

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

2008

**REGIONAL TRANSPORTATION PLAN**



*Making the Connections*

***Environmental  
Justice Report***



# ENVIRONMENTAL JUSTICE

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*“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.”*

- Title VI of the Civil Rights Act of 1964

## Overview

### BACKGROUND

The U.S. Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” Additionally, “it will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”

The environmental justice movement stems from Title VI of the Civil Rights Act of 1964. Title VI of the Civil Rights Act of 1964 provides one very significant means by which the public can seek greater accountability from transportation agencies. 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.<sup>1</sup>

<sup>1</sup> CommunityLink 21, Regional Transportation Plan: Equity and Accessibility Performance Indicators <http://www.fhwa.dot.gov/environment/ejustice/case/case4.htm>

Under federal policy, all federal agencies must make environmental justice part of their mission and adhere to three fundamental environmental justice principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Environmental justice is an integral part of the planning process, which must be considered in all phases of planning. As the designated Metropolitan Planning Organization (MPO) for six counties, the Southern California Association of Governments (SCAG) is mandated by the federal government to prepare a Regional Transportation Plan (RTP) every four years to address the region’s transportation needs. The previous RTP was adopted in April 2004. The RTP 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.

## SCAG’S Environmental Justice Policy

As a government agency that receives federal funding, SCAG seeks to achieve, at a minimum, compliance with federal environmental justice principles, policies, and regulations described above. As such, SCAG’s goal is to ensure that its programs and plans do not create disproportionate adverse impacts for low-income and minority people in the region. The following outlines SCAG’s environmental justice compliance policy.<sup>2</sup>

- SCAG is committed to being a leader among the nation’s metropolitan planning organizations in its analysis of the environmental, health, so-

<sup>2</sup> [http://scag.ca.gov/environment/pdfs/ej\\_title6.pdf](http://scag.ca.gov/environment/pdfs/ej_title6.pdf)

cial, and economic impacts of its programs on minority and low-income populations.

- SCAG will provide early and meaningful public access to decision making processes to all interested parties, including minority and low-income populations.
- SCAG will seek out and consider the input of traditionally underrepresented groups, such as minority and low-income populations, in the transportation planning process.
- When disputes arise, it is SCAG's adopted policy to make the fullest possible use of alternative dispute resolution (ADR) techniques, including mediation and consensus building.
- When disproportionately high and adverse impacts on minority or low-income populations are identified, SCAG will take steps to propose mitigation measures or consider alternative approaches.
- SCAG will continue to evaluate and respond as needed to environmental justice issues that arise during the implementation of regional plans.

Transportation investment decisions are largely a product of long-range planning. With billions of dollars at stake, local, regional, and state transportation agencies develop long-range plans to set spending priorities. Ensuring that the benefits of these investments are distributed equitably is an important element of environmental justice. This section discusses SCAG's environmental justice efforts in the long-range transportation planning process.

## Regulatory Requirements

In the 1990's, 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 included President Clinton's Executive Order 12898 (1994) and subsequent U.S. Department of Transportation (DOT) and Federal Highway Administration orders (1997 and 1998, respectively), along with a 1999 DOT guidance memorandum. These are further described below.

As previously described, Title VI of the Civil Rights Act of 1964 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." In short, Title VI makes MPOs accountable for their planning and investment decisions. Title VI became the legal underpinning for the environmental justice movement.

On February 11, 1994, President Clinton signed Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations in response to growing concern over environmental effects on minority and low-income communities, including human health, social, and economic effects. Executive Order 12898 requires each Federal agency, to the greatest extent allowed by law, to administer and implement its programs, policies, and activities that affect human health or the environment in order to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.<sup>3</sup>

In April 1997, DOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5610.2) was issued. Reaffirming the principles set forth by Title VI and Executive Order 12898, this generally described the process for incorporating social, economic, environmental, public health and welfare, and public involvement into all DOT existing programs, policies, and activities.<sup>4</sup>

In December 1998, the Federal Highway Administration (FHWA) issued FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 6640.23). This requires the FHWA to implement the principles of the DOT Order 5610.2 and Executive Order 12898 by incorporating environmental justice principles in all FHWA programs, policies and activities.<sup>5</sup>

<sup>3</sup> <http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm>

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

Executive Order 12898 and the DOT Orders were further clarified in a Memorandum jointly issued by FHWA and the Federal Transit Administration (FTA) on October 7, 1999. The Memorandum, Implementing Title VI Requirements in Metropolitan and Statewide Planning, emphasized the importance of incorporating environmental justice principles during transportation project development as well as in the processes and products of transportation planning. Compliance with Title VI is normally evaluated by the federal Department of Transportation during triennial certification reviews of metropolitan planning organizations such as SCAG. The Memorandum provides clarification for field offices on how to ensure that environmental justice is considered during current and future planning certification reviews. Additionally, this included a set of questions to be used by FTA regional and FHWA division administrators during certification reviews. The questions make clear that DOT expects MPOs to analyze the equity of service and the distribution of the associated impacts on minority and low-income groups. In addition, MPOs are expected to reach out to traditionally underrepresented groups, even to the extent of providing financial assistance, to assure that they can participate meaningfully in the transportation planning process.<sup>6</sup>

## Snapshot of the Region

SCAG functions as a Council of Governments (COG) and has evolved as the largest of nearly 700 COGs in the United States. SCAG also functions as the MPO for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial. As such, it is governed by a Regional Council consisting of 76 local elected officials from around the six-county region. As the MPO, SCAG is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.

The SCAG region is uniquely large, with geographically dispersed commercial and residential centers. The region encompasses a population exceeding 18 million persons in an area of more than 38,000 square miles. The region

includes heavily urban and entirely rural areas, as well as terrain features that make air quality goals difficult to achieve. Demographically, it is one of the most diverse regions in the country, already becoming the first to experience a white minority, and encompassing the extremes in household income. Furthermore, it is projected to continue to experience dramatic population growth (see Table 1: Projected Demographic Changes in the SCAG Region, 2008-2035).

Since 2000, population in the region has increased by almost 1.5 million or about 300,000 per year, matching its highest level of average annual increase during the 1980s. During the year 2005, the SCAG region added 222,000 residents, close to 9 percent of the total growth in the nation. By the end of 2005, the total population in the region reached over 18.2 million, representing 6.1 percent of the population in the nation and close to half in the state.<sup>7</sup> According to the Baseline forecast, the region will add 5.9 million people to reach 24 million people by 2035. Supporting this population in 2035 will be 2.5 million new jobs for a total of 10.3 million. This level of population growth is expected to yield 2 million additional households in the region at an average of three persons per household.

<sup>6</sup> [http://scag.ca.gov/environment/pdfs/ej\\_title6.pdf](http://scag.ca.gov/environment/pdfs/ej_title6.pdf)

<sup>7</sup> [http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06\\_Population.pdf](http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06_Population.pdf)

**TABLE 1 PROJECTED DEMOGRAPHIC CHANGES IN THE SCAG REGION, 2008-2035**

Region	2008	2035
Population	18,909,603	24,056,246
Households	5,926,983	7,710,312
White	35.2%	23.4%
Non-white	64.8%	76.6%
African American	7.0%	6.1%
American Indian	0.4%	0.5%
Asian/ Pac. Islander	10.6%	11.4%
Other	2.8%	3.2%
Hispanic	44.0%	55.4%
Over 65	10.2%	15.9%
Disabled	8.5%	9.4%
Below Poverty*	13.7%	14.5%
Below 1.5 x Poverty	8.6%	9.1%
Below 2 x Poverty	8.3%	8.5%
Income Quintile 1	20.0%	20.0%
Income Quintile 2	20.0%	20.0%
Income Quintile 3	20.0%	20.0%
Income Quintile 4	20.0%	20.0%
Income Quintile 5	20.0%	20.0%

One important demographic dynamic at work in Southern California includes the continuing change in the ethnic/racial composition. The share of the Hispanic population reached 44 percent in 2005, about a 4 percent increase from 2000 and a dramatic increase from only 10 percent in 1960. The share of the Asian/Pacific Islander population increased from 2 percent in 1960 to over 11 percent in 2005. Since 1960, the share of the non-Hispanic White population declined from about 80 percent to 39 percent in 2000 and 36 percent in 2005. The share of African-American population in the region was just below

7 percent in 2005. Since 2000, the vast majority (80 percent) of the growth in the region were Hispanics.<sup>8</sup>

Between 2000 and 2005, the SCAG region performed better every year in job growth rates relative to the rest of the state and the nation. In 2005, the region achieved a slightly higher rate of job growth (1.7 percent) than the rest of the state (1.4 percent) and the nation (1.5 percent).<sup>9</sup>

In 2005, the region achieved its lowest unemployment rate (5 percent) since 1988, and a slightly lower unemployment rate than the national average, the first time since 1990. From 2004 to 2005, the unemployment rate in the region dropped from 6 percent to 5 percent. During the same period, the unemployment rate declined from 5.5 to 5.1 percent nationally, while it dropped from 6.2 to 5.4 percent in the state.<sup>10</sup>

In the SCAG region, 14 percent of residents lived in poverty in 2005, a slight decrease from 2004 (14.3 percent) though continuing to be higher than that of the state (13.3 percent) and the nation (12.6 percent). In addition, about 20 percent of children under 18 were below the poverty line in 2005, little changed from 2000. The poverty rate was highest for female-headed households (25 percent) and lowest for persons aged 65 and over (8.9 percent). In 2005, the SCAG region continued to have the highest poverty rate (14 percent) for all people among the nine largest metropolitan regions in the nation followed by the Dallas region (13.3 percent), while the Washington D.C. region achieved the lowest poverty rate of only 7.9 percent.<sup>11</sup>

## Public Involvement in Transportation Planning

The awareness and involvement of interested persons in governmental processes are critical to successful regional transportation planning and programming. When the public is engaged in the process, their feedback helps as

<sup>8</sup> Ibid.

<sup>9</sup> [http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06\\_Economy.pdf](http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06_Economy.pdf)

<sup>10</sup> Ibid.

<sup>11</sup> [http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06\\_Economy.pdf](http://scag.ca.gov/publications/pdf/2006/SOTR06/SOTR06_Economy.pdf)



sure projects address community needs. Likewise, the public gains a better understanding of the tradeoffs and constraints associated with transportation planning. To ensure compliance with federal and state requirements, SCAG is required to implement a public involvement process to provide complete information, timely public notice and full public access to key decisions and to support early and continuing public involvement in developing its regional plans.

As a metropolitan planning organization, SCAG is responsible for preparing and utilizing a Plan which is developed in consultation with all interested parties and provides reasonable opportunities for interested parties to comment on the content of SCAG's Regional Transportation Plan (RTP), pursuant to the "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users" (SAFETEA-LU), Pub. L. No. 109-59, Title VI, Section 6001(a), 119 Stat. 1839 (Aug. 10, 2005).

Public outreach efforts are intended to assure that all members of the public have an opportunity to participate meaningfully in the planning process. An in-depth description of SCAG's RTP public outreach efforts is included in a previous section, Overview of the Regional Transportation Plan. This is summarized below.

- Compliance Procedure for Environmental Justice in the Transportation Planning Process

In October 2000, SCAG released the Compliance Procedure for Environmental Justice in the Transportation Planning Process, which provided a detailed description of SCAG's public outreach activities. Since its publication, SCAG staff has utilized this guidance document to ensure that it 1) includes traditionally unrepresented groups early and throughout the planning process; 2) carefully examines performance measures to determine any inequities of the RTP on any group; 3) and follows the self-evaluation procedure for public outreach and environmental justice analysis programs.

