovascular, weight, Type II diabetes, respiratory) if mode switch to bike or walk (+)
Increasing availability of cooling centers	City of San Francisco, City of Toronto Public Health	Potential unforeseen barriers (e.g. walkability) to accessing cooling centers, even if proximity increases (-)	Funding greater availability of cooling centers could divert funds from other measures (-); Could reduce high-cost emergency response visits (+)	Disease spread (-); Surge in use could create stressful environment (-); Could contribute to social capital (+); Avoidance of heat-related illnesses (+)
Prioritizing projects that protect key evacuation routes and modes	State of California	EJ populations may not have access to key routes and modes (-); Could improve infrastructure in EJ areas (+)	Costs of improvements could divert funds from other measures (-)	Noise and air pollution impacts during construction (-); Improved evacuation travel times, improved emergency response times (+)

ENVIRONMENTAL JUSTICE TOOLBOX

Building on the foundation of the 2012 RTP/SCS, SCAG has included a toolbox of possible mitigation measures to address potential impacts to environmental justice communities. The toolbox presents optional mitigation recommendations that may be effective in addressing project-specific environmental justice impacts after a comprehensive review of impacts and consultation with all stakeholders. These measures were identified through a review of literature, the PEIR, recent planning activities, and input from stakeholders as part of the environmental justice outreach process.[10] Measures incorporating or referring to compliance with existing regulations are for informational purposes only and do not supersede existing regulations.

POTENTIAL MITIGATION FOR ACCESS TO PARKS, SCHOOLS, SHOPPING, EMPLOYMENT

- Encourage siting of new parks and recreation amenities in urban and other infill locations.
- Improve active transportation and transit infrastructure to promote accessibility to destinations within short distances.

POTENTIAL MITIGATION FOR AIR QUALITY IMPACTS ALONG FREEWAYS AND HEAVILY TRAVELED CORRIDORS

Local air districts, local jurisdictions and project sponsors may voluntarily implement measures adopted by ARB designed to attain federal air quality standards for $PM_{2.5}$ and eight-hour ozone. ARB's strategy includes the following elements:

- Set technology forcing new engine standards.
- Require clean fuels, and reduce petroleum dependency.
- Work with US EPA to reduce emissions from federal and state sources.
- Pursue near-term advanced technology demonstration and deployment such as:
  - Zero emissions heavy-duty trucks (2013 and beyond)[11]
  - Tier 4 marine engine repowers and replacements (2014 and beyond)
  - Tier 4 and zero emissions railyard equipment (2015 and beyond)[12]
- Pursue long-term advanced technology measures.
- In addition, consider proposed new transportation-related SIP measures including:
  - Improvements and Enhancements to California's Smog Check Program
  - Expanded Passenger Vehicle Retirement
  - Modifications to Reformulated Gasoline Program

- Cleaner In-Use Heavy-Duty Trucks
- Ship Auxiliary Engine Cold Ironing and Other Clean Technology
- Cleaner Ship Main Engines and Fuel
- Port Truck Modernization
- Clean Up Existing Commercial Harbor Craft

- Conduct corridor-level analysis for proposed projects in areas where air quality impacts may be concentrated among environmental justice communities.
- Project sponsors should consider identifying the environmental justice impacts of each project. In consultation with the affected community, mitigation measures can be identified to best address the project's impacts.
- Participate in statewide and regional discussions seeking to balance multiple policy objectives affecting air quality and the siting of transit-oriented development.

Additional input received as part of SCAG's environmental justice public workshops:

- Provide infrastructure for electric vehicles in disadvantaged communities along heavily traveled corridors.

POTENTIAL MITIGATION FOR ACTIVE TRANSPORTATION HAZARD

- Adopt and institutionalize complete streets policies.
- Adopt a Vision Zero Policy.
- Develop or update transportation infrastructure, such as sidewalks, bicycle lanes, and street lighting to encourage bicycling or walking within communities.
- Partner with local educational institutions to promote active transportation choices.

POTENTIAL MITIGATION FOR PUBLIC HEALTH IMPACTS

- Fund proactive measures to improve air quality in neighboring homes, schools, and other sensitive receptors.
- Provide public education programs about environmental health impacts to better enable residents to make informed decisions about their health and community.
- Engage in proactive measures to train and hire local residents for construction or operation of the project to improve their economic status and access to health care.

Additional input received as part of SCAG's environmental justice public workshops:

- Engage with local private industry to strengthen public-private partnerships.
- Encourage and sustain linear parks to connect neighborhoods and communities.

POTENTIAL MITIGATION FOR RAIL RELATED IMPACTS

- Construct sound reducing barriers, where feasible and applicable, between noise sources and noise-sensitive land uses.

POTENTIAL MITIGATION FOR ROAD PRICING MECHANISMS

- Transit, vanpools or other options as alternatives in locations not served by transit.
- Upper limits on road pricing.
- Exemptions or discounts for persons who are disadvantaged people such as those whose earnings are below a certain income level and people with disabilities.
- Limits on the number of priced crossings in a period for cordon charges.
- Allowances for unlimited use of priced facilities in certain periods, typically off-peak hours and holidays. [13]
- Develop detailed program design including billing and collection technology, rate structure, enforcement, spillover guards, revenues and gas tax replacement strategy, and mitigation for perceived geographic inequity before communicating with public.[14]
- Develop an explicit benefit plan for increased revenues dovetailing with goals and mitigation concerns (e.g., enhanced transit, spillover protections and better enforcement). [15]
- Include environmental justice mitigation actions as part of the NEPA review. [16]

POTENTIAL MITIGATION FOR NOISE IMPACTS

Project sponsors may voluntarily, to the extent feasible and applicable, and where their jurisdictional authority permits:

- As part of the appropriate environmental review of each project, conduct a project specific noise evaluation and identify and implement applicable mitigation.
- Employ land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.
- Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities.
- Construct sound reducing barriers where feasible and applicable, between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earthberms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.
- Maximize the distance of new route alignments from environmental justice communities. For example, if a transit project were constructed along the center of a freeway (as opposed to a new route or along side the freeway), operational noise impacts would be reduced by the increase in distance to the noise sensitive sites and the masking effects of the freeway traffic noise.

POTENTIAL RESOURCES RELATED TO GENTRIFICATION AND DISPLACEMENT

- California Department of Housing and Community Development, Inclusionary Housing Publications [17]
- PolicyLink, Equitable Development Toolkit [18]
- National Association of Realtors, Field Guide to Inclusionary Zoning [19]
- The Partnership for Working Families, Community Benefits Agreements [20]
- Los Angeles Alliance for a New Economy, LAX Community Benefit Agreement [21]

Additional input received as part of SCAG's environmental justice public workshops:

- Consider mitigation funds for local community-oriented businesses.
- Explore the applicability of community land trusts to preserve local land ownership
- Consider inclusionary zoning to minimize the displacement of low-income residents.
- Create a local housing trust fund to fund the development of affordable housing.
- Adopt policies that incentivize the creation of affordable housing near amenities such as parks, schools, transit, and jobs.
- Create homeowner assistance programs to assist low income families to purchase homes or prevent foreclosures.
- Consider community-based ownership options, such as co-ops, to encourage ownership opportunities in areas with low homeownership rates.

POTENTIAL RESOURCES FOR OTHER ENVIRONMENTAL JUSTICE IMPACTS

There are several strategies used presently across the nation to reduce the harms of pollution in and around schools. As documented in the U.S. Environmental Protection Agency's (EPA) Best Practices for Reducing Near-Road Air Pollution Exposure at Schools, some efforts include:

- Upgrading filtration systems used in classrooms.
- Locating air intakes away from pollution sources.
- Providing training to school staff and students on indoor air quality and ventilation.
- Avoiding strenuous activities, such as physical education class and sports, during peak traffic times.

- Reducing car and bus idling, upgrade bus fleets, and encourage active transportation like walking and biking to school.

- Considering improvements to site layout, such as locating classrooms further from the roadway.

- Considering installation of solid and/or vegetative barriers.

Input received as part of SCAG's environmental justice public workshops:

- Improve safety at transit stations.

- Engage and support community groups to follow project development at all levels in the process.

ADDENDUM

This portion of the Environmental Justice Appendix provides detailed information for each of the communities included in the Communities of Concern (CoC) geography established for additional analysis. More information on historic trends in CoC's as a whole is available in the Historic Demographic Trends section of this report.

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990)

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Imperial County										
Brawley	13,940	4,219	1,710	1,183	835	1,047	791	645	690	980
Calexico	16,031	4,095	1,691	1,289	1,656	868	360	261	231	1,477
Calipatria	78	25	9	9	11	5	2	2	1	6
Desert Shores	20	10	1	6	4	2	1	1	1	0
El Centro	31,677	9,774	3,802	2,733	3,093	2,004	1,386	1,206	1,090	2,031
Heber	160	36	17	10	13	8	5	3	2	10
Holtville	1,032	294	130	109	46	61	62	66	72	57
Niland	8	3	1	1	1	1	0	0	0	1
Seeley	47	14	4	4	4	4	2	1	2	2
Westmorland	16	4	2	1	2	1	1	0	0	1
Winterhaven	18	7	2	3	4	1	0	0	0	2
Los Angeles County										
Alondra Park	7,914	2,673	745	773	416	506	621	680	591	210
Arleta - Pacoima	86,852	19,187	10,641	4,993	4,056	4,373	3,738	3,252	2,803	4,349
Azusa	40,633	11,905	4,809	2,610	2,502	2,879	2,251	1,919	1,606	1,554
Bell	35,412	9,272	4,881	2,279	3,133	2,286	1,056	700	580	2,537
Bell Gardens	41,620	9,147	6,228	1,651	2,899	2,513	1,072	533	445	3,007
Boyle Heights	91,815	21,312	11,562	6,574	7,778	4,896	2,201	1,635	1,292	7,178
Central City North	19,328	4,546	1,592	1,779	2,005	828	374	299	238	1,527
Commerce	12,465	3,303	1,286	1,154	957	764	483	386	344	664
Compton	89,631	22,225	11,820	5,195	6,895	5,048	2,953	2,614	2,189	6,797
Cudahy	23,035	5,346	3,357	944	1,807	1,351	612	366	269	1,766
East Los Angeles	125,853	28,996	15,421	9,580	9,611	6,805	3,627	2,494	2,046	8,157
East Rancho Dominguez	10,461	2,373	1,461	404	743	565	291	255	231	776
El Monte	100,840	24,821	13,058	6,339	6,543	6,189	3,876	2,956	2,453	6,008
Florence-Graham	55,129	12,570	7,831	3,055	5,022	2,792	1,129	680	573	5,281
Harbor Gateway	36,464	11,225	4,124	2,491	2,480	2,752	1,978	1,750	1,542	1,698
Hawaiian Gardens	13,436	3,480	1,727	644	799	836	613	545	441	764
Hawthorne	73,674	27,502	7,744	5,369	6,250	6,664	4,814	4,221	3,647	2,911
Huntington Park	57,808	14,409	7,700	3,178	4,710	3,532	1,701	1,243	1,058	3,929

