SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

RTP 2008 REGIONAL TRANSPORTATION PLAN

Making the Connections

Growth Forecast Report

GROWTH FORECAST

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Integrated Growth Forecast

In February 2005, SCAG initiated the 2008 RTP Growth Forecast Update Process, now known as the 2008 "Integrated Growth Forecasting" process. The resulting Integrated Growth Forecast established the population, employment, households and housing units forecasted in the region for use in both the RTP and the state-mandated Regional Housing Needs Assessment completed in July 2007. SCAG's Plans & Programs Technical Advisory Committee assisted in the process by providing technical input. Policy Committees of the Regional Council were periodically informed of progress and provided additional direction to the process.

The Integrated Growth Forecast sets the optimal stage for a future regional growth scenario as it ties housing to transportation planning, considering both needs simultaneously in communities throughout the region. This approach ensures that the resulting assumptions are consistent with planned transportation infrastructure. Based on a combination of recent and past trends, reasonable key technical assumptions, and existing and new local policy options, the Integrated Growth Forecast provides the basis for developing the land use assumptions at the regional and small area levels which build the Plan Alternative.

Development of the Integrated Growth Forecast

Development of the Integrated Growth Forecast involved several steps. The first entailed an analysis of recent regional growth trends and the collection of significant local plan updates. A variety of large area estimates and projections were collected from the federal and state governments. The sources included information from the following agencies:

- U.S. Department of Commerce, Census Bureau and Bureau of Economic Analysis,
- U.S. Department of Labor, Bureau of Labor Statistics,
- U.S. Internal Revenue Service (IRS),
- U.S. Citizenship and Immigration Services,
- U.S. Department of Health and Human Services,
- California Department of Finance (DOF),
- California Employment Development Department,
- Information received through the Intergovernmental Review process, and
- Small area estimates and projections were also available from aerial land use data, data from ES202, CTPP, general plan, parcel level data from tax assessor's office, building permits from Construction Industry Research Board and demolition data from the DOF.

Next was the review and update of the 2004 regional growth forecast methodology and key assumptions used as part of SCAG's 2004 Regional Transportation Plan. The widely used methodology included the cohort-component and shift-share methods. The key technical assumptions included updates regarding the fertility rate, mortality rate, net immigration, domestic in-migration, domestic out-migration, labor force participation rates, double jobbing rates, unemployment rates, and headship rates.

The next step was to develop and evaluate the draft regional Integrated Growth Forecast scenarios with small area distributions. Regional growth forecast scenarios were developed and allocated into the smaller geographic levels using public workshops. The small area distributions of the regional growth were evaluated using transportation and emission modeling results and environmental impact review.

Last was the selection and adoption of a preferred regional growth forecast and small area distributions.

An organized forecasting decision making process is required to develop a consensus regional growth forecast in an efficient, open, and fair manner. Various forms of input were used in the forecasting process, including a panel of experts, subregional/local review, stakeholders/data users, public outreach,

technical committee, policy committee, and the Regional Council. Steps included:

1. Survey of local jurisdictions regarding recent changes in general plan and developments that could affect the long-term growth patters envisioned in the 2004 RTP/Growth Vision policy forecast.
2. Provision to Transportation Modelers of the extended Year 2000 socioeconomic data set for new model development and calibration.
3. Collaboration with subregions/local jurisdictions, review and revision of the 2003 base year small area distribution of employment, population, and household, and completion/delivery of the 2003 extended socioeconomic data set to Modeling Division.
4. Request and receipt of input from subregions regarding their perspectives of future growth in population, employment and household.
5. Review and presentation of recent trends in population, employment and household growth and completion of preliminary 2008 RTP no-project growth forecasts at regional, county, subregion levels.