- Create departmentally Integrated Core Outreach Team

SCAG holds regular coordination meetings with the principal staff in all planning areas and consultants associated with each of the various outreach efforts.

- Update Existing and Create New Presentation Materials

SCAG provides clear, consistent and concise primary messages for media and public involvement and interaction using a variety of formats: powerpoints, fact sheets, surveys, brochures, maps, white papers, newsletter (eVision).

- Enhance Website Capabilities

SCAG utilizes its website to provide information on the RTP. SCAG works to ensure that the information available is timely, easy-to-understand and accessible and that the website is compliant with the 1990 Americans with Disabilities Act. SCAG's RTP and the environmental justice program have individual websites dedicated to each.<sup>12</sup>

- Coordinate Outreach Efforts with other Stakeholder Organizations

Together with subregional partners and other stakeholder organizations, SCAG notifies interested parties through traditional meeting announcements, newspapers, public service announcements, press releases, special mailers, publications and agendas of committees, meetings, workshops, briefings, web site postings, email communications and other opportunities to participate, as appropriate.

- Create an Outreach Schedule

SCAG proactively contacts groups to schedule speakers from the pool of available speakers, as appropriate, to meet the interests of the particular group. Additionally, SCAG conducts presentations, briefings, workshops, and hearings to diverse groups and organizations throughout the region.

- Conduct Public Workshops related to the RTP

<sup>12</sup> RTP Website: <http://scag.ca.gov/rtp2008/>  
EJ Website: <http://scag.ca.gov/environment/ej.htm>

Announcement of public workshops are transmitted via printed materials, on SCAG's website, and in local newspapers. Workshops are held throughout the planning process and target minority and low-income communities throughout the region. Follow-up workshops are held with groups that want to stay involved throughout the planning cycle. Translation services are provided at some of the public workshops.

- Reach Out to Traditionally Underrepresented and/or Underserved Audiences

SCAG works with its Member Relations staff and Subregional Coordinators to aid in identifying underrepresented segments of the region. SCAG coordinates with individuals, institutions or organizations to reach out to members in the affected minority and/or low income communities.

- Consider and Incorporate Comments Received into the Deliberations Regarding Proposed Plans and Programs

This involves review and consideration of all public comments in the regional transportation planning process. Additionally, SCAG will record, track and maintain a log of comments and SCAG's response to the comments within the Communication Management Software System (CMS), SCAG's contact database system.

- Evaluate Public Participation Activities

SCAG evaluates public participation efforts so that necessary modifications can be made. This enhances the outreach program to better serve the underrepresented segments of the region.

As part of the environmental justice outreach effort, SCAG compiled a list of key stakeholders that will be used for environmental justice outreach efforts. This list is comprised of persons and organizations involved with the 2004 RTP as well as additional stakeholders, such as the South Coast Air Quality Management District's (SCAQMD) Environmental Justice Working Group. Key stakeholder groups included non-profit organizations, advocacy groups, American Indian tribes, neighborhood coalitions, environmental and public health organizations, industry, business owners, and other interested

parties. There are currently 150 members. SCAG actively solicits input on the stakeholder list.

On September 19, 2007, SCAG held the first Environmental Justice Workshop for the 2008 Regional Transportation Plan (RTP) at the main office in downtown Los Angeles, with videoconferencing available at the Inland Empire SCAG office. Spanish translation was made available for participants. Workshop information was disseminated via electronic and paper notices mailed to the stakeholder list and follow up phone calls to organizations lacking email addresses. Additionally, SCAG's website was utilized to provide information to the public.

The intent of the Workshop was threefold: 1) present general information on SCAG's Environmental Justice Program; 2) review the previous environmental justice analysis in the 2004 RTP; and 3) obtain input from the public on the environmental justice analysis for the 2008 RTP. There were approximately 17 participants in attendance representing various stakeholder groups, which included non-profit organizations, advocacy groups, neighborhood coalitions, environmental and public health organizations, industry, business owners, and other interested parties. The public comments received were recorded and have been considered by SCAG in the development of the 2008 RTP. Input was also received on the stakeholder list. These organizations and/or persons were added to the existing outreach list.

SCAG is committed to building partnerships with key stakeholder groups in order to ensure that underrepresented communities are fully engaged throughout the planning process. Outreach activities were conducted throughout the region and presentations were made to various community-based organizations. As part of the ongoing outreach efforts, a number of workshops were scheduled after the release of the Draft 2008 RTP. Below is a sample of these workshops.

- January 15, 2008: RTP presentation to the Port of Los Angeles Port Community Advisory Committee (PCAC) in Wilmington.



- February 12, 2008: RTP presentation to the Latino Urban Forum at the Los Angeles County Metropolitan Transportation Authority office in Los Angeles.
- February 23, 2008: RTP presentation to the NAACP in the city of Lake Elsinore.
- March 20, 2008: RTP presentation to the Greater Riverside Hispanic Chamber of Commerce in the City of Riverside.

## Methodology

A central component of long-range plan development is measuring how well the plan is able to achieve the goals of a community. As such, the goal of the 2008 RTP environmental justice analysis 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 and not a disproportionate share of burdens.<sup>13</sup>

### IDENTIFYING DEMOGRAPHIC GROUPS

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. The definitions are provided below.

### ETHNICITY/RACE

This phase of the analysis attempts to identify environmental impacts of the RTP that have the potential to affect different ethnic/racial groups. An environmental justice analysis must begin with demographic information, specifically, information on whether minority and low-income groups are present in the area affected by an agency plan. SCAG bases its analyses on the latest

<sup>13</sup> Caltrans. Desktop Guide: Environmental Justice in Transportation Planning Investments. January 2003.

census data for ethnic/racial groups in the SCAG region, by census tract and by transportation analysis zone (TAZ).

Executive Order 12898 and the 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 self-identification of individuals in the U.S. Census<sup>14</sup>:

- Black - a person having origins in any of the black racial groups of Africa.
- Hispanic - a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- Asian - a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent.
- American Indian and Alaskan Native - a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition.
- Native Hawaiian or Other Pacific Islander - a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

The population in the SCAG region identified as minority comprises over 70 percent of the population. The predominant minority groups are Hispanics and Asian/Pacific Islanders, which combine to account for 66 percent of the total minority population within the SCAG region.

### POVERTY LEVEL

Poverty level is a federally established income guideline used to define persons who are economically disadvantaged, as defined by the U.S. Department of Health & Human Services guidelines.<sup>15</sup> The poverty level applicable to the

<sup>14</sup> <http://www.fhwa.dot.gov/environment/ej2000.htm>

<sup>15</sup> White House Council on Environmental Quality (CEQ). Environmental Justice Guidance Under the National Environmental Policy Act, December 1997.

SCAG region is chosen on the basis of regional average household size for the census year. For example, for a regional mean of 2.98 persons - rounded to 3 - per household, the threshold would consist of the sum of the value for the first person plus two additional people. The household counts in each income range are then used to determine the number and percentage of households in each census tract below the poverty level. In 2007, a family of three earning less than \$17,170 was classified as living in poverty.<sup>16</sup>

## INCOME

In addition to complying with federal guidance, SCAG also conducts income equity analyses based on five income quintiles. A quintile, by definition, is a category into which 20 percent of the ranked population falls. For each new analysis, SCAG defines regional income quintiles 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. In addition, the demographics of any area smaller than the region can be analyzed in terms of the percentage of its population in each of the income quintiles. For example, income quintiles are fifths of the region's households, Quintile 1 represents the lowest fifth of households in terms of annual income and Quintile 5 the highest fifth of households.

**TABLE 2 DEMOGRAPHIC CATEGORIES**

Ethnic/Racial/Other Categories (persons)	Income Categories (households)
White (Non-Hispanic)	Below Poverty Level
African-American	100% - 150% of Poverty Level
American Indian	150% - 200% of Poverty Level
Asian/Pacific Islander	Income Quintile 1 (lowest)
Hispanic (Latino)	Income Quintile 2
Other	Income Quintile 3
Disabled/Mobility Limited	Income Quintile 4
Age 65 and Above	Income Quintile 5

<sup>16</sup> <http://aspe.hhs.gov/poverty/07poverty.shtml>

**TABLE 3 INCOME DISTRIBUTION**

Income Quintiles	Income Range
Income Quintile 1 (lowest)	\$0 to \$19,360
Income Quintile 2	\$19,361 to \$36,340
Income Quintile 3	\$36,341 to \$57,323
Income Quintile 4	\$57,324 to \$91,402
Income Quintile 5	\$91,403 and higher

Source: U.S. Census Bureau (2000)

## DATA SOURCES

### U.S. CENSUS

Data availability is critical in conducting an environmental justice analysis. Limited datasets or lack, thereof, can hinder an informed analysis of specific issues. Both “short form” information (Questions asked of all Americans, including age, race, and ethnicity) and “long form” data (Questions sent to a sample of one in six households, which include additional information, such as income, employment status, education level, place of work, commuting travel mode and trip length, disability, language, and housing conditions) were utilized.<sup>17</sup>

Data sources used in this evaluation included the 2000 Census which provided detailed and accurate information at local geographic levels. For the purposes of this study, census data was analyzed using TAZ. A TAZ is an area delineated by state and/or local transportation officials for tabulating traffic-related data, especially journey-to-work and place-of-work statistics. TAZs usually consist of one or more census blocks, block groups, or census tracts. TAZ layers are not available for the entire nation, but are available for most major urban areas. The 2000 Census is the first to report data at the TAZ level. To analyze

<sup>17</sup> Caltrans. Desktop Guide: Environmental Justice in Transportation Planning Investments. January 2003.

the distribution of regional transportation plan benefits, data at the TAZ-level is generally considered adequate.<sup>18</sup>

## **GEOGRAPHIC INFORMATION SYSTEMS**

Geographic Information Systems (GIS) tools are often the most useful for evaluating and communicating the information above. A standard desktop computer with GIS software is capable of extensive environmental justice evaluation using 2000 Census data. For this analysis, SCAG utilized a number of GIS datasets, such as demographic distribution, air emissions, aviation and highway impact areas, and parks.

## **AMERICAN HOUSING SURVEY**

Every year, the American Housing Survey collects detailed data on housing stock, which includes race, income, household size, and work trip information. The data is gathered for the same 55,000 housing units nation-wide. In addition to this broad national sample, the survey is conducted for 47 metropolitan areas every 4 years, including the following seven metropolitan areas in California: Anaheim-Santa Ana, Los Angeles-Long Beach, Oakland, Sacramento, San Diego, San Francisco, and San Jose. In these areas, the American Housing Survey can be helpful to update older census data.<sup>19</sup>

## **NATIONAL HOUSEHOLD TRAVEL SURVEY**

Formerly the National Personal Transportation Survey (NHTS), the National Household Travel Survey data source is useful for non-work transportation trips, and detailed information about travel modes. NHTS is a U.S. Department of Transportation (DOT) effort sponsored by the Bureau of Transportation Statistics (BTS) and the Federal Highway Administration (FHWA) to collect data on both long-distance and local travel by the American public. The joint survey gathers trip-related data such as mode of transportation, duration,

distance and purpose of trip. It also gathers demographic, geographic, and economic data for analysis purposes. The most recent survey was prepared in 2001.<sup>20</sup>

## **The Analysis**

### **MOBILITY VS. ACCESSIBILITY**

The environmental justice analysis for the 2008 RTP aims at improving and refining the analysis conducted for the 2004 RTP. The role of the transportation system is to enable people to reach their desired destinations in the most convenient and efficient manner. As such, a basic goal of the 2008 RTP is to “maximize mobility and accessibility for all people and goods in the region.” Mobility is the ability to travel and the potential for movement. It reflects the spatial structure of the transportation network and the level and quality of its service. Mobility is determined by such characteristics as road capacity and designed speed and, in the case of automobile mobility, by how many other people are using the roads. In contrast, accessibility measures how well the transportation system provides people access to opportunities.