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Inglewood	110,670	36,623	12,812	7,594	9,121	8,657	6,084	5,183	4,599	5,102
Lennox	20,344	4,566	2,667	759	1,329	1,218	612	386	321	1,408
Lynwood	61,585	14,228	8,359	3,263	4,130	3,485	1,969	1,620	1,302	3,708
Maywood	27,103	6,360	3,869	1,155	1,821	1,808	784	509	436	1,615
Mission Hills - Panorama City - North Hills	109,708	34,527	12,361	9,117	7,249	7,774	6,652	6,042	5,476	4,671
Northeast Los Angeles	237,038	68,491	24,316	20,471	17,774	15,303	11,301	9,938	9,049	12,704
Paramount	47,545	12,950	6,319	2,920	3,272	3,259	2,091	1,568	1,367	2,349
Pomona	131,824	36,488	17,334	8,722	8,319	8,107	6,795	6,000	5,274	6,633
Rosemead	49,858	13,433	5,145	4,566	3,430	3,054	2,176	2,034	1,803	2,772
South El Monte	19,993	4,476	2,631	919	1,271	1,182	593	456	377	1,534
South Gate	87,463	22,566	10,913	6,371	6,094	5,697	3,331	2,666	2,191	4,252
South Los Angeles	257,696	75,749	30,337	21,245	30,107	14,921	7,644	6,032	4,970	21,858
Southeast Los Angeles	239,247	59,252	34,819	15,779	26,216	11,578	4,544	2,979	2,454	26,350
Sun Valley - La Tuna Canyon	74,593	20,953	7,646	5,792	4,051	4,619	4,185	4,092	3,720	2,952
Vernon	1,480	366	201	76	101	95	49	40	36	95
Walnut Park	14,208	3,293	1,583	904	778	911	517	378	334	560
West Adams - Baldwin Hills - Leimert	166,055	60,848	17,061	18,831	19,934	13,276	7,759	6,592	5,966	9,678
West Athens	9,187	2,655	1,022	521	661	503	481	517	431	663
West Rancho Dominguez	20,713	6,016	2,089	2,586	1,782	1,263	922	782	694	1,278
Westlake	103,771	30,969	11,713	7,488	13,820	6,418	2,074	1,275	1,062	10,400
Westmont	30,731	9,328	4,185	1,406	3,391	1,974	1,028	829	786	2,704
Willowbrook	18,881	4,151	2,717	1,227	1,522	940	424	327	259	1,626
Wilmington - Harbor City	68,722	20,122	8,183	4,475	4,995	4,500	3,404	3,151	2,788	3,537
Orange County										
Midway City	4,282	1,359	392	378	244	269	294	298	285	120
Santa Ana	296,682	72,993	35,353	16,422	13,711	17,416	14,532	13,231	11,547	14,800
Stanton	27,197	8,976	2,982	2,617	1,863	2,094	1,721	1,563	1,307	1,078
Riverside County										
Coachella	18,411	4,129	2,511	1,059	1,300	1,108	447	357	295	1,231
Garnet	1,459	604	153	274	212	137	71	48	41	77
Good Hope	3,089	952	332	374	300	213	133	105	80	179

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Highgrove	3,439	1,180	385	245	303	287	194	151	122	151
Home Gardens	5,351	1,537	687	382	237	302	354	373	336	132
Indio Hills	1,086	450	93	199	80	100	93	89	88	23
Mead Valley	10,427	3,237	1,069	1,018	757	681	601	559	513	444
Mecca	339	81	47	16	34	19	6	4	3	36
Mesa Verde	5	1	0	0	0	0	0	0	0	0
North Shore	545	130	75	26	54	30	10	6	6	58
Oasis	1,234	295	169	60	122	68	21	13	13	130
Perris	22,338	6,861	3,336	1,993	1,782	1,611	1,188	857	673	1,002
Ripley	29	9	3	4	4	2	1	1	1	2
Thermal	1,198	307	147	84	93	63	43	41	44	89
Vista Santa Rosa	1,887	480	235	127	150	100	64	60	64	146
San Bernardino County										
Adelanto	2,037	729	274	158	28	152	74	69	55	149
Baker	4	1	1	0	0	0	0	0	0	0
Bloomington	12,027	3,641	1,523	772	743	873	730	586	457	403
Colton	40,054	13,024	5,095	3,068	3,367	3,208	2,129	1,575	1,297	1,742
Montclair	30,790	9,301	3,527	2,407	2,099	2,152	1,718	1,483	1,255	1,426
Muscoy	6,551	1,716	729	404	586	394	225	115	102	478
Rialto	69,809	20,784	9,118	4,779	4,269	4,696	4,189	3,659	2,965	2,527
San Bernardino	184,716	61,320	23,085	17,343	18,320	13,635	9,017	7,281	6,268	10,976
Ventura County										
Santa Paula	13,478	4,006	1,468	1,467	1,094	888	648	551	463	583
Saticoy	839	285	83	82	40	63	64	68	60	33

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Imperial County							
Brawley	4,218	3,754	322	23	113	6	9,722
Calexico	812	397	19	-	391	5	15,220
Calipatria	32	26	3	0	3	-	46
Desert Shores	18	17	0	0	0	-	2
El Centro	11,329	9,192	1,321	130	663	22	20,348
Heber	37	29	6	0	2	-	123
Holtville	399	388	-	9	1	2	633
Niland	3	3	0	0	0	-	5
Seeley	26	24	1	0	1	-	20
Westmorland	5	5	0	0	0	0	11
Winterhaven	15	7	1	7	0	0	3
Los Angeles County							
Alondra Park	6,116	3,781	947	53	1,309	27	1,798
Arleta - Pacoima	22,278	10,772	7,229	235	3,804	239	64,573
Azusa	17,975	14,076	1,267	183	2,331	119	22,658
Bell	4,891	4,097	126	89	470	111	30,522
Bell Gardens	5,339	4,175	149	397	433	181	36,282
Boyle Heights	6,872	1,943	1,656	62	3,042	167	84,944
Central City North	10,954	1,527	2,144	22	7,183	77	8,374
Commerce	1,350	1,031	157	8	131	22	11,116
Compton	51,117	1,763	47,388	166	1,490	307	38,514
Cudahy	2,794	1,920	138	309	398	30	20,240
East Los Angeles	7,136	3,209	1,660	149	1,636	482	118,716
East Rancho Dominguez	4,950	408	4,330	35	141	36	5,510
El Monte	27,887	15,125	815	170	11,636	140	72,953
Florence-Graham	13,937	554	13,030	90	110	153	41,192
Harbor Gateway	20,838	8,224	5,226	129	7,181	78	15,627
Hawaiian Gardens	5,161	3,214	597	95	1,229	26	8,275
Hawthorne	50,757	23,208	18,988	251	7,942	368	22,917
Huntington Park	5,131	3,147	579	124	1,010	272	52,676
Inglewood	67,771	9,559	55,081	276	2,532	322	42,899

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Lennox	3,158	1,281	1,247	15	586	28	17,187
Lynwood	18,834	3,993	13,431	143	1,119	148	42,751
Maywood	2,017	1,623	58	38	180	117	25,087
Mission Hills - Panorama City - North Hills	61,877	41,284	7,286	438	12,524	346	47,830
Northeast Los Angeles	88,006	42,999	3,979	664	39,946	414	149,032
Paramount	18,952	10,935	4,959	343	2,561	154	28,593
Pomona	65,455	38,127	18,022	400	8,638	267	66,369
Rosemead	25,404	8,067	124	138	16,900	173	24,454
South El Monte	3,066	1,858	57	28	1,096	28	16,928
South Gate	15,353	12,540	1,249	290	1,045	228	72,109
South Los Angeles	144,752	11,085	124,816	584	7,003	1,265	112,945
Southeast Los Angeles	99,586	1,919	95,141	192	1,599	734	139,660
Sun Valley - La Tuna Canyon	33,819	24,125	1,784	245	7,511	153	40,774
Vernon	151	95	15	1	34	6	1,329
Walnut Park	1,089	947	4	15	109	13	13,119
West Adams - Baldwin Hills - Leimert	121,374	8,339	103,376	420	8,241	1,000	44,681
West Athens	6,337	247	5,793	9	267	20	2,850
West Rancho Dominguez	15,938	358	15,320	24	212	24	4,773
Westlake	22,935	6,785	3,116	344	12,323	366	80,836
Westmont	22,534	267	22,038	34	123	73	8,198
Willowbrook	7,711	265	7,383	1	34	28	11,170
Wilmington - Harbor City	25,471	16,464	3,390	230	5,258	129	43,248
Orange County							
Midway City	3,560	2,510	44	35	971	0	723
Santa Ana	106,514	71,452	6,647	648	27,314	453	190,168
Stanton	18,364	14,224	713	54	3,330	43	8,834
Riverside County							
Coachella	1,525	1,274	113	49	81	9	16,886
Garnet	1,203	1,114	48	16	21	3	256
Good Hope	2,085	1,478	530	25	45	7	1,004
Highgrove	2,252	1,841	274	27	109	1	1,187