During 2006, the following major milestones were accomplished for the 2008 Integrated Growth Forecasting process:

- January 2006: Convened the Panel of Experts to review and comment on 2008 RTP growth forecast at regional/county/subregion level.
- February 2006: Counties/subregions and local jurisdictions were invited to present their perspectives on growth and any pertinent growth issues to SCAG staff and the Panel of Experts.
- March – August 2006: Presented the updated 2008 RTP growth forecasts at region and county levels to the Plans & Programs Technical Advisory Committees and Panel of Experts.
- September 14, 2006: CEHD approved and directed staff to proceed with the disaggregation of the draft 2008 integrated regional/county forecasts into smaller geographic levels and scheduling of subregion/local jurisdiction workshops and inputs process.
- October – January 2007: Completed 15 subregional workshops, including interactive exercise of 2035 growth scenarios, and RHNA exercise 2005-2014 at which AB 2158 factors forms filled out.
  - Formal and informal comments were received
  - Follow-up meetings with local subregions/jurisdictions.

Growth Forecast Methodology and Assumptions

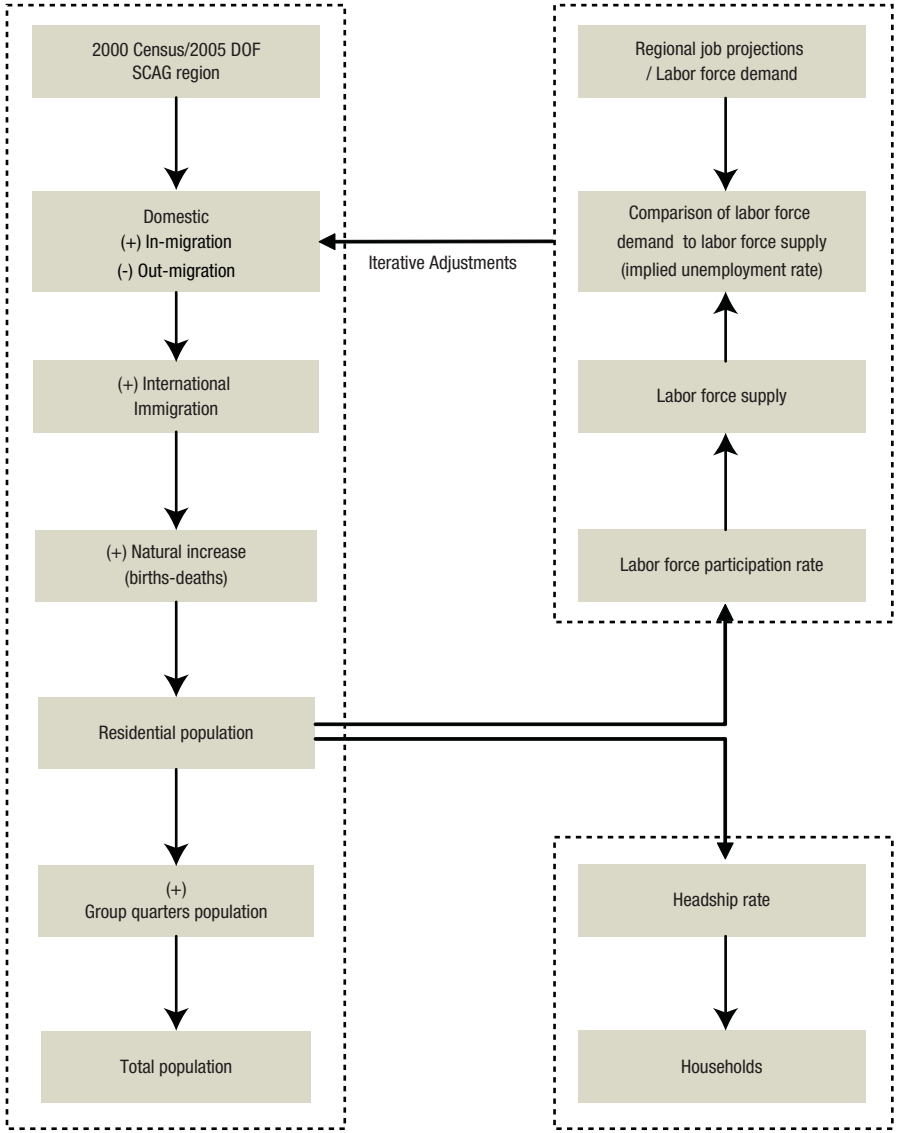
This section describes the detailed methodology and key assumptions for the SCAG regional baseline demographic and employment forecast at four levels of geography (e.g. SCAG region, county, city, and census tract/transportation analysis zone).