Similar to the methodology applied to the 2004 RTP environmental justice analysis, accessibility was used as a performance measure instead of mobility. In general, accessibility has two critical advantages over mobility. First, it allows for comparison of alternative land use and transportation policies and focuses upon the level-of-service of the metropolitan system as a whole, rather than just the transportation system. Policies designed to increase the mixing of land uses can be compared to policies designed to increase the capacity of an intersection, for example, by answering the question: what effect does each have on accessibility? Second, accessibility as a planning goal provides clear direction for policy makers. Increased mobility and higher levels of accessibility are positive outcomes.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> U.S. Department of Transportation. Available at: [http://www.bts.gov/programs/national\\_household\\_travel\\_survey/](http://www.bts.gov/programs/national_household_travel_survey/)

## THE 2008 RTP PLAN VERSUS BASELINE

The comparison of the Plan versus Baseline is the primary focus of the environmental justice analysis for the 2008 Regional Transportation Plan. The basic concept is to compare the performance of the Plan (2035) to the Baseline scenario for 2035. For the purposes of this analysis, the Plan represents the selected strategy to guide the Region's transportation planning over the next few decades and Baseline is defined as the set of all projects and investments currently underway or for which funds are already committed. Baseline represents "business as usual" and assumes current land use trends and the completion of projects currently under construction or with funding available for construction over the next few years. The data for the analysis is based on the SCAG regional travel demand model results.

## PERFORMANCE MEASURES

A central component of long-range plan development is measuring how well the plan is able to achieve the goals of a community. In the development of the RTP, SCAG utilized a number of performance measures designed to assess the overall equity. Performance Measures provide a way to quantitatively assess the impact of the RTP.

- Accessibility (Employment Services and Parks)
- Distribution of Plan Expenditures (Investments)
- Taxes Paid
- Auto Travel Time Savings
- Auto Travel Distance Reductions
- Environmental Impact Analyses (Air Emissions and Noise)

These performance measures were intended to evaluate how low-income and minority communities fared under RTP investments. The performance measures and the results of the analysis are described in detail below.

## ACCESSIBILITY TO EMPLOYMENT SERVICES

Accessibility 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 the activities at the 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 accessibility. Destination choice is equally crucial: more destinations and the more varied the destinations, the higher the level of accessibility.<sup>21</sup>

Employment accessibility evaluates how well the transportation system is providing access to jobs for underrepresented populations. In this analysis, employment accessibility is defined as the percentage of total employment opportunities that can be reached within 30 minutes during the PM peak period. SCAG has determined that access to employment is a reasonable proxy for access to all opportunities, since work trips make up a large percentage of total trips during commute periods. Socioeconomic and transportation data are all held at the TAZ level. Socioeconomic data used the income quintiles previously described. These estimates are disaggregated to the TAZ level. For the purposes of this analysis, job accessibility is measured by three modes: 1) automobile; 2) local bus/rail via automobile; and 3) local bus/rail via walking.

<sup>21</sup> CommunityLink 21, Regional Transportation Plan: Equity and Accessibility Performance Indicators <http://www.fhwa.dot.gov/environment/ejustice/case/case4.htm>

## Results

**FIGURE 1 COMPARISON OF EMPLOYMENT ACCESSIBILITY IMPROVEMENTS BY TRAVEL MODE AND INCOME CATEGORY (PLAN VS. BASELINE, 2035)**

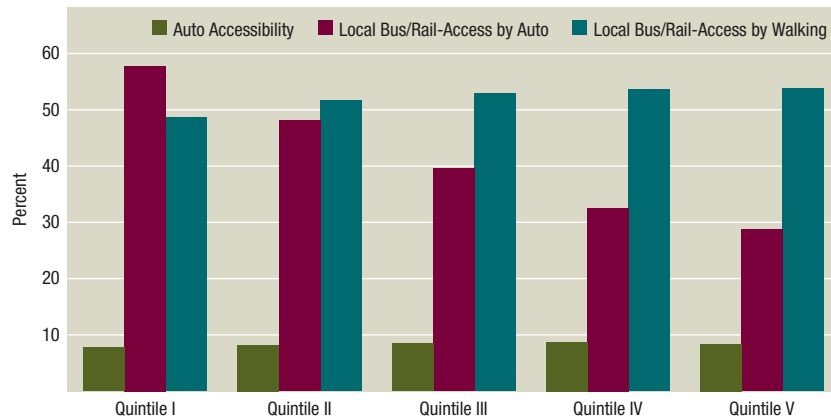


Figure 1: Comparison of Employment Accessibility Improvements by Travel Mode and Income Category shows the percentage improvement between the Plan versus Baseline. It is projected that low-income communities in the region will have higher improvement of access to employment via local bus and rail. This can be attributed to the number of system expansion projects proposed in the 2008 RTP, which includes a number of commuter/light/heavy rail improvements and bus rapid transit expansion projects. Additionally, improvements in accessibility via automobile are expected to be lower than improvements via transit for any quintile group. The results indicate that on a regional scale, no disproportionate impacts are anticipated between income groups as a result of the Plan.

## ACCESSIBILITY TO PARKS

Public parks serve all residents. Numerous national parks, state parks, and local parks are all found within the SCAG region. However, not all neighborhoods and people have equal access to these public resources (see Map

1: Distribution of Parks and Low-income Households). Some neighborhoods have more open space, some parks are better maintained, some are built so those with disabilities can enjoy them, and some parks are safer.<sup>22</sup> For the purposes of this analysis, three types of parks were considered: 1) local parks; 2) state parks; and 3) national parks. The acreage of each park type in all TAZs was identified.

Similar to the method in measuring job accessibility, park accessibility is defined as the percentage of park acreage reachable within a 30-minute off-peak travel time period via 1) automobile; 2) local bus/urban rail via automobile; and 3) local bus/urban rail via walking. Without a weekend regional transportation model system, the existing typical weekday model was utilized for the analysis. Because visits to parks are, by nature, leisure trips, off-peak travel time is used instead of peak travel time. For transit travel time, both the waiting time and the on board time are included.

Figure 2: Park Accessibility by Travel Mode and Income Category shows the access to parks in the Baseline scenario. Park accessibility by transit is much lower than that by automobile for all income groups. However, Quintiles IV and V will have moderately higher access to parks in the region via automobile.

Research has found a complete lack of public transportation services into National Parks<sup>23</sup>, but this also appears true for State Parks. There is almost no access to national parks and very limited access to state parks by transit across all income groups in the Baseline scenario (see Figure 3: National Park Accessibility by Travel Mode and Income Category and Figure 4: State Park Accessibility by Travel Mode and Income Category).

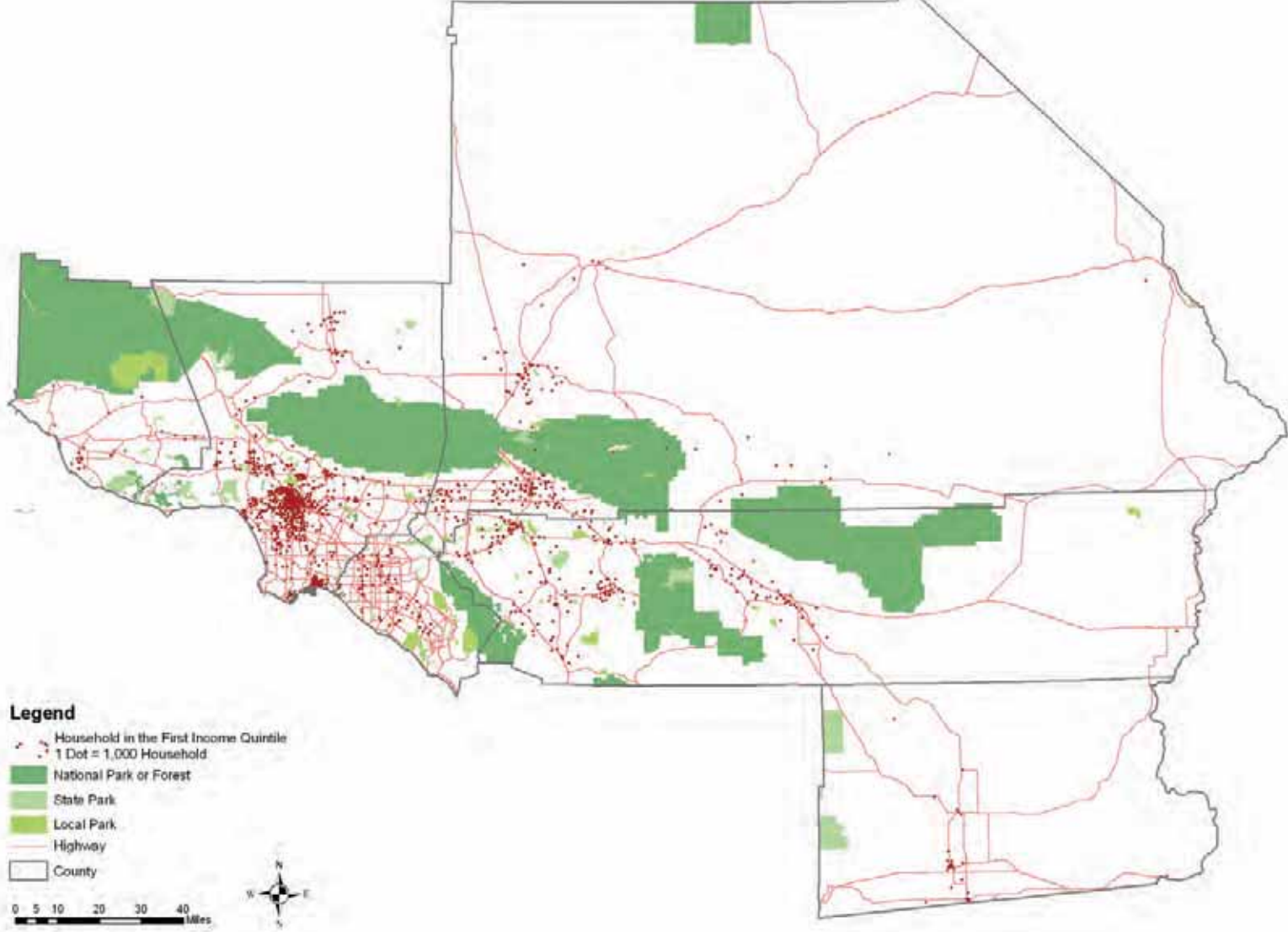
The analysis also concluded that accessibility to local parks is mostly via the automobile. Figure 5: Local Park Accessibility by Travel Mode and Income Category reveals that there is limited transit service that accommodates local

<sup>22</sup> Boston Parks Advocates Coalition. Green Paper for the Governor. Available at: <http://www.massaudubon.org/PDF/advocacy/2007/EJBos.pdf>

<sup>23</sup> Frescas, Ron, Chris Martin, and Christine Steenken. Public Transportation to Local National Forests. April 15, 2004.