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Home Gardens	3,137	2,695	119	4	312	8	2,213
Indio Hills	864	807	27	3	24	3	223
Mead Valley	7,905	6,011	1,630	51	204	7	2,523
Mecca	42	30	0	5	6	-	297
Mesa Verde	3	2	1	0	-	0	2
North Shore	68	49	1	8	10	-	477
Oasis	159	115	2	19	23	-	1,076
Perris	14,656	11,219	2,651	165	569	52	7,683
Ripley	14	11	2	1	-	-	15
Thermal	248	214	10	5	19	0	951
Vista Santa Rosa	374	320	14	10	30	0	1,513
San Bernardino County							
Adelanto	1,646	1,402	163	28	51	1	391
Baker	3	2	1	0	0	0	0
Bloomington	7,751	6,455	919	71	296	11	4,276
Colton	20,252	16,018	2,777	214	1,216	30	19,803
Montclair	18,866	14,076	2,556	229	1,988	17	11,924
Muscoy	3,900	2,374	1,201	99	223	2	2,651
Rialto	47,457	31,734	12,879	401	2,277	164	22,353
San Bernardino	123,179	87,946	26,336	1,483	7,027	386	61,536
Ventura County							
Santa Paula	5,227	4,881	12	131	201	1	8,251
Saticoy	501	471	13	4	13	-	338

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Imperial County				
Brawley	3,342	1,836	641	3,708
Calexico	7,641	4,708	602	5,207
Calipatria	24	12	2	25
Desert Shores	1	0	1	6
El Centro	9,199	4,279	1,200	7,050
Heber	55	35	3	45
Holtville	275	185	16	275
Niland	3	1	0	3
Seeley	8	4	1	9
Westmorland	5	2	0	5
Winterhaven	1	1	1	6
Los Angeles County				
Alondra Park	2,006	524	165	1,056
Arleta - Pacoima	39,849	19,589	1,681	26,339
Azusa	11,857	5,196	862	8,644
Bell	20,017	11,334	1,393	11,893
Bell Gardens	21,677	11,006	1,017	13,692
Boyle Heights	50,579	31,111	5,790	33,494
Central City North	10,453	6,409	1,752	6,918
Commerce	4,993	2,509	502	4,018
Compton	24,341	13,551	3,351	22,104
Cudahy	12,648	6,274	762	7,277
East Los Angeles	61,881	37,262	5,605	45,084
East Rancho Dominguez	3,454	1,974	291	2,689
El Monte	48,382	26,273	2,669	28,848
Florence-Graham	25,369	14,963	2,777	19,204
Harbor Gateway	13,735	5,980	990	7,526
Hawaiian Gardens	5,376	2,723	234	3,321
Hawthorne	21,970	6,815	2,960	12,231
Huntington Park	34,188	18,626	2,896	20,029
Inglewood	32,494	14,193	4,662	22,010

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Lennox	12,311	6,729	640	6,398
Lynwood	27,000	13,946	1,501	17,604
Maywood	15,737	9,109	836	9,179
Mission Hills - Panorama City - North Hills	44,708	17,422	3,358	21,628
Northeast Los Angeles	111,612	49,069	9,585	63,281
Paramount	17,893	8,590	980	12,182
Pomona	41,638	20,334	3,307	28,514
Rosemead	24,110	11,207	1,280	13,241
South El Monte	10,076	5,126	554	6,398
South Gate	42,858	19,892	2,622	26,371
South Los Angeles	91,019	46,096	19,998	70,325
Southeast Los Angeles	96,739	55,776	18,771	75,545
Sun Valley - La Tuna Canyon	34,906	14,114	1,409	18,506
Vernon	803	444	58	483
Walnut Park	7,834	4,055	413	4,896
West Adams - Baldwin Hills - Leimert	40,788	16,020	11,864	34,245
West Athens	2,083	1,115	343	1,753
West Rancho Dominguez	3,051	1,741	673	4,603
Westlake	72,794	42,844	14,338	36,905
Westmont	6,139	3,182	2,268	6,530
Willowbrook	6,284	3,433	821	5,627
Wilmington - Harbor City	26,262	12,452	2,272	17,352
Orange County				
Midway City	1,163	471	81	736
Santa Ana	149,902	83,542	5,614	78,188
Stanton	8,474	3,639	728	4,990
Riverside County				
Coachella	7,689	4,657	231	6,296
Garnet	164	38	45	272
Good Hope	458	194	81	757
Highgrove	595	230	68	614
Home Gardens	1,471	601	44	1,056
Indio Hills	105	39	11	136
Mead Valley	1,202	420	165	1,985

TABLE 96 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (1990) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Mecca	201	156	11	128
Mesa Verde	1	0	0	2
North Shore	323	251	18	205
Oasis	729	565	40	463
Perris	3,752	1,693	532	4,189
Ripley	7	5	1	11
Thermal	532	371	28	379
Vista Santa Rosa	869	616	46	609
San Bernardino County				
Adelanto	191	69	63	350
Baker	0	0	0	0
Bloomington	1,572	585	192	2,424
Colton	6,507	2,581	1,115	7,028
Montclair	6,637	3,014	698	5,851
Muscoy	1,309	663	229	1,620
Rialto	10,083	3,525	1,520	10,976
San Bernardino	27,977	12,818	7,632	32,812
Ventura County				
Santa Paula	3,279	1,376	419	3,141
Saticoy	142	58	11	170

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000)

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Imperial County										
Brawley	16,175	4,819	1,437	1,499	1,634	1,093	952	715	434	1,175
Calexico	21,717	5,434	1,663	2,322	1,843	1,535	1,048	629	397	1,573
Calipatria	116	22	6	9	7	7	4	2	1	4
Desert Shores	7	3	0	2	1	1	0	0	0	0
El Centro	36,601	11,065	3,041	3,534	3,439	2,404	2,279	1,818	1,091	2,201
Heber	198	44	15	15	11	14	10	5	3	10
Holtville	1,168	329	101	134	81	74	81	63	32	52
Niland	12	2	1	1	1	1	0	0	0	0
Seeley	58	17	6	5	4	5	4	3	2	3
Westmorland	18	5	1	2	2	1	1	1	0	1
Winterhaven	18	6	2	3	3	2	1	1	0	2
Los Angeles County										
Alondra Park	8,451	2,823	744	733	624	563	570	592	441	351
Arleta - Pacoima	95,095	20,749	8,761	6,258	4,566	5,068	5,082	3,826	2,224	4,990
Azusa	43,830	12,066	4,000	3,099	2,397	2,698	2,891	2,526	1,488	1,917
Bell	37,299	9,132	3,971	1,940	2,551	2,967	1,923	1,178	531	2,355
Bell Gardens	43,451	9,336	4,967	1,729	2,652	2,924	2,125	1,094	543	3,145
Boyle Heights	89,303	20,696	8,359	6,669	8,042	5,949	3,682	2,037	1,002	7,482
Central City North	20,210	4,715	921	2,144	2,289	1,180	651	400	211	1,257
Commerce	12,600	3,194	1,057	1,265	870	835	703	526	264	648
Compton	93,773	22,365	9,753	6,533	6,805	5,603	4,738	3,436	1,796	6,987
Cudahy	25,191	5,665	2,981	968	1,808	1,693	1,216	694	259	1,873
East Los Angeles	124,157	29,868	12,550	10,167	9,680	8,701	5,955	3,783	1,707	9,078
East Rancho Dominguez	11,360	2,344	1,275	421	692	573	529	340	211	926
El Monte	110,387	25,820	10,738	7,363	6,904	7,308	5,507	3,803	2,309	7,492
Florence-Graham	57,863	12,855	6,539	2,866	4,919	3,844	2,293	1,259	583	5,512
Harbor Gateway	40,135	11,813	3,976	3,039	2,990	3,096	2,494	2,053	1,242	2,274
Hawaiian Gardens	15,046	3,658	1,470	1,012	822	912	948	688	353	771
Hawthorne	86,506	28,891	8,433	5,286	7,928	7,907	5,941	4,532	2,628	4,698
Huntington Park	63,107	15,238	6,603	3,282	4,685	4,714	3,146	1,830	893	4,298

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Inglewood	113,272	36,910	10,270	7,986	10,509	9,033	7,964	6,011	3,474	6,823
Lennox	20,674	4,571	2,204	842	1,478	1,346	984	497	259	1,704
Lynwood	68,249	14,090	7,260	2,815	3,437	3,706	3,468	2,429	1,078	4,136
Maywood	27,106	6,256	3,083	1,175	1,833	1,984	1,268	848	334	1,768
Mission Hills - Panorama City - North Hills	135,595	36,694	13,437	10,703	8,659	9,150	7,710	6,618	4,549	7,892
Northeast Los Angeles	242,714	72,108	19,997	22,631	19,134	17,739	14,785	11,661	8,826	13,369
Paramount	56,212	14,161	6,124	2,845	3,395	3,556	3,545	2,490	1,138	3,294
Pomona	149,417	37,679	14,128	9,691	8,693	8,412	8,219	7,224	5,227	8,309
Rosemead	51,775	13,512	3,775	5,510	3,190	3,471	3,000	2,473	1,390	3,036
South El Monte	20,043	4,206	2,102	1,117	1,050	1,241	934	639	323	1,324
South Gate	95,171	22,902	9,524	5,163	5,231	6,400	5,465	3,972	1,785	4,891
South Los Angeles	260,159	75,670	23,242	20,966	32,630	19,010	12,619	7,664	3,987	23,078
Southeast Los Angeles	254,411	59,752	28,785	13,417	26,651	16,007	9,380	5,094	2,674	27,654
Sun Valley - La Tuna Canyon	84,259	21,872	7,123	6,520	4,824	5,167	4,654	4,228	2,996	4,318
Vernon	1,435	339	149	67	90	98	74	53	24	90
Walnut Park	16,355	3,658	1,646	1,151	843	1,007	776	747	285	913
West Adams - Baldwin Hills - Leimert	170,307	60,206	13,623	17,446	21,111	15,140	10,802	7,848	5,343	11,665
West Athens	9,522	2,721	820	708	769	576	530	539	318	639
West Rancho Dominguez	21,796	6,094	1,759	2,601	1,811	1,487	1,257	949	594	1,313
Westlake	104,938	32,709	10,247	8,187	16,688	9,109	4,127	1,779	1,044	11,113
Westmont	31,201	9,189	3,225	1,982	3,899	2,301	1,535	958	489	3,033
Willowbrook	19,010	4,295	2,130	1,062	1,599	1,268	692	494	247	1,756
Wilmington - Harbor City	72,654	20,794	6,959	5,070	5,401	5,249	4,196	3,476	2,477	4,503
Orange County										
Midway City	5,202	1,506	374	536	315	207	330	352	302	203
Santa Ana	338,423	73,696	34,693	18,154	12,542	17,368	17,934	15,760	10,149	17,650
Stanton	33,214	9,510	2,988	3,157	1,942	2,354	2,204	1,992	1,033	1,575
Riverside County										
Coachella	24,616	5,540	2,640	1,556	1,569	1,724	1,157	701	342	1,811
Garnet	2,620	900	214	481	296	296	170	106	32	137
Good Hope	3,651	1,030	292	381	342	247	204	164	79	251