DEMOGRAPHIC FORECAST METHODOLOGY AND ASSUMPTIONS

REGIONAL POPULATION PROJECTION

Figure A1 shows the linkage of population, households, and employment in the regional demographic forecast process. These three major variables are projected by reflecting the reasonable relationships among them. Demographic rates are used to link these major variables, including headship rate, labor force participation rate, implied unemployment rate, and domestic migration rate.

FIGURE A1 REGIONAL DEMOGRAPHIC FORECAST PROCESS



Cohort-Component Model

SCAG projects regional population using the cohort-component model. The model computes the population at a future point in time by adding to the existing population the number of group quarters population, births and persons moving into the region during a projection period, and by subtracting the number of deaths and the number of persons moving out of the region. This process is formalized in the demographic balancing equation. The following balancing equation is prepared using year t_0 and year t_1

$$POP_{t_1}^{region} = POP_{t_0}^{region} + Q_{t_0-t_1}^{region} + B_{t_0-t_1}^{region} - D_{t_0-t_1}^{region} + NETMIG_{t_0-t_1}^{region}$$

where

$POP_{t_1}^{region}$ = total population at the future year t_1

$POP_{t_0}^{region}$ = total population at the base year t_0

$Q_{t_0-t_1}^{region}$ = the number of group quarters population that occur during the interval t_0 - t_1

$B_{t_0-t_1}^{region}$ = the number of births that occur during the interval t_0 - t_1

$D_{t_0-t_1}^{region}$ = the number of deaths that occur during the interval t_0 - t_1

$NETMIG_{t_0-t_1}^{region}$ = the amount of net migration that occurs during the interval t_0 - t_1

The following is a description of how components of population change are projected. Two time periods: 2005 and 2010 are used as an example.

Group quarters population

$$Q_{t_{2010}}^{region} = RES_{t_{2010}}^{region} * CGQR_{t_{2000}}^{region}$$

where

$Q_{t_{2010}}^{region}$ = group quarters population in 2010.

$RES^{region}_{t_{2010}}$ = regional civilian resident population in 2010

$CGQR^{region}_{t_{2000}}$ = the ratio of group quarters population to total population from 2000 census

Births

$$B^{region}_{t_{2005-2010}} = BASEFEM^{region}_{t_{2005-2010}} * FERTR^{region}_{t_{2005-2010}}$$

where

$B^{region}_{t_{2000-2005}}$ = the number of births between 2005 and 2010

$BASEFEM^{region}_{t_{2005-2010}}$ = base female population represents the civilian resident female population, reflecting female immigrants, outmigrants, and immigrants, who belong to child bearing ages (10-49) for the period of 2005 and 2010

$FERTR^{region}_{t_{2005-2010}}$ = fertility rate between 2005 and 2010

Deaths (Survived Population)

$$D^{region}_{t_{2005-2010}} = BASEPOP^{region}_{t_{2005-2010}} * MORTALR^{region}_{t_{2005-2010}}$$

$$SURVR^{region}_{t_{2005-2010}} = 1 - MORTALR^{region}_{t_{2005-2010}}$$

$$S^{region}_{t_{2005-2010}} = BASEPOP^{region}_{t_{2005}} * SURVR^{region}_{t_{2005-2010}}$$

where

$D^{region}_{t_{2005-2010}}$ = deaths between 2005 and 2010

$MORTALR^{region}_{t_{2005-2010}}$ = life table mortality rate (qx) between 2005 and 2010

$SURVR^{region}_{t_{20005-2010}}$ = life table survival rate (1-qx) between 2005 and 2010