MAP 1: DISTRIBUTION OF PARKS AND LOW-INCOME HOUSEHOLDS

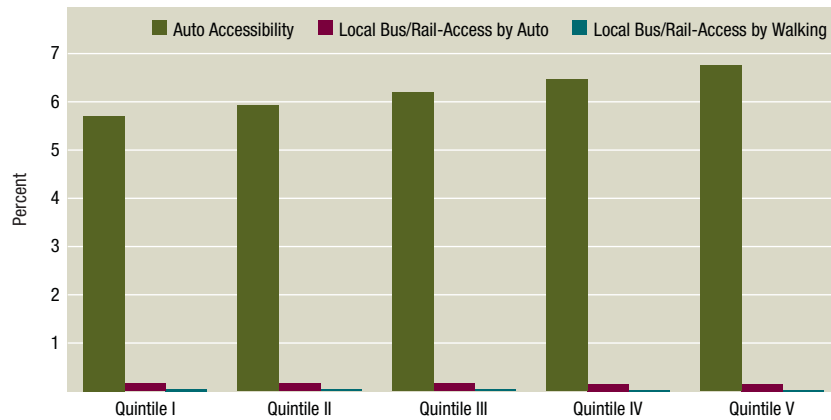


Source: Southern California Association of Governments, ESRI StreetMap USA, Teleatlas

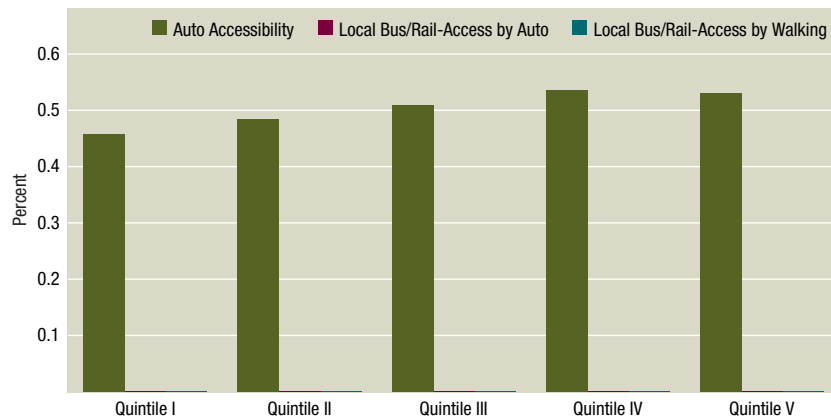


parcs and, region-wide, there is a marginal difference in accessibility between all income groups.

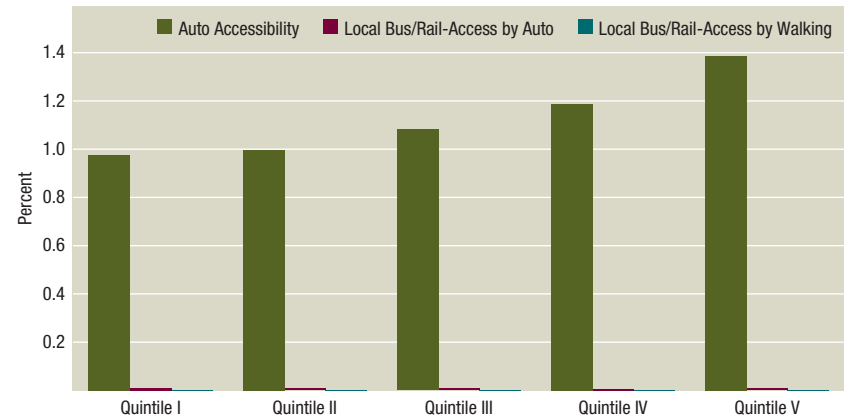
**FIGURE 2 PARK ACCESSIBILITY BY TRAVEL MODE AND INCOME CATEGORY (BASELINE 2035)**



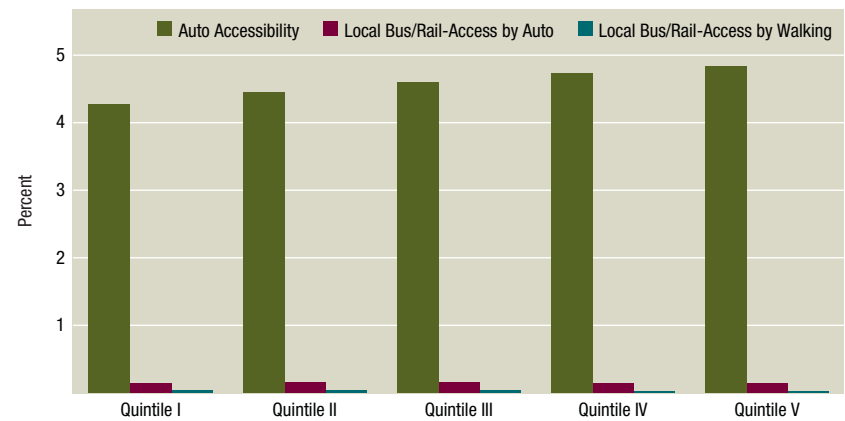
**FIGURE 3 NATIONAL PARK ACCESSIBILITY BY TRAVEL MODE AND INCOME CATEGORY (BASELINE 2035)**



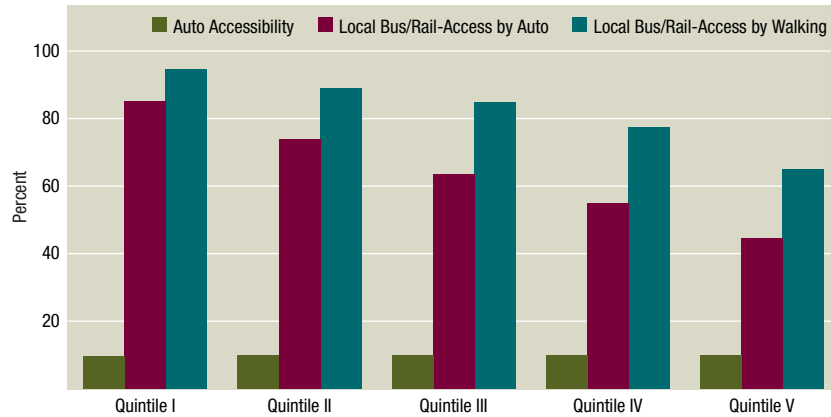
**FIGURE 4 STATE PARK ACCESSIBILITY BY TRAVEL MODE AND INCOME CATEGORY (BASELINE 2035)**



**FIGURE 5 LOCAL PARK ACCESSIBILITY BY TRAVEL MODE AND INCOME CATEGORY (BASELINE 2035)**



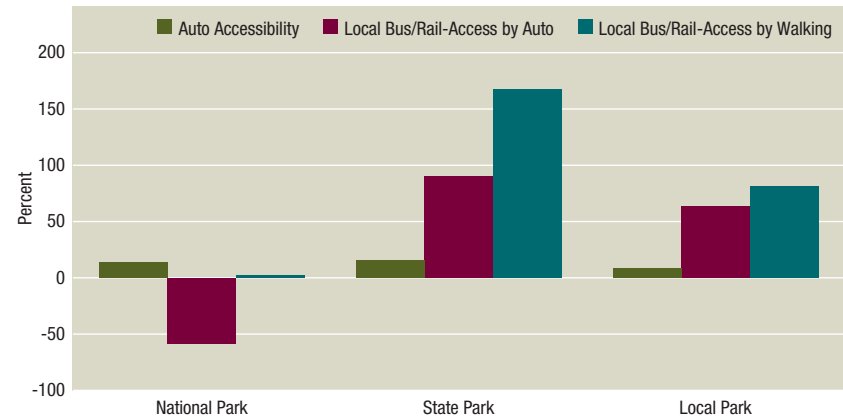
**FIGURE 6 COMPARISON OF PARK ACCESSIBILITY IMPROVEMENTS BY TRAVEL MODE AND INCOME CATEGORY (PLAN VS. BASELINE, 2035)**



As shown in Figure 6: Comparison of Park Accessibility Improvements by Travel Mode and Income Category, park accessibility for all income groups by three travel modes is expected to improve under the Plan scenario. Low-income and minority communities in the region are anticipated to have higher improvements to access to parks via transit. Accessibility to parks by auto will remain relatively constant for all income groups. Moreover, the improvement of park accessibility by automobile is expected to be lower than the improvement by transit.

Figure 7: Comparison of Park Accessibility Improvements by Park Type and Travel Mode displays the improvement of park accessibility by park type: national park, state park and local parks. The results reveal that there will be significant improvements of accessibility to both state and local parks by all three travel modes. This probably can be attributed to the proximity of these parks to urbanized areas, where population and transportation facilities will be concentrated. However, the accessibility to the national parks shows minor improvement, and even decreases for the mode of local bus/rail-access by auto.

**FIGURE 7 COMPARISON OF PARK ACCESSIBILITY IMPROVEMENTS BY PARK TYPE AND TRAVEL MODE (PLAN VS. BASELINE, 2035)**



Overall, the park accessibility analysis concluded that all income groups in the region will have greater park accessibility due to infrastructure investments proposed in the 2008 RTP. Although higher income groups have higher park accessibility in the Baseline scenario, low-income groups benefit more by transit. Accessibility to local and state parks shows significant improvement, but the accessibility to national parks has less or even negative improvement. A multi-agency effort must be undertaken in order to further address and remedy the issue of park accessibility.

### DISTRIBUTION OF PLAN EXPENDITURES (INVESTMENTS)

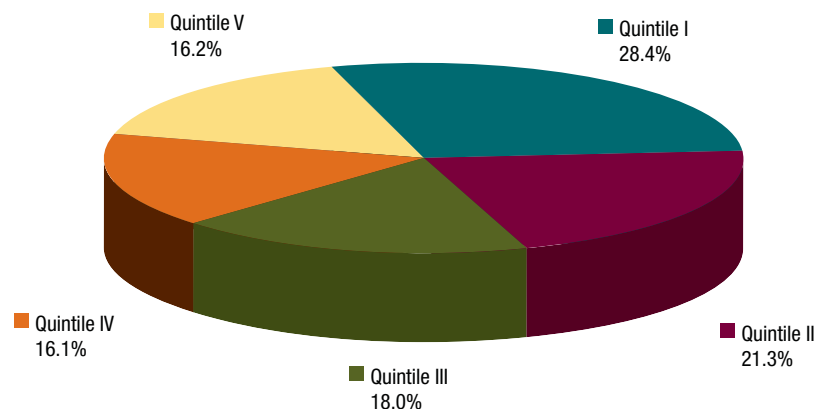
One of the most prominent environmental justice issues concerns the transportation investment strategy, which can impact the transportation choices of low income and minority communities. A disproportionate allocation of resources for various transit investments can indicate a pattern of discrimination. 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-order Consent Decree, charged that the MTA's investment and service

priorities disproportionately allocated resources to rail transit over bus ridership, an expenditure pattern considered discriminatory to low-income and minority communities. For example, the plaintiffs concluded that 94 percent of MTA's ridership were bus riders, but the agency customarily spent 70 percent of its budget on rail, which constituted 6 percent of its ridership. Other evidence was compiled about disparities in spending on security, subsidies, transit routes and service patterns, overcrowding, and reductions in peak hour bus fleets.<sup>24</sup>

As a regional MPO, SCAG aims to identify and address the Title VI of the Civil Rights Act and the environmental justice implications of its planning processes and investment decisions. As a performance measure, the allocation of transportation investments intends to evaluate whether the 2008 RTP investments are being allocated equitably. The 2008 RTP 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 RTP expenditures allocated to each category of household income. This was done by totaling expenditures on each type of mode (bus, HOV lanes, commuter/high speed rail, highways/arterials, and light/heavy rail). These expenditures were then allocated to income categories based on each income group's use of these modes.