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Highgrove	3,995	1,198	376	319	302	303	262	239	122	232
Home Gardens	6,316	1,707	514	622	242	419	432	376	242	174
Indio Hills	2,273	1,020	94	871	136	235	258	198	195	55
Mead Valley	13,259	3,549	1,031	1,356	1,008	994	740	571	250	863
Mecca	427	88	46	19	35	27	12	11	3	50
Mesa Verde	13	1	0	0	0	0	0	0	0	0
North Shore	686	142	74	30	57	43	19	18	5	81
Oasis	1,867	395	235	64	138	156	55	29	17	188
Perris	36,289	9,799	3,733	2,605	2,369	2,617	2,451	1,675	745	1,948
Ripley	31	10	3	3	4	3	1	2	1	2
Thermal	1,540	411	154	140	109	96	75	61	68	124
Vista Santa Rosa	2,485	646	258	207	176	164	115	89	99	205
San Bernardino County										
Adelanto	5,082	1,392	500	306	395	341	362	228	65	297
Baker	5	1	1	0	0	0	0	0	0	0
Bloomington	14,069	3,732	1,239	906	757	945	895	737	396	677
Colton	48,850	14,800	4,642	3,897	3,828	3,759	3,355	2,643	1,290	2,651
Montclair	35,564	9,458	3,093	2,991	2,077	2,246	2,128	1,946	1,048	1,749
Muscoy	8,271	1,883	775	493	594	514	409	243	119	683
Rialto	84,576	22,386	8,011	5,121	4,750	5,461	5,424	4,400	2,384	4,146
San Bernardino	201,168	60,645	19,396	16,453	18,972	15,061	12,249	9,420	5,009	14,351
Ventura County										
Santa Paula	15,750	4,300	1,480	1,357	1,041	958	973	845	503	656
Saticoy	996	334	72	123	45	57	73	86	78	19

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Imperial County							
Brawley	3,914	3,277	289	71	134	143	12,262
Calexico	962	370	15	38	385	154	20,755
Calipatria	52	31	19	1	2	1	63
Desert Shores	4	3	0	0	0	0	3
El Centro	9,343	6,732	998	137	1,149	327	27,259
Heber	25	22	2	0	1	0	173
Holtville	317	285	1	-	11	20	851
Niland	6	3	2	0	0	0	7
Seeley	23	17	1	1	3	1	36
Westmorland	4	4	0	0	-	0	14
Winterhaven	13	5	0	7	0	1	6
Los Angeles County							
Alondra Park	5,521	2,253	1,578	12	1,274	404	2,930
Arleta - Pacoima	15,622	6,087	5,290	189	3,323	732	79,473
Azusa	14,788	9,922	1,302	202	2,520	842	29,042
Bell	3,181	2,087	127	74	444	449	34,118
Bell Gardens	2,721	2,016	263	116	232	95	40,730
Boyle Heights	7,388	2,422	2,338	215	2,054	360	81,915
Central City North	12,161	1,957	2,589	52	7,309	254	8,049
Commerce	989	583	184	9	136	77	11,611
Compton	40,066	1,099	36,516	253	1,349	848	53,708
Cudahy	1,586	1,136	61	26	186	178	23,604
East Los Angeles	3,987	2,030	351	87	1,138	381	120,170
East Rancho Dominguez	3,061	152	2,580	76	121	132	8,299
El Monte	30,830	8,269	613	213	20,652	1,083	79,557
Florence-Graham	8,355	470	7,658	68	20	139	49,508
Harbor Gateway	18,938	4,775	6,547	109	6,638	870	21,197
Hawaiian Gardens	4,738	1,987	690	47	1,698	317	10,308
Hawthorne	46,966	12,021	25,705	228	6,697	2,315	39,540
Huntington Park	3,039	1,852	404	62	473	249	60,067
Inglewood	60,473	4,395	51,920	273	1,288	2,597	52,799

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Lennox	2,152	823	822	53	256	198	18,522
Lynwood	12,250	1,934	9,039	206	789	282	55,998
Maywood	993	770	11	130	70	12	26,113
Mission Hills - Panorama City - North Hills	49,713	24,132	6,034	314	16,366	2,867	85,882
Northeast Los Angeles	79,719	30,987	4,463	802	38,694	4,774	162,995
Paramount	15,150	4,944	6,744	84	2,354	1,023	41,063
Pomona	53,010	25,095	13,367	493	10,879	3,176	96,407
Rosemead	30,305	4,220	289	59	24,941	796	21,470
South El Monte	2,810	842	24	31	1,790	124	17,233
South Gate	7,470	5,552	636	173	820	289	87,701
South Los Angeles	120,437	10,880	97,325	683	7,816	3,732	139,722
Southeast Los Angeles	69,584	2,195	64,214	531	1,289	1,356	184,827
Sun Valley - La Tuna Canyon	28,047	17,645	1,448	150	6,559	2,245	56,212
Vernon	88	46	18	6	11	7	1,347
Walnut Park	757	610	21	0	91	34	15,598
West Adams - Baldwin Hills - Leimert	105,400	6,346	88,207	402	5,884	4,561	64,908
West Athens	5,904	118	5,340	8	259	179	3,618
West Rancho Dominguez	14,073	252	13,082	104	238	398	7,723
Westlake	23,564	4,268	4,168	308	13,567	1,254	81,374
Westmont	19,047	398	18,057	117	215	260	12,154
Willowbrook	6,248	149	5,895	37	86	81	12,761
Wilmington - Harbor City	20,292	10,420	3,708	197	4,770	1,197	52,362
Orange County							
Midway City	4,098	1,638	47	14	2,276	123	1,104
Santa Ana	82,564	43,671	4,061	723	30,784	3,325	255,859
Stanton	17,445	9,996	670	237	5,597	945	15,769
Riverside County							
Coachella	1,821	1,250	289	38	150	94	22,795
Garnet	1,358	1,194	107	26	28	4	1,261
Good Hope	1,771	1,109	537	12	38	75	1,879
Highgrove	2,045	1,526	281	47	112	78	1,951

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Home Gardens	2,342	1,837	179	1	226	100	3,974
Indio Hills	1,758	1,630	13	2	47	67	514
Mead Valley	6,596	4,015	2,110	37	94	340	6,663
Mecca	20	17	-	1	1	1	407
Mesa Verde	7	4	3	0	0	0	6
North Shore	32	27	-	2	1	1	654
Oasis	148	62	-	45	36	5	1,719
Perris	16,442	9,128	5,271	156	977	910	19,848
Ripley	14	11	3	1	-	-	17
Thermal	317	278	3	3	20	13	1,223
Vista Santa Rosa	474	401	4	14	36	19	2,012
San Bernardino County							
Adelanto	2,954	2,045	584	48	110	167	2,128
Baker	4	3	1	0	0	0	1
Bloomington	5,620	3,941	1,158	104	217	200	8,449
Colton	18,963	11,598	4,107	234	2,150	876	29,887
Montclair	13,848	8,448	2,028	53	2,760	559	21,716
Muscoy	3,039	1,421	1,110	67	157	284	5,233
Rialto	38,388	17,315	16,789	283	2,050	1,952	46,188
San Bernardino	105,928	60,203	30,284	1,328	8,095	6,018	95,240
Ventura County							
Santa Paula	3,684	3,254	35	56	190	150	12,065
Saticoy	569	496	12	4	33	23	426

TABLE 97   Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Imperial County				
Brawley	4,472	1,201	665	3,960
Calexico	11,113	3,161	800	6,301
Calipatria	20	4	2	31
Desert Shores	2	1	0	2
El Centro	12,564	2,608	1,296	7,817
Heber	73	19	3	56
Holtville	386	98	27	263
Niland	2	0	0	3
Seeley	18	3	1	11
Westmorland	6	1	1	6
Winterhaven	2	1	1	4
Los Angeles County				
Alondra Park	2,708	210	307	1,340
Arleta - Pacoima	44,550	8,784	2,264	31,210
Azusa	14,815	2,333	1,217	9,455
Bell	19,929	4,383	1,439	12,484
Bell Gardens	21,920	5,488	1,600	14,180
Boyle Heights	45,671	12,809	6,145	32,813
Central City North	10,180	2,462	1,892	7,407
Commerce	4,858	809	572	3,825
Compton	29,436	7,256	3,358	24,250
Cudahy	13,365	2,894	965	8,051
East Los Angeles	60,500	16,305	6,408	43,400
East Rancho Dominguez	4,669	1,156	299	3,139
El Monte	56,458	11,853	3,840	33,046
Florence-Graham	26,176	6,550	3,039	19,178
Harbor Gateway	16,324	2,952	1,705	9,001
Hawaiian Gardens	6,705	1,195	354	3,865
Hawthorne	29,274	2,760	4,150	16,905
Huntington Park	35,173	8,548	3,707	21,935
Inglewood	33,849	5,152	5,521	23,671