$S^{region}_{t_{2005-2010}}$ = survived population between 2005 and 2010

Net Migration

$$NETMIG^{region}_{t_{2005-2010}} = INMIG^{region}_{t_{2005-2010}} - OUTMIG^{region}_{t_{2005-2010}} + IMMIG^{region}_{t_{2005-2010}}$$

$$INMIG^{region}_{t_{2005-2010}} = BASEPOP^{\text{ni}}_{t_{2005-2010}} * INMIGR^{region}_{t_{2005-2010}}$$

$$OUTMIG^{region}_{t_{2005-2010}} = BASEPOP^{region}_{t_{2005-2010}} * OUTMIGR^{region}_{t_{2005-2010}}$$

$$IMMIG^{region}_{t_{2005-2010}} = (IMMIG^{region}_{t_{1990-2005}})/3$$

where

$NETMIG^{region}_{t_{2005-2010}}$ = net migrants between 2005 and 2010

$INMIG^{region}_{t_{2005-2010}}$ = domestic immigrants from other areas in the nation to the region between 2005 and 2010

$OUTMIG^{region}_{t_{2005-2010}}$ = domestic outmigrants from the region to other areas in the nation between 2005 and 2010

$IMMIG^{region}_{t_{2005-2010}}$ = international net immigrants (including legal and undocumented) to the region between 2005 and 2010

$INMIGR^{region}_{t_{2005-2010}}$ = domestic immigration rates measured in the ratio of domestic inmigrants between 2005 and 2010 to total US population in 2005

$OUTMIGR^{region}_{t_{2005-2010}}$ = domestic outmigration rates measured in the ratio of domestic outmigrants between 2005 and 2010 to total regional population in 2005

$IMMIG^{region}_{t_{1990-2005}}$ = international net immigrants (including legal and undocumented) to the region between 1990 and 2005

The fertility, mortality and migration rates are projected in five-year intervals for two sexes, eighteen age groups, and four mutually exclusive ethnic groups: Non-Hispanic White, Non-Hispanic Black, Non-Hispanic Asian/Others, and Hispanics. These demographic rates are also projected by population classes: residents (no-migrants), domestic migrants and international migrants.

Balance of Labor Force Demand and Labor Force Supply

SCAG links population dynamics to economic trends, based on the assumption that patterns of migration into and out of the region are influenced by the availability of jobs.[1]

The future labor force supply is computed from the population projection model by multiplying civilian resident population by projected labor force participation rates. It is formulated as follows:

$$LFS_{t_{2010}}^{region} = RES_{t_{2010}}^{region} * LFPR_{t_{2010}}^{region}$$

where

$LFS_{t_{2010}}^{region}$ = regional labor force supply in 2010

$RES_{t_{2010}}^{region}$ = regional civilian resident population in 2010

$LFPR_{t_{2010}}^{region}$ = regional labor force participation rate in 2010

This labor force supply is compared to the labor force demand based on the number of jobs projected using the shift-share economic model. The labor force demand is derived using a two-step process. The first step is to convert jobs into workers using the double job rate, which is measured by the proportion of workers holding two jobs or more to total workers.

$$WRKR_{t_{2010}}^{region} = JOB_{t_{2010}}^{region} (1 + DJR_{t_{2010}}^{region})$$

where

$WRKR_{t_{2010}}^{region}$ = regional workers in 2010

$JOB_{t_{2010}}^{region}$ = regional jobs in 2010

$DJR_{t_{2010}}^{region} = (JOB_{t_{2005}}^{region} / WRKR_{t_{2005}}^{region}) - 1$ = regional double job rate in 2010

The second step is to convert workers into labor force demand using the regional unemployment rate.

$$LFD_{t_{2010}}^{region} = WRKR_{t_{2010}}^{region} (1 - UNEMP_{t_{2010}}^{region})$$

where

$LFD_{t_{2010}}^{region}$ = regional labor force demand in 2010

$WRKR_{t_{2010}}^{region}$ = regional workers in 2010

$UNEMP_{t_{2010}}^{region}$ = regional unemployment rate in 2010

If any imbalance occurs between labor force demand and labor force supply, it is corrected by adjusting the domestic migration assumptions of the demographic projection model. The gross migration optimization technique[2] produces reasonable gross in-migration and out-migration assumptions by optimizing traditional adjustment factors used in the plus-minus method. The major advantage of the gross migration optimization technique is to immediately develop the size of in-migration and out-migration, while maintaining acceptable age and sex specific in-migration and out-migration schedules. Adjusted migration assumptions are followed by total population changes.