## Results

**FIGURE 8 DISTRIBUTION OF PLAN EXPENDITURES BY INCOME CATEGORY**



SCAG analyzed the distribution of Plan expenditures based on mode usage information by income quintile. The analysis in the 2004 RTP showed that 57 percent of total public expenditures under the Plan would be on modes most commonly used by the lower three income quintiles, or the lowest 60 percent of the population, in terms of income. While the modes most commonly used by the lowest income group (quintile 1) received the lowest transportation investment in the 2004 RTP, this is reversed in the 2008 RTP analysis. As illustrated in Figure 8: Distribution of Plan Expenditures by Income Category, approximately 28 percent of Plan investments will be invested in modes predominantly used by the lowest quintile group, while 16 percent will be invested in modes used by the highest income category (Quintile V). A total of 68 percent of transportation investments would go to modes likeliest to be used by the lower three income households in the 2008 RTP.

<sup>24</sup> U.S. Department of Transportation. Community Link21, Regional Transportation Plan: Equity and Accessibility Performance Indicators. Available at: <http://www.fhwa.dot.gov/environment/ejustice/case/case4.htm>

**FIGURE 9 DISTRIBUTION OF PLAN EXPENDITURES BY ETHNIC/RACIAL CATEGORY**

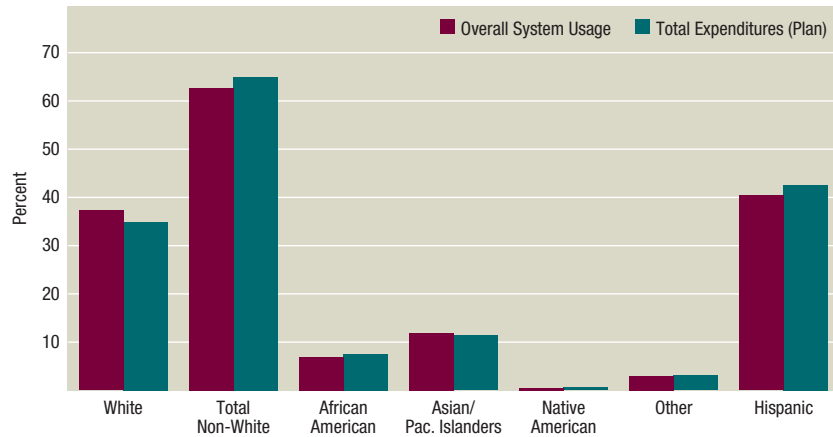


Figure 9: Distribution of Plan Expenditures by Ethnic/Racial Category evaluates the allocation of transportation investments by various ethnic/racial categories. The 2004 RTP showed slight discrepancies between Plan investments and system usage. For Hispanics, the share of Plan investments (42 percent) was greater than this group’s share of system usage (40 percent); for Whites, the share of Plan investments was 35 percent, while their system usage was 37 percent; for African-Americans, the share of Plan investments (8 percent) also exceeded their share of system usage (7 percent). The current analysis reveals that under the 2008 RTP, Plan investments will be distributed more equitably on the basis of system usage by ethnic/racial groups.

### TAXES PAID

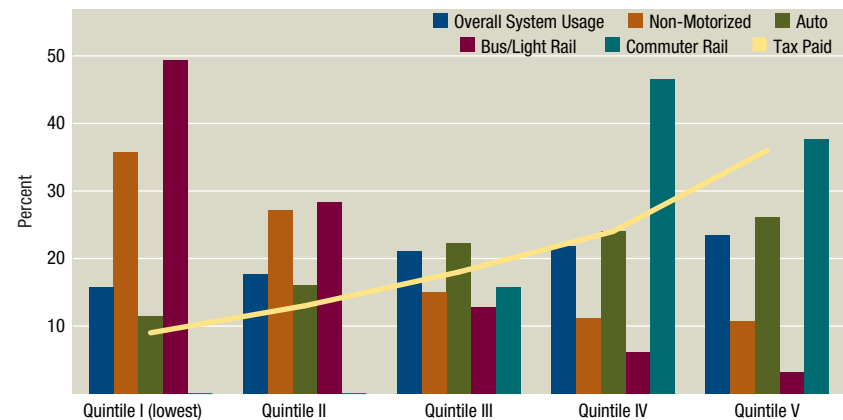
Different funding sources (i.e. income taxes, property taxes, sales, fuel, and etc.) can impose disproportionate burdens on lower income and minority groups. Sales and gasoline taxes, which are the primary sources of funding for the region’s transportation system, were evaluated for the purposes of this analysis. The amount of taxes paid was analyzed to demonstrate how tax bur-

dens fall on various demographic groups. The 2008 RTP environmental justice analysis examined the burden of taxation.

### Results

The 2008 RTP environmental justice analysis performed a comparative analysis of the amount of taxes (sales, gasoline, and income) paid by five income groups. Figure 10: Share of Taxes Paid by Income Category indicates that tax burdens are expected to fall heavily on higher-income groups. The mode of travel most prevalently used by higher income groups (Quintile IV and Quintile V) are commuter rail and the personal automobile, accounting for 60 percent of the taxes paid. The lower income groups (Quintile I and Quintile II), which uses bus and light rail as their primary modes of travel, are anticipated to pay 22 percent of taxes.

**FIGURE 10 SHARE OF TAXES PAID BY INCOME CATEGORY\***



\*The contents in this chart use both work and non-work trips; Rail capacity uses only work trip data

\*Share of Tax Paid includes sales and gasoline taxes.

## DISTRIBUTION OF TRAVEL TIME SAVINGS

### Methodology

Travel time savings was another performance measure SCAG analyzed to determine the share of benefits and burdens. For the 2008 RTP, transportation modeling results were used with data on mode usage by income groups to determine travel time savings. Results were calculated for trips made by automobile (the most common mode of travel) and for trips made by transit.

This analysis involved measuring the average travel time for both work trips and non-work trips. SCAG assessed the distribution of travel time savings that are expected to result from the Plan's implementation. Using the demographics of each TAZ, an estimate for the time savings for each income group was able to be measured. SCAG conducted this analysis for transit (i.e. bus and light rail) and automobile. These travel time savings were reported as a proportion of the total travel time savings for each mode.

### Results

**FIGURE 11 SHARE OF TRANSIT SYSTEM USAGE, TRANSIT TRAVEL TIME SAVINGS, AND TAXES PAID**

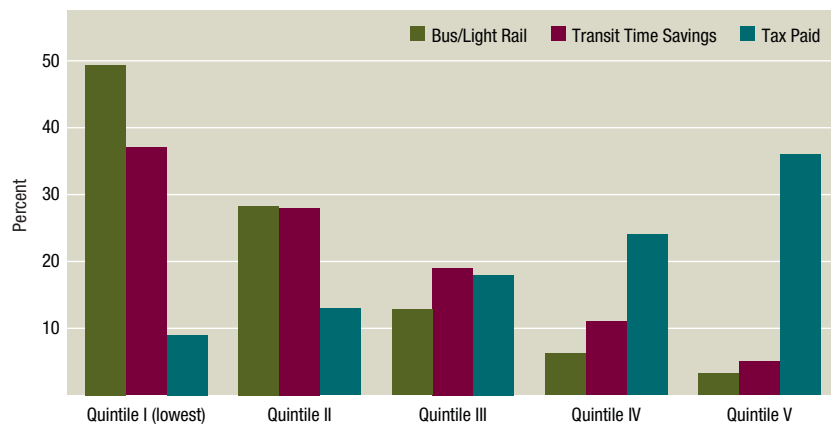
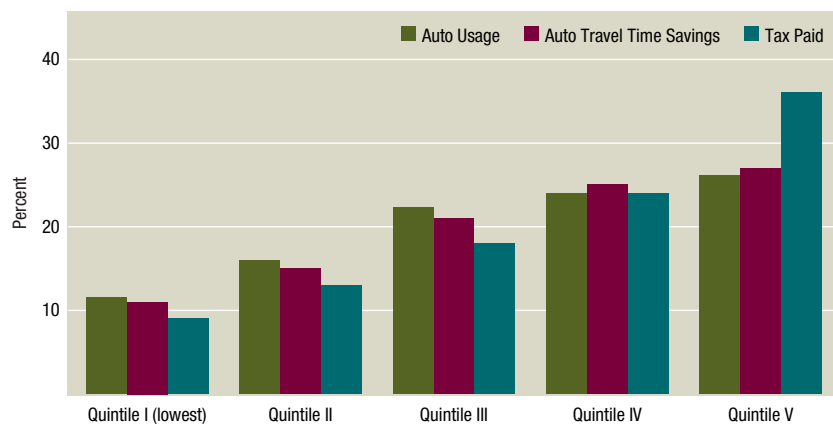


Figure 11: Share of Transit System Usage, Transit Travel Time Savings, and Taxes Paid shows the results for low-cost transit modes, such as local bus and light rail, for the five income groups. Taxes paid by each quintile group, as shown in this analysis, remained consistent with the findings in the 2004 RTP analysis. The 2008 RTP analysis indicates a significant rise in local transit savings for those households in Quintile I. This is a 14 percent increase from results in the 2004 RTP analysis.

According to the 2008 RTP analysis, the two lowest income quintiles will pay just over 20 percent of total taxes collected in the region, but will enjoy 65 percent of the local transit time savings. The two highest income quintiles share of taxes (60 percent) will exceed the benefits they receive in transit time savings (16 percent) and account for only 9 percent of total bus and light rail usage. The findings indicate that transit travel times for lower income groups for both work and non-work trips are expected to decrease due to the number of new bus and rail improvements proposed in the 2008 RTP.

Results were also calculated for trips made by automobile. The underlying assumption for Figure 12: Share of Auto Usage, Auto Travel Time Savings, and Taxes Paid illustrates that the share of benefits is proportionate to the share of taxes paid. Higher income groups are anticipated to have the most benefit in auto travel time savings, but will also incur the highest taxes. It is anticipated that the amount of taxes paid by those in Quintile V (36 percent) will exceed their share of benefits (27 percent). The lowest quintile group will benefit the least, accounting for 12 percent of auto usage and 11 percent of auto travel time savings. This can be attributed to the fact that higher income groups (Quintile IV and V) have higher access to private automobiles and will use this as their primary mode of travel. However, that benefit comes at a steep price, as the highest two income quintiles pay for 60 percent of total taxes. This is consistent with the results in the 2004 RTP.

**FIGURE 12 SHARE OF AUTO USAGE, AUTO TRAVEL TIME SAVINGS, AND TAXES PAID**



## AUTO TRAVEL DISTANCE REDUCTIONS

### Methodology

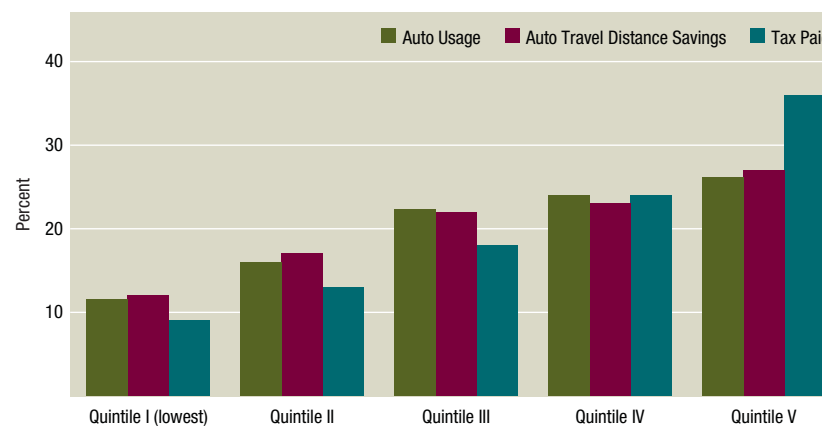
Another way of estimating benefits is to calculate savings in terms of person-miles traveled (PMT). These results indicate that the share of auto travel distance savings, like that for auto travel time savings, generally resembles the share of usage and taxes paid. This is another way of estimating the benefits of land-use strategies reflected in the Plan, locating homes nearer to work places and intensifying land-use.