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Lennox	11,386	1,939	985	7,019
Lynwood	29,827	6,363	1,834	20,427
Maywood	14,916	3,832	1,126	9,324
Mission Hills - Panorama City - North Hills	66,874	10,626	5,432	32,781
Northeast Los Angeles	110,828	16,587	11,404	64,114
Paramount	22,849	4,667	1,752	14,344
Pomona	54,884	9,720	3,962	35,265
Rosemead	28,836	4,171	1,625	14,876
South El Monte	10,884	2,828	695	6,888
South Gate	46,978	8,917	2,939	29,704
South Los Angeles	97,490	17,218	20,495	71,402
Southeast Los Angeles	112,428	33,373	18,510	81,192
Sun Valley - La Tuna Canyon	42,057	5,767	2,260	22,887
Vernon	709	169	65	475
Walnut Park	8,542	2,060	510	5,594
West Adams - Baldwin Hills - Leimert	48,836	5,826	13,204	35,692
West Athens	2,549	338	441	1,957
West Rancho Dominguez	4,342	963	877	4,826
Westlake	70,113	18,628	16,065	37,083
Westmont	7,337	1,256	2,268	7,188
Willowbrook	6,927	1,750	803	5,611
Wilmington - Harbor City	29,807	5,246	2,916	19,161
Orange County				
Midway City	2,313	229	149	1,100
Santa Ana	179,584	39,643	7,604	101,182
Stanton	13,890	1,820	965	7,364
Riverside County				
Coachella	11,402	3,593	452	7,635
Garnet	718	92	48	553
Good Hope	866	141	98	913
Highgrove	811	122	89	687
Home Gardens	1,942	430	82	1,528
Indio Hills	311	14	23	197
Mead Valley	2,981	398	226	3,387

TABLE 97 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2000) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Mecca	247	118	8	156
Mesa Verde	2	0	0	4
North Shore	397	190	13	251
Oasis	1,141	583	45	639
Perris	9,350	1,369	783	7,152
Ripley	6	1	1	10
Thermal	680	286	33	428
Vista Santa Rosa	1,155	506	54	709
San Bernardino County				
Adelanto	795	112	145	859
Baker	0	0	0	0
Bloomington	3,664	627	232	3,120
Colton	11,467	1,719	1,607	8,594
Montclair	12,350	1,867	825	8,151
Muscoy	2,248	457	202	2,098
Rialto	20,481	2,878	2,086	15,918
San Bernardino	41,488	6,294	9,118	37,943
Ventura County				
Santa Paula	5,058	1,639	456	4,012
Saticoy	192	24	14	154

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012)

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Imperial County										
Brawley	22,000	6,602	2,366	2,498	2,055	1,576	1,325	994	652	1,402
Calexico	39,687	10,089	3,787	4,485	3,316	2,543	2,017	1,368	845	2,146
Calipatria	3,213	602	260	224	189	147	122	89	55	128
Desert Shores	153	49	17	18	15	11	10	8	5	10
El Centro	40,909	12,315	3,708	4,803	3,849	2,942	2,486	1,861	1,176	2,615
Heber	4,280	1,060	518	417	350	268	212	142	87	225
Holtville	2,268	654	203	290	205	157	132	97	64	138
Niland	795	281	68	125	83	64	56	46	32	59
Seeley	1,724	472	191	175	147	114	96	69	46	100
Westmorland	1,367	375	130	180	113	87	75	60	40	79
Winterhaven	32	12	3	7	4	3	2	2	1	3
Los Angeles County										
Alondra Park	9,200	2,912	864	910	787	670	630	500	325	564
Arleta - Pacoima	104,153	22,307	10,487	8,149	4,319	5,568	5,583	4,552	2,285	4,056
Azusa	46,172	12,391	4,318	3,673	2,447	2,756	2,877	2,593	1,717	1,823
Bell	36,188	8,983	3,899	2,396	2,879	2,524	1,824	1,251	506	2,331
Bell Gardens	41,791	9,533	4,768	2,360	3,023	2,691	1,938	1,343	538	2,472
Boyle Heights	84,640	21,570	8,596	8,164	9,469	5,311	3,530	2,002	1,258	8,046
Central City North	25,256	6,837	912	2,538	3,391	1,180	926	722	618	2,394
Commerce	13,113	3,409	1,247	1,475	1,089	948	690	484	198	882
Compton	100,246	23,722	11,021	7,895	6,463	6,561	5,044	3,927	1,726	5,207
Cudahy	24,101	5,699	2,647	1,355	1,808	1,615	1,162	802	312	1,479
East Los Angeles	126,575	30,708	13,347	11,246	9,852	9,093	5,843	3,999	1,921	8,152
East Rancho Dominguez	12,434	2,507	1,427	702	646	738	565	399	158	550
El Monte	110,505	26,840	10,310	10,683	7,564	7,107	5,667	4,133	2,369	5,774
Florence-Graham	62,551	13,672	7,439	3,608	4,640	3,776	2,659	1,697	900	4,002
Harbor Gateway	41,270	12,011	3,816	4,001	3,578	2,842	2,349	1,978	1,265	2,470
Hawaiian Gardens	14,059	3,468	1,485	1,161	406	685	704	864	809	268
Hawthorne	87,703	29,198	8,171	7,044	7,848	7,258	6,610	4,607	2,875	5,525
Huntington Park	59,222	14,741	6,243	3,970	4,733	4,280	2,988	1,836	904	4,318

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Inglewood	112,721	37,034	9,839	10,953	10,753	9,262	7,493	5,735	3,791	7,016
Lennox	20,465	4,674	2,272	1,198	1,308	1,180	1,140	681	365	891
Lynwood	69,600	14,551	7,543	4,079	3,950	3,934	3,400	2,115	1,153	3,151
Maywood	26,610	6,336	3,015	1,729	1,990	1,805	1,293	890	357	1,646
Mission Hills - Panorama City - North Hills	145,056	38,079	13,432	13,608	9,439	9,226	8,122	6,410	4,882	8,169
Northeast Los Angeles	239,896	73,670	18,995	27,744	18,707	16,198	15,037	12,603	11,126	13,444
Paramount	54,968	13,964	5,711	3,762	3,199	3,934	3,329	2,338	1,163	2,102
Pomona	149,697	38,203	14,491	11,734	8,656	9,144	8,869	6,947	4,586	6,713
Rosemead	54,385	14,285	3,658	7,255	3,618	3,405	2,683	2,545	2,033	2,260
South El Monte	18,750	4,154	1,847	1,666	782	996	1,002	860	514	567
South Gate	94,726	23,206	9,632	6,860	6,122	6,412	5,503	3,318	1,851	5,012
South Los Angeles	273,896	76,738	24,434	24,159	32,510	19,138	13,284	7,700	4,105	25,389
Southeast Los Angeles	284,837	64,685	34,549	15,228	28,118	17,375	10,981	5,932	2,279	26,301
Sun Valley - La Tuna Canyon	88,241	22,496	7,788	8,095	5,135	4,923	4,693	4,082	3,662	3,521
Vernon	638	144	56	48	46	39	28	18	13	42
Walnut Park	15,968	3,602	1,556	1,309	1,156	1,043	734	450	219	1,051
West Adams - Baldwin Hills - Leimert	174,909	61,220	14,356	20,051	20,990	15,552	11,224	8,533	4,921	14,264
West Athens	8,996	2,604	841	866	844	628	544	363	225	509
West Rancho Dominguez	21,471	5,916	1,875	2,730	1,701	1,512	1,175	1,023	505	1,295
Westlake	111,156	37,184	9,812	9,843	15,469	9,800	5,474	3,364	3,076	10,098
Westmont	32,088	9,736	3,296	2,809	3,218	2,279	2,020	1,366	852	1,907
Willowbrook	21,151	4,665	2,514	1,242	1,234	1,330	1,016	760	326	1,022
Wilmington - Harbor City	75,314	21,158	7,336	6,539	5,695	5,084	4,255	3,728	2,395	3,806
Orange County										
Midway City	6,894	1,973	506	911	357	371	405	442	396	198
Santa Ana	329,011	73,578	34,247	24,400	12,083	16,795	18,736	15,516	10,448	10,960
Stanton	35,962	9,875	3,338	3,708	1,618	2,090	2,253	2,153	1,762	1,054
Riverside County										
Coachella	41,441	9,021	5,280	2,055	2,830	2,336	1,967	1,182	706	1,598
Garnet	6,544	1,896	675	966	499	544	370	258	225	262
Good Hope	9,115	2,090	993	750	368	431	464	436	391	284

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Highgrove	3,960	1,136	329	381	192	217	252	248	226	154
Home Gardens	10,563	2,670	882	1,856	476	531	605	570	487	361
Indio Hills	248	75	25	20	18	16	17	12	13	13
Mead Valley	19,048	4,309	1,919	1,587	762	866	953	904	823	581
Mecca	8,343	1,805	1,150	284	580	472	392	232	130	320
Mesa Verde	7	2	1	1	1	0	0	0	0	0
North Shore	1,725	360	216	81	112	93	78	47	30	63
Oasis	5,548	1,194	760	287	370	307	259	158	101	211
Perris	71,185	16,788	8,166	4,086	3,154	3,505	3,718	3,515	2,895	2,228
Ripley	31	10	4	3	3	2	2	2	1	2
Thermal	2,761	659	358	179	204	169	141	86	59	115
Vista Santa Rosa	3,741	1,116	272	660	282	243	238	169	185	197
San Bernardino County										
Adelanto	29,861	7,611	3,676	1,551	2,197	1,697	1,811	1,340	566	1,556
Baker	535	154	57	38	45	39	35	22	13	25
Bloomington	21,594	4,911	2,201	1,427	1,042	1,319	1,159	923	469	822
Colton	51,749	14,813	5,581	4,016	3,280	3,984	3,336	2,727	1,487	2,512
Montclair	38,133	9,724	3,626	3,409	1,590	2,079	2,089	2,174	1,793	1,041
Muscoy	10,649	2,203	1,285	625	557	481	487	428	251	374
Rialto	101,914	25,467	10,625	7,505	5,937	6,820	5,601	4,660	2,449	4,301
San Bernardino	215,732	60,079	22,847	18,879	18,801	15,506	11,770	8,782	5,220	14,541
Ventura County										
Santa Paula	27,320	7,634	2,818	2,960	1,292	1,725	1,715	1,651	1,251	843
Saticoy	988	387	66	298	64	81	86	85	71	42