Key Regional Demographic Assumptions

Key demographic estimates and projections are updated since the 2004 RTP growth forecast. The US Census Bureau released interim projections of the U.S. and California State population by age, sex, race, and Hispanic origin in March-April 2004. The California Department of Finance has updated estimates of population and households and released population projections by race/ethnicity for California and its Counties 2000–2050 in May 2004.

Analyses of recent regional population and household trends from diverse statistical sources indicate declining fertility and mortality rates, leveled net immigration rates, fluctuating net domestic migration with economic cycles,

[1] George, M.V., Smith, S., Swanson, D., and Tayman, J. (2004). Population Projections. In D. Swanson and J. Siegel (eds.) *The Methods and Materials of Demography* (2nd ed.). San Diego: Academic Press. 584

[2] Choi, S., and Cho, K. (2007 April). *A Gross Migration Optimization Technique of Developing In- and Out-Migration Assumptions for Regional Population Projections*. Paper presented at the Annual Meeting of Population Association of America, New York.

and declining labor force participation and household headship rates. With additional regional assumptions of the constant double job rate (4.5%) and the implied regional unemployment rate (5%-7%), SCAG developed the demographic assumptions for the regional population and household projection.

Fertility

The total fertility rate is defined as the average number of children that would be born to a woman over her lifetime if she were to experience the exact current age-specific fertility rates (ASFRs) through her lifetime. It is obtained by summing the age-specific rates for a given time-point. Four race/ethnic female groups in Southern California show a lower fertility rate than that of US average of the specific race/ethnic group. 2000-2005 total fertility rates of NH White, NH Asian & Others, and Hispanic female groups were held constant to 2035. The Hispanic fertility rate is assumed to decline during the projection period following the projected fertility rate changes of U.S. projected middle series and interim projections.

TABLE A1 TOTAL FERTILITY BY RACE/ETHNICITY, 2000-2005 AND 2030-2035

Race/Ethnicity	2000-2005	2030-2035
NH White	1.6	1.6
NH Black	1.7	1.7
NH Asian & Others	1.4 (2.0*)	1.4 (2.0*)
Hispanic	2.5 (2.8*)	2.3 (2.5*)
Total	2.1	2.0

Note: female domestic migrants are based on the fertility rate assumption of base population (female no-migrants during the projection period). Female immigrants tend to have a higher fertility rate than female no-migrants of the specific race/ethnic groups. NH Asian & Others, and Hispanic female show a higher fertility rate than no-migrants, while NH White and NH Black female groups do not show a difference between no-migrants and immigrants.

Mortality

The region's life expectancy at birth improves at the same rate as the national rate as assumed by the US Census Bureau Middle-Series Projection and interim projections during the projection horizon. Population generally increases the life expectancy at birth by 6%-7% from 2000 to 2035.

TABLE A2 LIFE EXPECTANCY AT BIRTH BY SEX, 2000 AND 2035

Sex	2000	2035
Male	74.8	79.7
Female	80.5	85.4

Migration

International net immigration is determined using the annual average (125,000) from 1990-2005, including documented and undocumented immigrants. Domestic migration is influenced by labor demand, derived from regional employment forecasts. Race/ethnic distribution of domestic in-migrants and domestic out-migrants is determined by reflecting the changing share of the base race/ethnic population during the projection horizon. For example, the Hispanic population increases its share of domestic in- and out-migration during the projection horizon because of its increasing share of population in the region. The race/ethnic distribution of net immigration is derived using the average of 2000 Census estimates and 2005 Pew Hispanic Center Estimate, and is assumed to remain constant during the projection horizon. Age-sex composition of domestic and international migrants is based on the 2000 Census.