### Results

The underlying assumption for Figure 13: Share of Auto Usage, Auto Travel Distance Savings & Taxes Paid is that the share of auto travel distance savings is generally proportionate to the share of taxes paid and transportation system usage between all income groups. The taxes paid by the highest income group (36 percent) are anticipated to exceed their share of benefits (27 percent). The lowest quintile group is expected to have the least amount of benefits, accounting for 12 percent of auto usage and auto travel distance savings. They

will also pay the least amount of taxes at 9 percent. Similar to the findings for Auto Travel Time Savings, higher income groups are anticipated to have the most benefits because their primary mode of travel will be the automobile. This is consistent with the results in the 2004 RTP.

**FIGURE 13 SHARE OF AUTO USAGE, AUTO TRAVEL DISTANCE SAVINGS & TAXES PAID**



## ENVIRONMENTAL IMPACTS

Transportation projects can have both a positive or negative impact on the environment. On the one hand, investments can cause travelers to shift to less polluting modes (e.g. bus, train, carpooling, or commuter rail). On the other hand, investments that increase traffic on a particular facility usually degrade air quality in the immediate vicinity of that facility.<sup>25</sup> In order to evaluate the environmental impacts of the 2008 RTP, the environmental justice analysis addressed air pollutant emissions and noise generated from aviation and highway activities.

<sup>25</sup> Caltrans. Desktop Guide: Environmental Justice in Transportation Planning Investments. January 2003.



Minorities and low-income groups may be particularly vulnerable to the effects of air pollution. SCAG's air pollutant emissions analysis was based on emission estimates for pollutants that have localized health effects: carbon monoxide (CO) and particulate matter (PM). Analysis was also conducted for PM exhaust emissions from heavy-duty vehicles: an indicator for diesel toxic air contaminants. The results were computed based on the average emissions at the TAZ level and weighted according to the population of each ethnic or income group in that TAZ. This analysis focuses on air emissions and noise impacts generating from aviation and highways.

Transportation is a major source of noise. Some typical principal noise generators within the SCAG region are associated with airports, freeways, and arterial roadways. Intrusive noise can cause stress and degrade the quality of life for people in affected areas. In extreme cases, intrusive noise can pose a threat to hearing. New transportation facilities or other system changes that increase traffic levels will generally increase noise levels near the facility.<sup>26</sup>

Sound is measured on a non-linear scale in units of decibels. An adjusted scale, using A-weighted decibels [dB (A)], emphasizes those sound frequencies that is audible to humans. On this scale, a 10 dB (A) increase is perceived as a doubling of sound. Sound above 65 dB (A) is considered annoying and sound above 125 dB (A) is painful. Noise generated from the transportation system generally falls above the annoyance level, but below that which is painful.<sup>27</sup>

SCAG's analysis of noise considers two sources: aviation noise (from aircraft at the region's airports) and highway noise. While other transportation modes, such as trains, also create noise, insufficient data was available to analyze these impacts. Because of the differences in the data sources, and varying standards used to regulate the different sources, SCAG's analysis takes a different approach for aviation noise than for highway noise. Given the metrics used for the noise analyses, it is not appropriate to combine the data to estimate aggregate noise impacts of the 2008 RTP.<sup>28</sup>

<sup>26</sup> Ibid.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

## Results

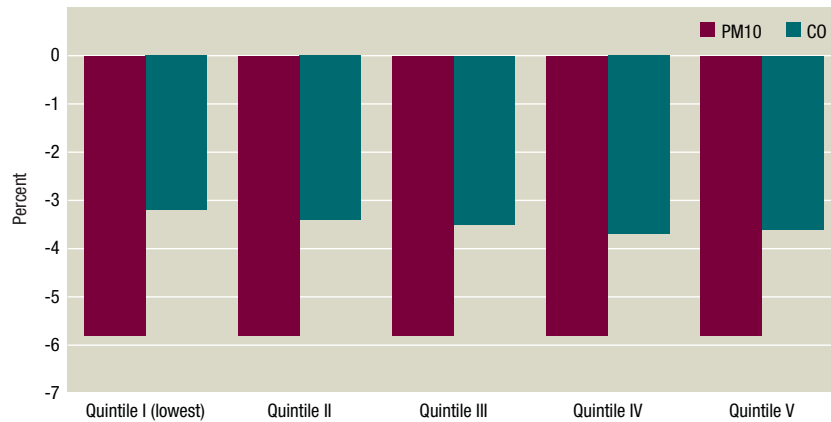
### Air Pollutant Emissions

It is important to note that total emissions of all pollutants in the region will decrease compared to existing conditions with or without the Plan investments, due to the combination of measures being taken to meet air quality standards. Since the 2008 RTP must demonstrate conformity with regional air quality management plans that call for reductions in emissions of air pollutants, the Plan itself will likewise result in reductions of pollutant emissions. This is generally because the Plan investments will alleviate roadway congestion and provide a greater range of transportation alternatives. The following analysis, however, is based on a comparison of Plan to Baseline conditions, rather than a comparison of Plan to current conditions.

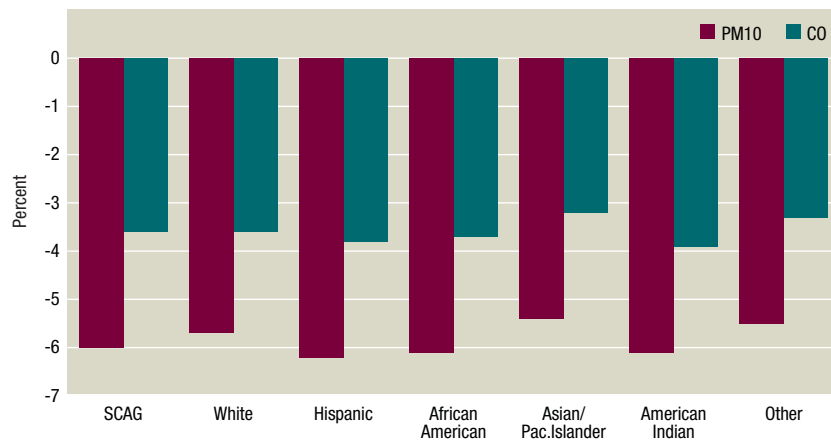
Since pollutant concentration levels could not be estimated, the geographic emissions distribution analysis presented here focuses on pollutants that tend to have localized effects which are generally proportionate to emissions – CO and fine particulate matter (PM10). The analysis does not cover pollutants that do not have localized effects proportionate to emissions, but are regionally distributed as a result of chemical interactions, photochemical reactions and meteorology (VOC, NOx, and SOx).

In addition to not being based on concentrations, this methodology assumes that all residents in a given TAZ are equally exposed. Generally both CO and PM10 tend to impact those located closest to the source of emissions. Thus, in a TAZ containing a roadway, those closest to the roadway would experience greater emissions and potential health impacts than those located further away. This difference, as it might exist within TAZs, is not addressed by this analysis - only differences between the aggregate demographic totals of different TAZs are addressed. Notwithstanding these assumptions, the methodology presents a reasonable gross measure of air quality impacts of mobile sources in the region.

**FIGURE 14 DECREASE IN AIR POLLUTANT EMISSIONS BY INCOME CATEGORY (PLAN VS. BASELINE, 2035)**



**FIGURE 15 DECREASE IN AIR POLLUTANT EMISSIONS BY ETHNIC/RACIAL CATEGORY (PLAN VS. BASELINE, 2035)**



Overall, the region as a whole will generally experience an improvement in air quality via reductions in transportation-related emissions. As illustrated by Figure 14: Decrease in Air Pollutant Emissions by Income Category and Figure 15: Decrease in Air Pollutant Emissions by Ethnic/Racial Category, on

a regional scale, all income and ethnic groups will experience reductions in PM10 and CO under the Plan.

### Aviation Noise Impacts

The SCAG Region supports the nation’s largest regional airport system in terms of number of airports and aircraft operations, operating in a very complex airspace environment. The system has six established air carrier airports including Los Angeles International (LAX), Bob Hope (formerly Burbank), John Wayne, Long Beach, Ontario and Palm Springs. There are also four new and emerging air carrier airports in the Inland Empire and North Los Angeles County. These include San Bernardino International Airport (formerly Norton AFB), March Inland Port (joint use with March Air Reserve Base), Southern California Logistics Airport (formerly George AFB) and Palmdale Airport (joint use with Air Force Plant 42). The regional system also includes 45 general aviation airports and two commuter airports, for a total of 57 public use airports. There are significant challenges in meeting the future airport capacity needs of Southern California. One significant challenge is striking a balance between the aviation capacity needs of Southern California with the local quality of life constraints for the affected populations.

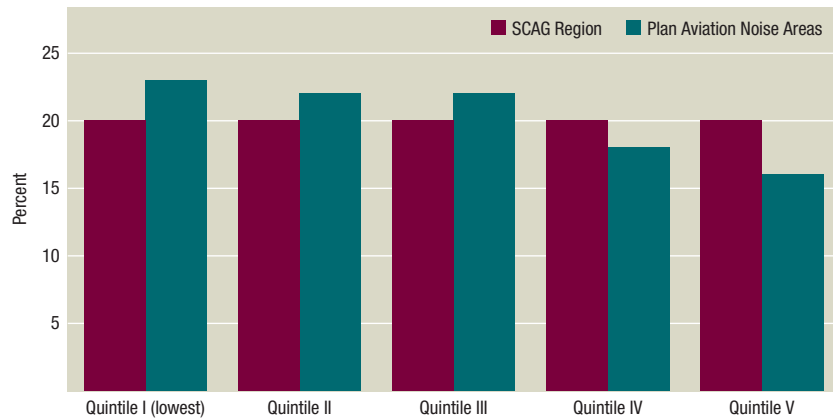
Projected noise impacts from aircraft operations at the region’s airports in 2035 were modeled for inclusion in the PEIR for the RTP. For each airport, modeling produced a contour or isoline for the 65 dB Community Noise Equivalent Level (CNEL), a measure of noise that takes into account both the number and the timing of flights, as well as the mix of aircraft types. The Federal Aviation Administration (FAA) considers residences to be an “incompatible land use” with noise at or above 65dB this CNEL level.

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

1. Calculating the percentage of TAZs that would lie within a 65 dB CNEL contour.
2. Assigning the SCAG projected population to the TAZ.

- Applying the demographic breakdown of the TAZ as a whole to the population within the 65 dB CNEL contour.

**FIGURE 16 DISTRIBUTION OF HOUSEHOLDS IN AVIATION NOISE AREAS BY INCOME CATEGORY (PLAN VS. BASELINE, 2035)**



For the purposes of this study, Aviation Noise Areas are defined as areas that are adversely affected by aircraft and airport noise. Figure 16: Distribution of Households in Aviation Noise Areas by Income Category demonstrates that there is a marginal disproportionate impact between each income group in the 2008 RTP, which is similar to the findings in the 2004 RTP. The disparity between the lowest and highest quintile group is approximately 7 percent. Each income quintile (by definition) contains 20 percent of the Region’s households in 2035. Under the 2008 RTP, the lowest income group (Quintile 1) will represent 23 percent of the households impacted by noise above the 65 dB CNEL.