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Imperial County							
Brawley	3,560	2,847	306	94	176	138	18,440
Calexico	1,466	784	110	46	429	98	38,221
Calipatria	882	353	449	18	32	30	2,331
Desert Shores	41	33	4	2	1	2	111
El Centro	7,085	4,984	1,053	97	648	304	33,824
Heber	76	63	0	0	10	3	4,204
Holtville	303	263	20	3	8	10	1,965
Niland	280	204	30	11	19	16	515
Seeley	222	162	21	0	15	23	1,502
Westmorland	305	255	20	2	17	11	1,062
Winterhaven	17	8	0	7	0	1	15
Los Angeles County							
Alondra Park	4,692	1,894	1,008	18	1,538	235	4,509
Arleta - Pacoima	14,149	5,782	3,055	160	4,252	901	90,004
Azusa	13,082	7,687	1,031	106	3,619	639	33,090
Bell	2,457	1,769	120	74	265	230	33,731
Bell Gardens	1,719	1,028	194	105	286	106	40,072
Boyle Heights	6,092	2,032	839	117	2,701	403	78,548
Central City North	17,581	4,235	3,562	46	9,293	445	7,675
Commerce	815	434	96	58	164	62	12,298
Compton	33,459	1,174	30,350	155	750	1,030	66,787
Cudahy	1,014	587	174	45	99	108	23,087
East Los Angeles	4,162	2,083	426	180	1,108	366	122,413
East Rancho Dominguez	2,206	139	1,891	9	85	82	10,228
El Monte	35,457	5,367	501	140	28,844	604	75,048
Florence-Graham	6,368	508	5,367	47	193	253	56,183
Harbor Gateway	17,274	3,345	5,462	75	7,534	858	23,995
Hawaiian Gardens	3,253	1,061	442	34	1,581	135	10,807
Hawthorne	39,305	9,308	20,762	195	7,046	1,993	48,397
Huntington Park	1,734	879	212	22	430	190	57,489
Inglewood	54,650	3,576	46,695	202	1,970	2,206	58,071

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012)Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Lennox	1,845	576	645	22	500	103	18,620
Lynwood	8,934	1,516	6,337	86	603	391	60,667
Maywood	729	501	65	17	89	57	25,881
Mission Hills - Panorama City - North Hills	47,440	20,749	4,500	255	19,613	2,322	97,616
Northeast Los Angeles	84,345	34,628	4,652	532	40,606	3,927	155,550
Paramount	11,610	3,100	5,798	87	2,067	559	43,358
Pomona	43,740	18,403	9,796	308	12,908	2,324	105,957
Rosemead	35,993	2,507	205	44	32,851	385	18,392
South El Monte	3,537	601	37	19	2,788	92	15,213
South Gate	4,982	3,182	627	106	729	338	89,744
South Los Angeles	107,288	12,292	78,002	502	11,583	4,908	166,608
Southeast Los Angeles	60,934	3,872	52,499	363	1,959	2,241	223,903
Sun Valley - La Tuna Canyon	27,042	16,223	1,609	201	7,732	1,276	61,199
Vernon	102	78	11	1	4	9	537
Walnut Park	435	261	36	10	92	36	15,533
West Adams - Baldwin Hills - Leimert	96,594	9,175	75,583	354	6,582	4,900	78,314
West Athens	4,898	135	4,499	5	115	144	4,098
West Rancho Dominguez	11,493	313	10,692	32	143	312	9,979
Westlake	31,248	5,953	5,013	198	18,712	1,372	79,908
Westmont	16,960	360	15,878	45	143	534	15,128
Willowbrook	5,302	168	4,876	25	88	146	15,849
Wilmington - Harbor City	18,842	8,550	3,571	171	5,552	997	56,472
Orange County							
Midway City	5,178	1,377	40	16	3,595	149	1,715
Santa Ana	73,840	31,443	3,327	437	35,970	2,663	255,170
Stanton	17,580	7,478	838	100	8,491	674	18,382
Riverside County							
Coachella	2,272	1,529	254	40	280	169	39,169
Garnet	2,181	1,753	246	26	83	73	4,362
Good Hope	2,006	1,150	638	25	90	103	7,109
Highgrove	1,768	1,403	92	12	192	69	2,192

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Home Gardens	3,139	2,506	197	21	330	85	7,424
Indio Hills	116	103	4	0	6	3	132
Mead Valley	5,740	3,503	1,474	52	433	279	13,308
Mecca	191	109	11	9	29	32	8,153
Mesa Verde	3	3	0	0	0	0	4
North Shore	92	69	8	4	8	4	1,633
Oasis	323	172	23	34	78	16	5,225
Perris	20,280	8,700	7,281	174	2,663	1,462	50,904
Ripley	9	4	4	0	0	0	22
Thermal	124	80	7	8	18	11	2,637
Vista Santa Rosa	1,317	1,170	23	50	33	41	2,424
San Bernardino County							
Adelanto	12,160	5,000	5,440	112	759	849	17,701
Baker	239	199	6	5	14	14	295
Bloomington	3,928	2,580	685	58	387	218	17,666
Colton	14,877	6,895	3,900	138	2,944	1,000	36,872
Montclair	10,985	5,179	1,776	103	3,399	529	27,148
Muscoy	1,767	825	532	23	270	117	8,882
Rialto	32,136	12,084	15,257	272	2,848	1,674	69,777
San Bernardino	83,744	40,248	29,017	903	8,837	4,739	131,989
Ventura County							
Santa Paula	5,391	4,807	84	103	222	175	21,929
Saticoy	420	363	16	6	21	14	568

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Imperial County				
Brawley	8,450	2,709	870	4,283
Calexico	17,229	5,806	1,088	9,203
Calipatria	978	245	70	709
Desert Shores	51	14	5	25
El Centro	15,852	5,092	1,631	8,200
Heber	1,794	496	52	640
Holtville	887	310	97	471
Niland	265	68	32	141
Seeley	714	218	60	285
Westmorland	560	176	46	268
Winterhaven	9	2	2	6
Los Angeles County				
Alondra Park	3,214	332	277	1,221
Arleta - Pacoima	47,691	9,854	1,384	28,342
Azusa	17,600	3,360	811	7,094
Bell	17,292	4,113	1,042	10,857
Bell Gardens	19,942	4,816	1,068	12,045
Boyle Heights	39,663	11,511	5,002	23,548
Central City North	11,576	3,102	2,210	7,345
Commerce	5,995	1,450	423	3,811
Compton	31,893	8,601	2,141	20,938
Cudahy	11,743	2,858	691	7,215
East Los Angeles	53,618	14,732	5,009	33,799
East Rancho Dominguez	4,827	1,341	202	3,075
El Monte	58,187	12,892	2,580	26,437
Florence-Graham	28,236	8,111	2,025	17,984
Harbor Gateway	17,256	2,936	1,348	7,833
Hawaiian Gardens	5,486	1,082	212	2,123
Hawthorne	34,435	5,961	3,059	13,735
Huntington Park	29,651	8,112	2,639	18,494
Inglewood	35,724	5,856	4,569	21,500

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Lennox	10,031	1,712	417	4,465
Lynwood	28,812	6,021	1,177	17,194
Maywood	12,717	3,114	732	7,947
Mission Hills - Panorama City - North Hills	72,990	11,821	5,091	27,263
Northeast Los Angeles	103,893	17,072	8,167	47,038
Paramount	21,526	4,652	1,088	10,975
Pomona	53,876	8,978	2,873	24,291
Rosemead	30,981	5,713	1,075	12,310
South El Monte	9,019	2,365	321	4,127
South Gate	43,510	8,851	2,143	25,210
South Los Angeles	110,289	26,236	17,587	58,462
Southeast Los Angeles	120,448	34,905	13,516	76,656
Sun Valley - La Tuna Canyon	41,765	6,581	1,930	16,888
Vernon	298	71	23	199
Walnut Park	7,973	2,322	488	5,574
West Adams - Baldwin Hills - Leimert	56,337	9,685	11,163	31,450
West Athens	2,458	406	345	1,230
West Rancho Dominguez	4,896	1,239	531	3,700
Westlake	64,603	16,069	13,249	29,371
Westmont	9,045	1,210	1,520	4,637
Willowbrook	7,524	2,023	445	4,701
Wilmington - Harbor City	29,243	5,058	1,957	15,035
Orange County				
Midway City	3,492	390	180	1,110
Santa Ana	167,643	42,086	5,638	82,561
Stanton	15,919	1,918	989	6,180
Riverside County				
Coachella	16,856	6,052	423	9,556
Garnet	2,228	421	98	1,213
Good Hope	3,366	493	86	1,739
Highgrove	1,014	107	51	413
Home Gardens	3,614	721	152	2,262

TABLE 98 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2012) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Indio Hills	69	21	2	28
Mead Valley	6,413	975	166	3,270
Mecca	3,148	1,160	109	1,615
Mesa Verde	2	1	0	1
North Shore	886	377	19	508
Oasis	3,064	1,439	61	1,793
Perris	23,423	3,811	1,097	11,879
Ripley	10	3	1	5
Thermal	1,434	546	28	751
Vista Santa Rosa	1,445	506	40	854
San Bernardino County				
Adelanto	6,738	1,438	599	3,627
Baker	89	17	19	89
Bloomington	6,943	1,203	183	3,825
Colton	15,258	2,243	1,021	7,012
Montclair	13,112	1,706	507	5,513
Muscoy	2,749	370	60	1,608
Rialto	28,493	4,519	1,412	15,430
San Bernardino	52,348	7,390	6,235	31,504
Ventura County				
Santa Paula	8,854	2,596	610	4,671
Saticoy	281	101	31	199

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040)