TABLE A3 RACE/ETHNIC DISTRIBUTION OF NET IMMIGRATION, 2000-2005 AND 2030-2035

Race/Ethnicity	2000-2005	2030-2035
NH White	11%	11%
NH Black	3%	3%
NH Asian & Others	19%	19%
Hispanic	68%	68%
Total	100%	100%

TABLE A4 RACE/ETHNIC DISTRIBUTION OF DOMESTIC IN-MIGRATION, 1995-2000 AND 2030-2035

Race/Ethnicity	1995-2000	2030-2035
NH White	55%	33%
NH Black	8%	8%
NH Asian & Others	16%	22%
Hispanic	21%	38%
Total	100%	100%

TABLE A5 RACE/ETHNIC DISTRIBUTION OF DOMESTIC OUT-MIGRATION, 1995-2000 AND 2030-2035

Race/Ethnicity	1995-2000	2030-2035
NH White	48%	35%
NH Black	7%	7%
NH Asian & Others	13%	16%
Hispanic	31%	43%
Total	100%	100%

Labor Force Participation

The 2035 labor force participation rate by age, sex, and race/ethnicity is determined by trending 2005 SCAG labor force participation rate with US BLS projected national labor force participation rate between 2005 and 2035. Assumptions were that Black/Asian/Hispanic female labor force participation rate would converge towards the White female labor force participation rate, and that the elderly population of 55 years old or more would show higher labor force participation rate over time due to lack of the skilled labor force associated with the retirement of baby boomers.

TABLE A6 LABOR FORCE PARTICIPATION RATE BY RACE/ETHNICITY, 2005 AND 2035

Race/Ethnicity	2005	2035
NH White	64%	58%
NH Black	59%	56%
NH Asian & Others	62%	58%
Hispanic	61%	58%
Total	62%	58%

REGIONAL HOUSEHOLD PROJECTION

Regional Household Projection Model

A household includes all the persons who occupy a housing unit as their usual place of residence. According to the US Census Bureau, the count of households or householders is the same as the count of occupied housing units for 100-percent tabulations. SCAG develops the estimates of 2005 total households by age, sex, and race/ ethnicity using the 2000 Census and California Department of Finance estimates of total households for January 1, 2005 and January 1, 2006.

Regional households are projected by using projected headship rate. The projected households at a future point in time are computed by multiplying the projected civilian resident population by projected headship rates. The following illustration describes how 2010 households are projected.

$$HHLD_{t_{2010}}^{region} = RES_{t_{2010}}^{region} * HEADR_{t_{2010}}^{region}$$

where

$HHLD_{t_{2010}}^{region}$ = regional households by age, sex, and ethnicity in 2010

$RES_{t_{2010}}^{region}$ = regional civilian resident population by age, sex, and race/ethnicity in 2010

$HEADR^{region}_{t_{2010}}$ = regional headship rates by age, sex, and race/ethnicity in 2010

Headship rate is the proportion of a population cohort that forms the household. It is specified by age, sex, and race/ethnicity. Headship rate is projected in 5 year intervals for each sex (male and female), seven age groups (for instance, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75+), and four mutually exclusive ethnic groups.

Regional Headship Rate Assumptions

The SCAG regional household headship rates have declined from 46.7% in 1980, to 43.7% in 1990, to 43.1% in 2000, to 41.4% in 2005. The overall household headship rate in 2035 is expected to be 41%, slightly lower than that of 2005. The overall male household headship rate is assumed to decrease during the projection horizon, while the overall female household headship rate is assumed to increase. Asian and Others' household headship rate is assumed to converge towards the White household headship rate by 50 percent of the difference from the 2000 Census White headship rate. The Hispanic household headship rate is assumed to converge towards the White household headship rate by 25 percent of the difference from the 2000 Census White headship rate.