**FIGURE 17 DISTRIBUTION OF HOUSEHOLDS IN AVIATION NOISE AREAS BY ETHNIC/RACIAL CATEGORY (PLAN VS. BASELINE, 2035)**

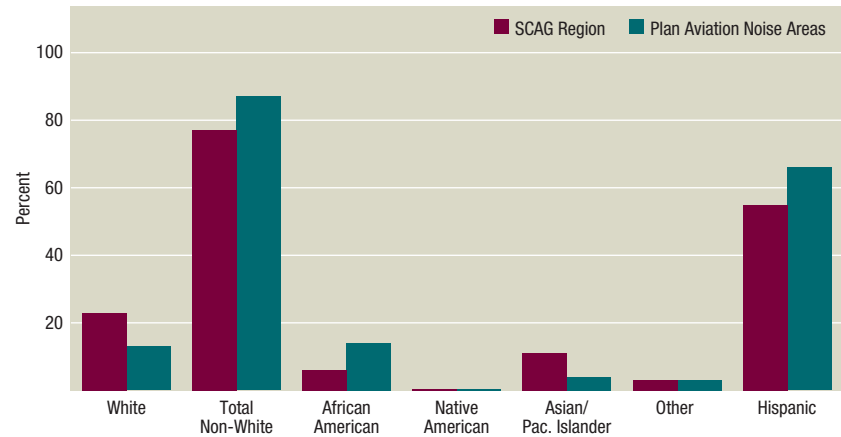


Figure 17: Distribution of Households in Aviation Noise Areas by Ethnic/Racial Category indicates that the 2008 RTP is projected to have a disproportionate aviation noise impact on minority groups. Although non-whites comprise 77 percent of the region’s population in 2035, they will make up 87 percent of those affected by the 65 dB CNEL contour. In particular, 66 percent of the impacted population will be Hispanics, which is a 20 percent increase from the 2004 RTP. It is also interesting to note that the number of impacted African-Americans, who represent 6 percent of the region’s population, is anticipated to decrease 15 percent from the 2004 RTP.

SCAG’s adopted the Aviation Decentralization Strategy, which calls for relieving the pressure on LAX and Ontario as well as relieving surface congestion in the surrounding areas with its proposed ground access strategy, would also address this disproportionate disparity. The Aviation Decentralization Strategy explores available airport capacity in the Inland Empire and North Los Angeles County, particularly Palmdale. With international service established at Palmdale and Ontario airports, the region would have a balanced system of three international airports, similar to the San Francisco Bay Area and New York regions.

This presents a number of advantages for nearby communities. A decentralized airport system will relieve pressure on constrained airports, minimize environmental impacts, such as noise, traffic, and encroachment on adjacent neighborhoods, and reduce stress on the region's surface transportation infrastructure. However, the primary challenge of decentralizing demand to these airports relates to the fact that the core of aviation demand will continue to reside in the urban areas of Los Angeles and Orange counties.

Although the gap between the income groups is projected to be a marginal difference, the environmental justice analysis results demonstrate that lower-income and minority residents still bear a disproportionate burden from aviation noise pollution with the 2008 RTP. As such, it is critical to continue addressing this environmental justice issue.

### Highway Noise Impacts

The region has over 20,750 centerline miles and 65,000 lane-miles of roadways, including one of the most extensive High-Occupancy Vehicle (HOV) lane systems in the country. Additionally, the region has a growing network of tolled lanes and High Occupancy Toll (HOT) lanes. Additionally, the region has an enormous number of arterial roadways. Noise from these sources can be a significant environmental concern.

Noise associated with highway traffic depends on a number of factors that include traffic volumes, vehicle speed, vehicle fleet mix (cars, trucks), as well as the location of the highway with respect to sensitive receptors. According to Federal Highway Administration (FHWA) guidance, noise impacts occur when noise levels increase substantially when compared to existing noise levels. For the purposes of this analysis (consistent with FHWA guidance), noise increases of 3 dB along highways where noise levels are currently, or would be in the future, above 66 dB are considered to be significant, regardless of adjacent land use.

Highways that would be expected to have an increase of 3 dB or more include those where any of the following would occur: (1) the total traffic volumes increase by 100 percent compared to existing conditions; (2) the medium/heavy

truck traffic volumes increase by 130 percent compared to existing conditions; or (3) the medium/heavy truck traffic volumes increase by 100 percent and there is an increase in other traffic volumes by 50 percent. These highway segments were identified using the results of SCAG's regional transportation model.

On some highways, there is no potential for noise levels to reach 66 dB. To eliminate these from the analysis, the following criteria were applied: (1) arterials where the FHWA's Traffic Noise Model (TNM) indicated that the motor vehicle volume (and the percentage of medium/heavy trucks) would result in traffic noise levels less than 66 dB; (2) arterials where the calculated motor vehicle speed was less than 17 mph; or (3) freeways where the average volume-to-capacity ratio was equal to or greater than 1.0, which would result in vehicle speeds of less than 30 mph. If a highway met any one of these criteria, it was eliminated from further consideration.

For each highway segment where a significant increase in noise would occur, a 150-foot impact zone was determined to either side. Using GIS, the percentage of each affected TAZs land area that fell within this zone was identified, and this percentage was applied to the demographic data forecast for this TAZ. This methodology was utilized in the 2004 RTP as well. However, this contrasts with the 2001 RTP analysis, where no impact zone was identified and the entire affected TAZ was included, even though noise impacts occur adjacent to the freeway. This change in methodology made the analysis more precise. Also, in contrast to the aviation impact analysis, no percentage was applied for residential zoning. The highway noise analysis identified an impact even when a land use not sensitive to noise (for example, industrial) was located adjacent to a highway. The demographic characteristics of each impacted TAZ portion were aggregated and compared with the regional demographics to determine if there would be any disproportionate impacts to any of the demographic groups identified in Section I of this Appendix.

**FIGURE 18 DISTRIBUTION OF HOUSEHOLDS IN HIGHWAY NOISE AREAS BY INCOME CATEGORY (PLAN VS. BASELINE, 2035)**

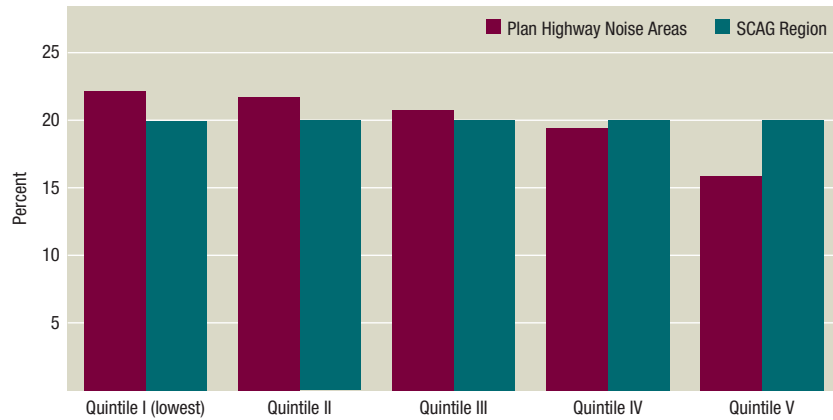
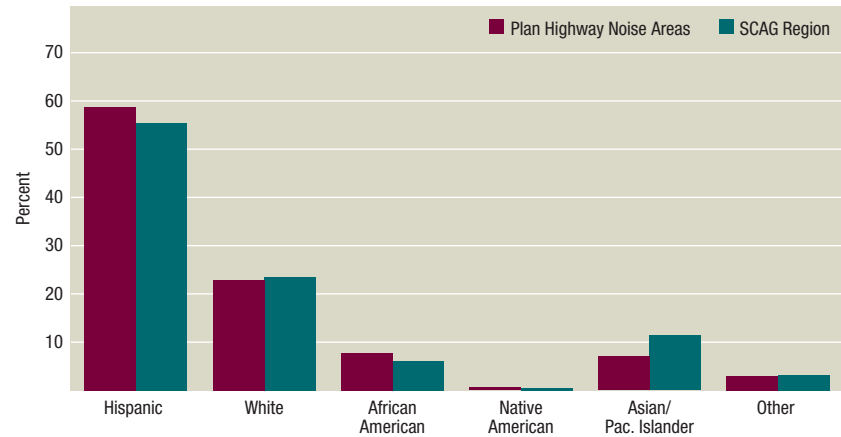


Figure 18: Distribution of Households in Highway Noise Areas by Income Category, identified a marginal disproportionate impact between each income group. The lowest income group (Quintile 1) will account for 22 percent of the affected population in 2035. There is a 6 percent difference between the lowest and the highest income quintiles.

**FIGURE 19 DISTRIBUTION OF HOUSEHOLDS IN HIGHWAY NOISE AREAS BY ETHNIC/RACIAL CATEGORY (PLAN VS. BASELINE, 2035)**



The 2008 RTP also found that minority populations were primarily affected by highway noise impacts. Figure 19: Distribution of Households in Highway Noise Areas by Ethnic/Racial Category indicates that minority populations, specifically Hispanics, would be disproportionately impacted by highway noise. Approximately, 59 percent of Hispanics would be residing in highway noise areas by 2035. This is a 12 percent increase from the results of the 2004 RTP analysis.

The identification of these disparate highway noise impacts at the regional level can be attributed to a the issue of incompatible land use, where high-polluting transportation projects, such as freeway construction, airport expansions, or rail extension projects, are located in minority populated neighborhoods. Corridor-level analysis should be conducted for proposed projects in areas where burdens are concentrated. In addition, the 2008 RTP proposes mitigating these impacts to the extent possible, for example, by requiring new soundwalls where freeway expansions are proposed. Furthermore, the RTP also proposes grade crossings, new technologies, and other clean technologies for goods movement corridors.

## New Social Equity Elements

In addition to the performance measures analyzed above, the 2008 RTP environmental justice analysis has undertaken new components. Summarized below are the new initiatives that have either directly or indirectly resulted from previous environmental justice discussions and comments received.

- **Accessibility:** In the 2004 RTP environmental justice analysis, SCAG analyzed the percentage of jobs accessible within 45 minutes. The 2008 RTP analysis instead used 30 minutes to calculate accessibility. SCAG determined that the 30 minute travel-time criterion was more indicative of accessibility to the locations of employment services.
- **Trips:** In the 2008 RTP, both work and non-work trips were analyzed. Previous RTP environmental justice analysis only included work trips. In this analysis, both work and non-work trips were calculated for each TAZ. Incorporating non-work trips into the analysis provides a more accurate determination of allocation of benefits and burdens for each of the performance measures.
- **Access to Parks:** In response to the comments on the draft 2008 RTP Environment Justice analysis, SCAG conducted additional and new analysis on accessibility to parks from the perspective of the long range regional transportation plan.
- **County Data:** In response to the comments received on the draft 2008 RTP Environment Justice analysis, SCAG prepared additional and new analysis on a county-wide level. This information is included as supplementary information. (See pages 26 through 28)

## Conclusions

SCAG's performance indicators reflect a broad set of goals and objectives put forward for the region and its transportation system. The intention of the environmental justice analysis is to demonstrate that SCAG's planning processes and methods are responsive to imbalances caused by the development of the

plans, programs, and policies in the 2008 RTP. An overview of the findings is listed below:

- **Accessibility to Employment:** The results indicate that low-income and minority communities in the region will have higher levels of access to employment via local bus and rail with the 2008 RTP. The results indicate that on a regional scale, no disproportionate impacts are anticipated between income groups as a result of the Plan.
- **Accessibility to Parks:** All income groups for the whole region will have greater park accessibility due to the infrastructure investments proposed in the 2008 RTP. However, a multi-agency effort must be undertaken in order to further address and remedy the issue of inequity of park access.
- **Distribution of Plan Expenditures (Investments):** SCAG analyzed the distribution of Plan expenditures based on mode usage information by income quintile. Under the Plan, approximately 28 percent of investments will go to modes predominantly used by lowest quintile group, while 16 percent will be invested for modes likeliest to be used by the highest income category (Quintile V). The current analysis also reveals that under the 2008 RTP, Plan investments will be distributed more equitably on the basis of system usage by ethnic/racial groups. In other words, transportation investments would go to modes likeliest to be used by low income and minority households.
- **Taxes Paid:** Overall, tax burdens are anticipated to fall heavily on higher-income groups. The lower income groups (Quintile I and Quintile II), which uses bus and light rail as their primary modes of travel, are anticipated to pay 22 percent of taxes.
- **Distribution of Transit Travel Time Savings:** The results in the 2008 analysis also reveal that the two lowest income quintiles will pay just over 20 percent of total taxes collected in the region, but will enjoy 65 percent of the local transit time savings. The two highest income quintiles share of taxes (60 percent) will exceed the benefits they receive in local transit time savings (16 percent), accounting for only 9 percent of total bus and light rail usage. The findings indicate that transit travel times for



lower income groups for both work and non-work trips are expected to decrease due to the number of new bus and rail improvements proposed in the 2008 RTP.