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Imperial County										
Brawley	35,629	12,465	2,431	5,637	4,015	3,103	2,521	1,759	1,067	2,643
Calexico	56,830	17,211	4,171	8,546	5,573	4,295	3,463	2,404	1,476	3,654
Calipatria	4,339	929	231	556	297	231	188	131	83	197
Desert Shores	380	153	26	60	50	38	31	21	12	33
El Centro	56,352	18,541	3,892	8,699	5,934	4,567	3,739	2,659	1,642	3,935
Heber	4,646	1,198	531	506	395	300	238	160	104	254
Holtville	3,130	990	212	496	320	246	200	140	84	211
Niland	1,232	445	83	195	144	111	91	62	37	95
Seeley	2,045	596	208	239	187	147	121	86	56	127
Westmorland	1,716	497	128	264	155	122	100	74	46	105
Winterhaven	57	22	4	9	7	5	4	3	2	5
Los Angeles County										
Alondra Park	9,519	3,048	850	1,302	837	721	654	504	332	596
Arleta - Pacoima	126,650	27,842	10,929	20,087	5,751	6,651	6,370	5,442	3,629	4,880
Azusa	53,122	14,849	4,581	7,847	3,144	3,292	3,339	2,941	2,134	2,287
Bell	37,363	9,305	3,871	3,568	3,009	2,610	1,851	1,285	550	2,424
Bell Gardens	43,469	9,933	4,776	3,649	3,188	2,789	1,974	1,390	591	2,579
Boyle Heights	94,184	26,772	8,899	13,854	11,274	6,378	4,335	2,709	2,076	8,851
Central City North	44,615	15,210	2,448	8,809	3,908	3,228	2,902	2,672	2,500	2,704
Commerce	13,684	3,597	1,225	2,139	1,161	988	711	511	226	927
Compton	103,922	24,669	10,938	11,668	6,753	7,023	5,278	3,896	1,720	5,452
Cudahy	24,167	5,716	2,595	1,872	1,842	1,629	1,145	783	317	1,507
East Los Angeles	138,307	35,753	12,973	20,551	10,879	9,875	6,690	4,969	3,340	8,594
East Rancho Dominguez	12,640	2,572	1,414	1,003	663	777	581	394	158	570
El Monte	132,734	33,459	11,475	19,959	9,465	8,559	6,931	5,129	3,374	6,874
Florence-Graham	65,275	14,837	7,278	6,211	4,870	4,071	2,854	1,896	1,146	4,149
Harbor Gateway	43,591	13,280	3,826	5,963	4,018	3,144	2,571	2,154	1,393	2,720
Hawaiian Gardens	15,477	3,896	1,528	1,934	480	781	789	954	891	342
Hawthorne	89,586	30,620	7,399	12,875	8,082	7,257	6,689	5,007	3,586	5,634
Huntington Park	68,117	17,501	6,656	7,633	5,526	4,972	3,464	2,213	1,325	4,832

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Inglewood	130,795	43,753	10,702	19,270	12,873	10,939	8,766	6,703	4,471	8,211
Lennox	21,385	5,068	2,281	1,863	1,437	1,275	1,207	731	418	970
Lynwood	75,385	16,050	7,748	7,014	4,343	4,376	3,645	2,300	1,386	3,450
Maywood	27,910	6,686	3,021	2,690	2,121	1,891	1,334	928	412	1,731
Mission Hills - Panorama City - North Hills	168,353	45,634	12,678	31,784	11,018	10,422	9,324	8,082	6,789	8,619
Northeast Los Angeles	272,493	88,032	19,893	46,049	22,830	19,460	17,920	14,839	12,983	15,941
Paramount	58,379	14,882	5,785	5,961	3,453	4,189	3,515	2,469	1,257	2,288
Pomona	189,297	50,616	15,827	31,827	11,786	11,690	10,897	9,083	7,160	8,573
Rosemead	60,795	16,405	3,897	11,281	4,263	3,908	3,059	2,859	2,317	2,647
South El Monte	20,995	4,786	1,930	2,816	941	1,142	1,122	969	612	679
South Gate	111,748	28,283	10,479	13,561	7,441	7,757	6,417	4,062	2,606	5,918
South Los Angeles	338,441	99,255	26,367	60,117	34,558	23,575	17,961	13,055	10,106	25,270
Southeast Los Angeles	315,916	74,879	32,617	39,204	27,560	18,988	13,390	8,832	6,108	24,489
Sun Valley - La Tuna Canyon	89,385	23,763	7,598	11,227	5,550	5,283	4,855	4,230	3,845	3,796
Vernon	824	207	71	116	59	51	39	31	28	48
Walnut Park	16,868	3,981	1,308	2,980	1,119	1,006	789	607	460	908
West Adams - Baldwin Hills - Leimert	224,742	87,208	15,714	47,549	23,560	19,980	16,577	14,664	12,427	15,942
West Athens	9,137	2,660	820	1,191	875	650	550	362	223	528
West Rancho Dominguez	22,028	6,107	1,814	3,828	1,775	1,612	1,222	1,004	493	1,345
Westlake	132,235	50,310	9,068	30,500	12,784	11,039	9,581	8,701	8,204	8,597
Westmont	32,197	9,760	3,201	3,802	3,303	2,338	2,002	1,324	793	1,946
Willowbrook	23,408	5,631	2,503	2,613	1,463	1,562	1,202	900	504	1,171
Wilmington - Harbor City	78,536	22,333	7,089	10,448	6,085	5,361	4,449	3,851	2,587	4,025
Orange County										
Midway City	7,036	2,026	495	1,324	391	395	421	442	377	202
Santa Ana	342,082	78,079	34,674	38,698	13,152	18,005	20,081	16,404	10,438	11,293
Stanton	38,522	10,796	3,382	6,135	1,844	2,360	2,504	2,294	1,794	1,123
Riverside County										
Coachella	109,719	30,012	8,096	23,236	6,707	6,943	6,601	5,739	4,022	4,142
Garnet	10,291	3,287	921	1,853	799	860	683	535	410	451
Good Hope	11,968	3,122	1,081	1,847	597	677	685	620	543	423

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Population	Households	Age 5 & Above	Age 65 & Above	Income Quintile 1	Income Quintile 2	Income Quintile 3	Income Quintile 4	Income Quintile 5	Population Under Poverty
Highgrove	5,698	1,776	432	1,009	353	382	393	359	288	242
Home Gardens	12,394	3,330	972	2,588	624	694	754	686	573	455
Indio Hills	870	269	63	187	58	62	59	52	37	37
Mead Valley	23,479	5,892	2,108	3,357	1,135	1,270	1,301	1,186	1,000	804
Mecca	9,707	2,309	1,149	840	664	584	501	345	215	379
Mesa Verde	8	2	1	1	1	1	1	0	0	0
North Shore	1,851	407	212	151	119	103	89	58	38	69
Oasis	7,631	1,962	881	832	535	477	421	305	223	315
Perris	116,644	32,749	8,638	24,389	7,151	7,497	7,207	6,378	4,517	4,479
Ripley	39	14	3	8	3	3	3	3	2	2
Thermal	6,120	1,821	584	958	453	432	393	308	234	272
Vista Santa Rosa	5,569	1,738	403	1,134	392	396	376	309	265	252
San Bernardino County										
Adelanto	62,353	16,158	5,464	9,812	3,863	3,612	3,648	3,123	1,912	2,590
Baker	546	159	55	51	44	39	36	23	17	26
Bloomington	22,761	5,273	2,147	2,350	1,106	1,402	1,235	992	538	865
Colton	63,909	19,233	6,102	8,068	4,253	4,944	4,319	3,599	2,117	3,112
Montclair	43,745	11,742	3,903	5,427	2,054	2,540	2,562	2,565	2,020	1,342
Muscoy	10,976	2,301	1,264	862	584	500	508	442	267	389
Rialto	111,951	30,843	10,455	12,983	7,073	7,896	6,790	5,761	3,324	4,991
San Bernardino	246,972	72,342	23,825	31,516	21,309	18,314	14,538	11,222	6,959	15,482
Ventura County										
Santa Paula	31,466	9,052	2,658	6,218	1,472	1,942	1,998	2,007	1,633	874
Saticoy	1,033	404	60	402	70	90	90	87	67	44

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Imperial County							
Brawley	4,420	1,828	976	474	737	405	31,209
Calexico	5,980	2,505	1,260	614	1,044	557	50,850
Calipatria	938	320	432	51	91	44	3,401
Desert Shores	47	19	10	5	8	4	333
El Centro	7,810	4,056	1,440	622	1,097	595	48,541
Heber	112	71	10	5	18	8	4,534
Holtville	389	161	86	42	65	35	2,741
Niland	153	63	34	17	25	14	1,079
Seeley	230	149	26	5	23	27	1,814
Westmorland	248	140	40	17	32	19	1,469
Winterhaven	7	3	2	1	1	1	50
Los Angeles County							
Alondra Park	4,761	1,619	780	24	2,032	307	4,758
Arleta - Pacoima	33,782	11,875	3,222	313	15,687	2,684	92,869
Azusa	15,456	6,456	1,111	156	6,601	1,131	37,666
Bell	2,865	1,675	133	93	629	335	34,498
Bell Gardens	2,462	1,144	208	135	777	198	41,007
Boyle Heights	11,195	3,537	1,016	188	5,546	909	82,989
Central City North	22,976	8,242	3,771	140	9,281	1,542	21,639
Commerce	1,076	459	94	72	349	103	12,608
Compton	30,363	1,750	24,819	221	2,010	1,564	73,558
Cudahy	962	498	129	55	142	139	23,205
East Los Angeles	19,280	6,921	1,456	280	8,966	1,656	119,027
East Rancho Dominguez	1,893	156	1,444	13	166	114	10,747
El Monte	49,450	8,510	1,367	223	37,624	1,726	83,285
Florence-Graham	8,202	1,501	4,292	76	1,756	578	57,073
Harbor Gateway	18,381	3,107	4,215	96	9,817	1,145	25,210
Hawaiian Gardens	4,060	1,109	370	46	2,315	220	11,416
Hawthorne	38,021	10,468	12,059	246	12,493	2,756	51,566
Huntington Park	6,165	2,275	502	56	2,737	594	61,952
Inglewood	58,032	7,083	38,516	342	8,218	3,871	72,763