- **Distribution of Auto Travel Time Savings:** The amount of taxes paid by those in Quintile V (36 percent) will exceed their share of benefits (27 percent). The lowest quintile group will benefit the least, accounting for 12 percent of auto usage and 11 percent of auto travel time savings. Higher income groups are anticipated to have the most benefit in auto travel time savings, but will also incur the highest taxes.
- **Auto Travel Distance Reductions:** The lowest quintile group is expected to have the least amount of benefits, accounting for 12 percent of auto usage and travel distance savings. They will also pay the least amount of taxes at 9 percent. The taxes paid by the highest income group (35 percent) are anticipated to exceed their share of benefits (27 percent). Similar to the findings for Auto Travel Time Savings, higher income groups are anticipated to have the most benefits because their primary mode of travel will be the automobile.
- **Air Pollutant Emissions:** Overall, the region as a whole will generally experience an improvement in air quality via reductions in transportation-related emissions due to ongoing mobile source emission controls and investments in the Plan. On a regional scale, the analysis did not reveal any disproportionate impact between ethnic/racial categories.
- **Noise:** The results in the 2008 RTP analysis indicate that low-income and minority groups will be disproportionately impacted by aviation and highway noise.

The 2008 RTP environmental justice analysis sought to answer two core questions:

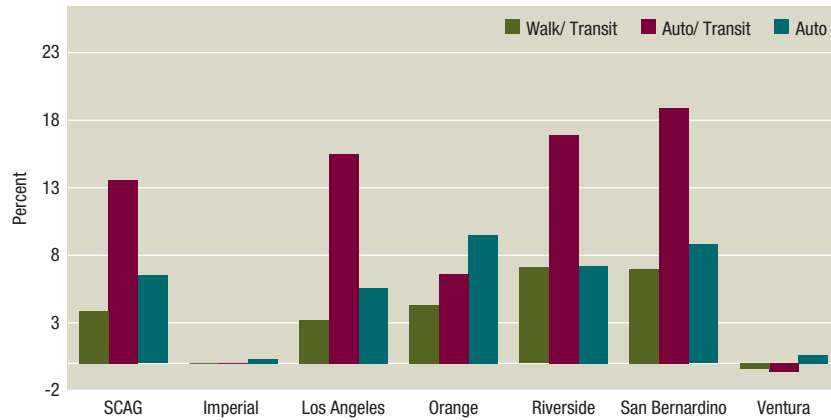
- Are people worse or better off with or without the Plan?
- Is there a disproportionate negative impact of the Plan on any demographic group?

Although these questions cannot fully be answered, the 2008 RTP seeks to identify and address Title VI of the Civil Rights Act and any environmental justice implications of the planning processes and investment decisions. It is critical for SCAG and policy-makers alike to ensure that their transportation programs, policies, and activities serve all segments of the region without generating disproportionately high and adverse effects.

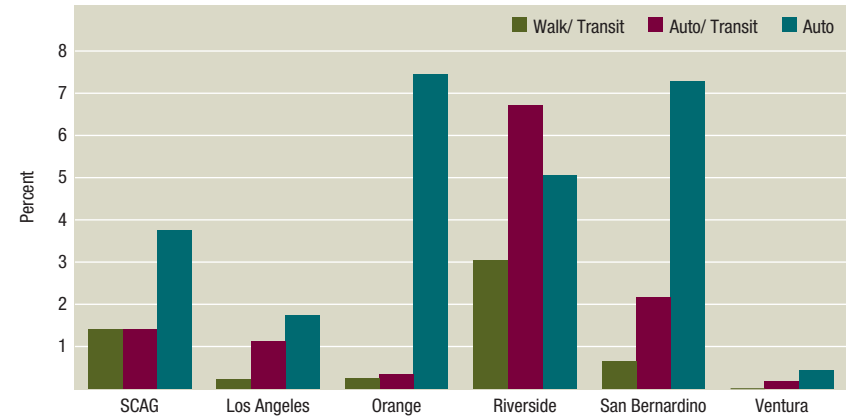
In the face of continued population growth, sprawling urbanization, increasing annual vehicle miles traveled, and an expanding economy, policy-makers must make decisions that will have significant implications for the region's land use patterns, densities, nodes for growth and development, environmental health, livability, accessibility and equity. Accommodating the anticipated growth in the SCAG region in a sustainable way—by taking into account ecological, economic and social justice factors, while enhancing quality-of-life for present and future generations—represents the central challenge facing regional transportation planning in Southern California.

# County Data

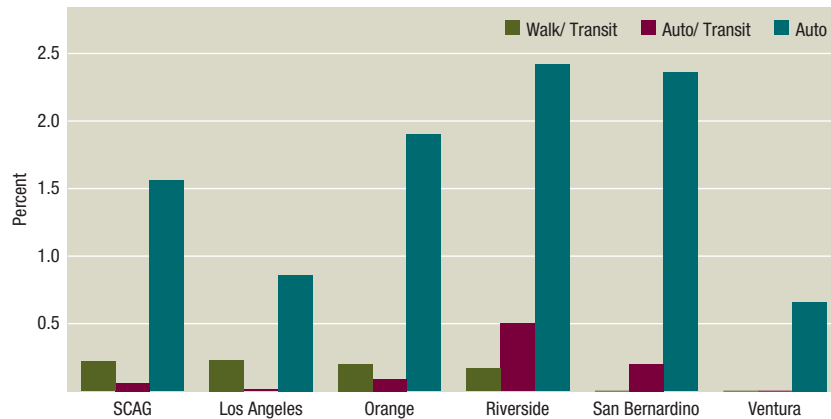
**COUNTY 1 ACCESSIBILITY TO EMPLOYMENT BY HOUSEHOLDS (PLAN VS. BASELINE, 2035)**



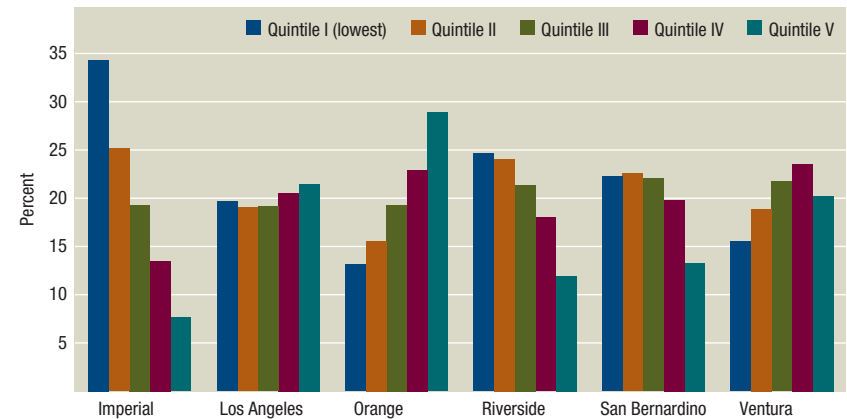
**COUNTY 3 COMPARISON OF LOCAL PARK ACCESSIBILITY IMPROVEMENTS BY TRAVEL MODE AND INCOME QUINTILE (PLAN VS. BASELINE, 2035)**



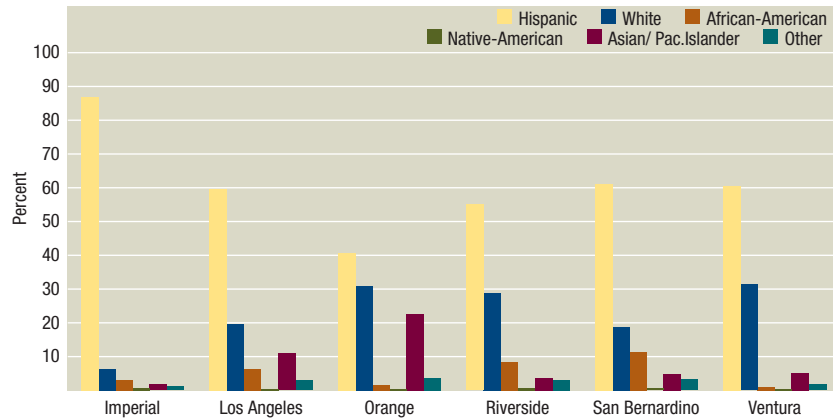
**COUNTY 2 COMPARISON OF STATE PARK ACCESSIBILITY IMPROVEMENTS BY TRAVEL MODE AND INCOME QUINTILE (PLAN VS. BASELINE, 2035)**



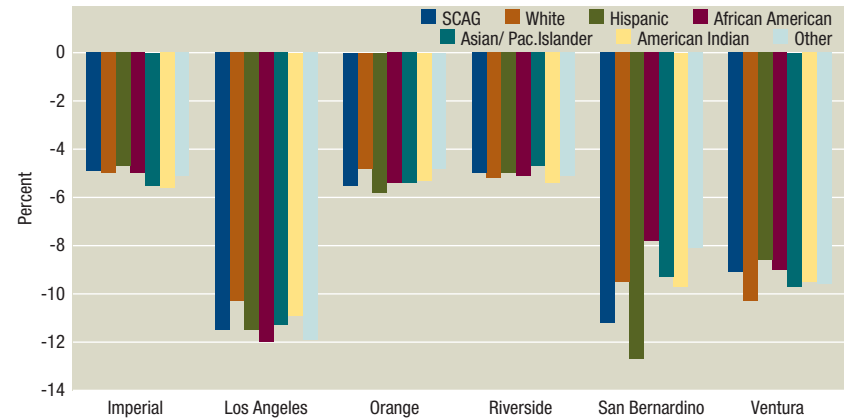
**COUNTY 4 DISTRIBUTION OF HOUSEHOLDS IN HIGHWAY NOISE AREAS BY INCOME QUINTILE (PLAN VS. BASELINE, 2035)**



**COUNTY 5 DISTRIBUTION OF HOUSEHOLDS IN HIGHWAY NOISE AREAS BY ETHNIC/RACIAL CATEGORY (PLAN VS. BASELINE, 2035)**



**COUNTY 7 DECREASE IN PM10 POLLUTANT EMISSIONS BY ETHNIC/RACIAL CATEGORY & COUNTY (PLAN VS. BASELINE)**



**COUNTY 6 DECREASE IN PM10 POLLUTANT EMISSIONS BY INCOME CATEGORY & COUNTY (PLAN VS. BASELINE, 2035)**