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Lennox	2,205	638	510	30	863	164	19,181
Lynwood	10,428	2,326	4,998	127	2,243	735	64,957
Maywood	1,325	642	100	26	434	123	26,585
Mission Hills - Panorama City - North Hills	72,674	26,404	5,017	446	35,925	4,884	95,679
Northeast Los Angeles	103,428	34,047	4,855	747	57,518	6,261	169,065
Paramount	12,255	3,230	4,503	122	3,549	852	46,123
Pomona	68,951	24,636	8,362	588	30,078	5,287	120,345
Rosemead	41,562	2,904	383	69	37,550	656	19,233
South El Monte	5,094	864	113	30	3,891	197	15,901
South Gate	13,202	5,622	1,132	186	5,160	1,102	98,546
South Los Angeles	141,155	30,906	53,923	957	45,077	10,292	197,286
Southeast Los Angeles	84,661	19,101	33,707	692	25,233	5,927	231,255
Sun Valley - La Tuna Canyon	27,110	13,794	1,245	251	10,168	1,652	62,275
Vernon	180	65	19	1	80	15	645
Walnut Park	4,297	1,524	326	33	2,069	345	12,570
West Adams - Baldwin Hills - Leimert	112,114	29,807	32,659	705	40,185	8,758	112,628
West Athens	4,440	159	3,848	8	215	211	4,697
West Rancho Dominguez	10,418	403	9,131	48	362	475	11,610
Westlake	64,096	21,405	5,003	433	32,334	4,920	68,140
Westmont	14,972	368	13,521	63	243	777	17,225
Willowbrook	6,040	871	3,637	47	1,136	348	17,368
Wilmington - Harbor City	20,068	8,393	2,072	226	7,925	1,452	58,468
Orange County							
Midway City	4,959	767	35	18	3,978	162	2,077
Santa Ana	65,777	18,530	2,688	471	40,901	3,187	276,305
Stanton	16,253	4,447	708	116	10,160	822	22,269
Riverside County							
Coachella	39,983	20,486	7,565	638	8,122	3,172	69,737
Garnet	3,230	1,951	575	50	444	209	7,062
Good Hope	3,345	1,665	874	50	510	246	8,623
Highgrove	2,172	1,304	310	27	383	148	3,525

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Non-Hispanic Total	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Native American	Non-Hispanic Asian	Non-Hispanic Other	Hispanic Total
Home Gardens	3,327	2,373	347	34	431	141	9,067
Indio Hills	327	167	62	5	67	26	542
Mead Valley	6,874	3,386	1,892	89	1,022	486	16,605
Mecca	1,101	561	192	21	221	104	8,606
Mesa Verde	3	3	0	0	0	0	5
North Shore	182	105	29	6	30	13	1,669
Oasis	1,148	577	188	45	250	88	6,483
Perris	43,285	22,081	8,373	671	8,744	3,415	73,358
Ripley	15	7	3	0	3	1	24
Thermal	1,413	731	255	28	285	115	4,707
Vista Santa Rosa	1,808	1,055	277	45	296	135	3,760
San Bernardino County							
Adelanto	23,394	6,799	8,829	351	5,262	2,152	38,959
Baker	195	141	10	6	20	18	352
Bloomington	4,247	1,869	1,163	77	800	339	18,514
Colton	17,856	5,270	5,904	247	4,817	1,619	46,053
Montclair	12,107	3,880	2,733	147	4,531	815	31,638
Muscoy	1,685	544	632	26	341	141	9,292
Rialto	35,217	9,544	17,218	384	5,599	2,472	76,734
San Bernardino	86,018	27,629	35,455	1,233	15,034	6,667	160,954
Ventura County							
Santa Paula	6,148	4,327	78	113	1,157	473	25,318
Saticoy	296	241	9	7	25	15	737

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040)Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Imperial County				
Brawley	15,320	5,202	1,582	8,978
Calexico	25,441	8,389	1,989	14,674
Calipatria	1,633	518	109	1,219
Desert Shores	156	50	21	94
El Centro	23,770	7,915	2,290	13,559
Heber	1,941	574	72	778
Holtville	1,385	488	119	805
Niland	492	161	61	277
Seeley	805	256	80	366
Westmorland	727	235	58	386
Winterhaven	23	7	3	13
Los Angeles County				
Alondra Park	3,640	394	278	1,283
Arleta - Pacoima	64,629	14,077	2,587	34,622
Azusa	23,179	4,627	1,346	9,924
Bell	18,512	4,536	1,074	11,617
Bell Gardens	21,381	5,301	1,083	13,102
Boyle Heights	40,694	10,028	6,064	19,007
Central City North	16,030	2,876	3,777	8,948
Commerce	6,585	1,632	428	4,156
Compton	36,941	9,882	2,093	24,125
Cudahy	12,294	2,991	626	7,611
East Los Angeles	61,416	15,644	5,910	38,419
East Rancho Dominguez	5,386	1,461	204	3,388
El Monte	72,232	17,713	4,155	33,541
Florence-Graham	30,433	8,150	2,186	18,712
Harbor Gateway	19,877	3,096	1,532	8,633
Hawaiian Gardens	6,568	1,451	227	2,924
Hawthorne	39,751	5,463	3,471	15,730
Huntington Park	34,733	8,875	3,346	21,079
Inglewood	47,834	8,290	5,310	27,573

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Lennox	11,105	1,635	470	5,227
Lynwood	33,925	7,241	1,601	20,020
Maywood	13,873	3,609	775	8,600
Mission Hills - Panorama City - North Hills	97,761	15,252	6,786	35,325
Northeast Los Angeles	125,408	19,662	10,873	55,685
Paramount	25,297	5,599	1,119	12,968
Pomona	78,290	14,267	5,033	38,292
Rosemead	35,683	7,163	1,680	14,191
South El Monte	10,757	2,944	458	5,018
South Gate	53,989	10,916	3,607	31,209
South Los Angeles	159,412	35,295	20,605	79,461
Southeast Los Angeles	144,884	38,847	14,762	92,485
Sun Valley - La Tuna Canyon	45,494	7,609	2,033	17,748
Vernon	419	91	37	234
Walnut Park	9,194	2,170	553	5,597
West Adams - Baldwin Hills - Leimert	90,881	14,251	12,524	38,957
West Athens	2,778	474	300	1,557
West Rancho Dominguez	6,017	1,510	515	4,347
Westlake	69,068	13,115	12,365	28,182
Westmont	9,841	1,534	1,321	5,565
Willowbrook	8,978	2,346	562	5,561
Wilmington - Harbor City	33,421	5,688	2,058	17,115
Orange County				
Midway City	4,002	525	202	1,340
Santa Ana	186,411	45,618	6,646	94,490
Stanton	19,442	2,701	1,182	8,036
Riverside County				
Coachella	41,945	13,816	2,770	28,311
Garnet	3,904	391	205	1,606
Good Hope	4,250	724	182	2,326
Highgrove	1,641	223	124	934
Home Gardens	4,576	811	185	2,712

TABLE 99 Addendum: Detailed Breakdown of Environmental Justice Variables for Communities of Concern (2040) Continued

	Foreign Born	Non-English Speaking	Households Without Car	Below High School
Indio Hills	333	98	23	203
Mead Valley	7,982	1,322	330	4,453
Mecca	4,159	1,372	147	2,309
Mesa Verde	3	1	0	1
North Shore	899	317	19	520
Oasis	3,769	1,413	125	2,185
Perris	40,010	6,795	2,809	23,336
Ripley	13	3	1	7
Thermal	2,695	901	137	1,561
Vista Santa Rosa	2,171	634	95	1,181
San Bernardino County				
Adelanto	19,544	5,110	1,034	11,484
Baker	123	23	17	82
Bloomington	7,618	1,371	202	4,207
Colton	20,368	2,925	1,489	10,038
Montclair	15,765	1,923	632	7,150
Muscoy	3,522	531	62	1,935
Rialto	33,500	5,093	1,906	17,937
San Bernardino	68,462	10,426	7,151	41,512
Ventura County				
Santa Paula	11,640	3,546	816	6,636
Saticoy	360	121	35	285

NOTES

1 U.S. Census Bureau; https://www.census.gov/geo/reference/Urban-Rural.html

2 Climate Change Impacts in the United States: The Third National Climate Assessment. Washington DC: U.S. Global Change Research Program, 2014.

3 California Emergency Management Agency, California Natural Resources Agency. California Adaptation Planning Guide. 2012.

4 Wolff M, Comerford C. San Francisco Climate and Health Profile. San Francisco: San Francisco Department of Public Health,; 2014.

5 Pinto E, Penney J, Ligeti E, Gower S, Mee C. Climate Change Adaptation and Health Equity: Background Report. In: Health TP, editor. Toronto, Canada 2011.

6 California Emergency Management Agency, California Natural Resources Agency. California Adaptation Planning Guide. 2012; and, Cooley H, Moore E, Heberger M, Allen L. Social Vulnerability to Cimate Change in California: A White Paper from the California Energy Commission's California Climate Change Center. 2012.

7 Kaswan A. Domestic Climate Change Adaptation and Equity. Environmental Law Reporter. 2012;42.

8 Morello-Frosch R, Pastor M, Sadd J, Shonkoff SB. The Climate Gap: Inequalities in How Climate Change Hurts Americans & How to Close the Gap. 2009.

9 Kaswan A. Domestic Climate Change Adaptation and Equity. Environmental Law Reporter. 2012;42.

10 The EJ Mitigation Toolbox draws from, among other sources, mitigation measures included in the Draft 2016 RTP/SCS Program Environmental Impact Report (PEIR), particularly for air quality and noise impacts. As captured here, environmental justice mitigation is geared toward reducing impacts for environmental justice communities as defined in this appendix, whereas PEIR measures are more broadly geared to sensitive receptors as defined in the PEIR. Mitigation activities cited here (e.g., performing corridor-specific analysis) are consistent between this toolbox and the Final PEIR Appendix X.

11 Please see Chapter XX, Transportation Investments for more information regarding a heavy-duty truck demonstration project in partnership with SCAQMD.

12 For more information, see http://www.dieselnet.com/standards/us/marine.php and http://www.dieselnet.com/standards/us/loco.php. Department of Transportation, Federal Highway Administration, Environmental Justice Emerging Trends and Best Practices Guidebook, Document Number: FHWA-HEP-11-024. August 2011.

13 National Cooperative Highway Research Program Report 686. Road Pricing: Public Perceptions and Program Development (2011).

14 Ibid.

15 Ibid.

16 Please see http://www.hcd.ca.gov/hpd/inclusionary.pdf

17 Please see http://www.policylink.org/equity-tools/equitable-development-toolkit/about-toolkit

18 Please see http://www.realtor.org/field-guides/field-guide-to-inclusionary-zoning

19 Please see http://www.forworkingfamilies.org/resources/policy-tools-community-benefits-agreements-and-policies

20 Ibid.

21 Please see http://laane.org/downloads/CBAStudy.pdf

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APPENDIX

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