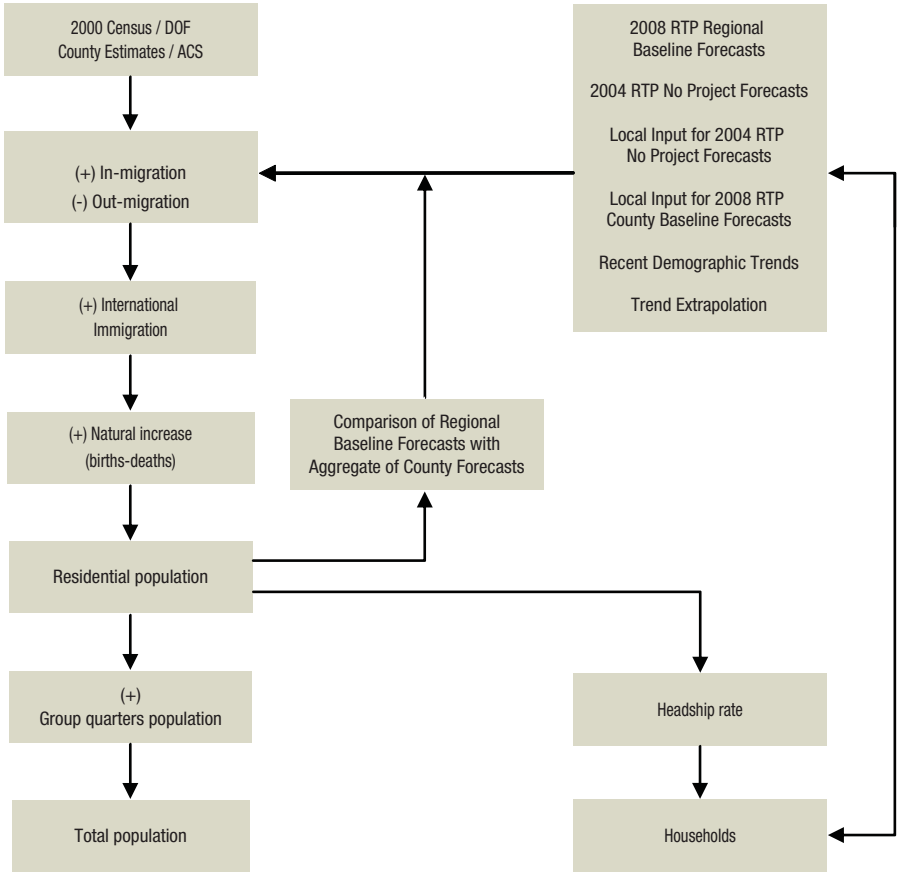
TABLE A7 HOUSEHOLD HEADSHIP RATE BY RACE/ETHNICITY, 2005 AND 2035

Race/Ethnicity	2005	2035
NH White	49%	49%
NH Black	47%	49%
NH Asian & Others	38%	41%
Hispanic	34%	36%
Total	41.4%	41.0%

COUNTY POPULATION AND HOUSEHOLD PROJECTION

Similar to the regional population and household projection, SCAG uses the cohort-component model and the headship rate to project the county population and households (see figure A2). The sum of county projections is compared to the regional independent projections. If results are significantly divergent, input data at the county level is adjusted to bring the sum of the counties projection and the regional independent projections more closely in line. Complete consistency between two projections is not mandatory. After analysis, the sum of counties constitutes the regional baseline projections.

FIGURE A2 COUNTY DEMOGRAPHIC FORECAST PROCESS



County Demographic Assumptions

Fertility and Mortality

If county birth rates by age and race/ethnicity are higher than the regional birth rates by age and race/ethnicity, then the county birth rates are converged towards regional birth rates by 100 percent in 2035. If county birth rates by age and race/ethnicity are lower than the regional birth rates by age and race/ethnicity, then the county birth rates are kept constant during the projection horizon. The regional survival rate by age, sex, and race/ethnicity is uniformly applied to all counties in the region.

Migration

International net immigration is determined using the annual average of international net immigration (1990-2005), including documented and undocumented immigrants. Domestic net migration, in particular, the county share of the regional domestic net migration, is determined by the historical trends of domestic net migration, projected regional domestic net migration, and subregional input. The race/ethnic distribution of domestic in- and out-migrants is developed by trending county distribution to projected race/ethnic change in the regional distribution. The race/ethnic distribution of net immigration is derived using the average of 2000 Census estimates and 2005 Pew Hispanic Center Estimate, and is assumed to remain constant during the projection horizon. Age-sex composition of domestic and international migrants is based on the 2000 Census.

The county migration model follows two regional modeling approaches: 1) cohort-component approach (birth, death, and net migration) and 2) two region gross migration model[3], but it emphasizes 1) the county allocation algorithm of net international and domestic migration instead of structural model, 2) the top-down approach. Net international and domestic migration by county is initially derived by allocating the regional net migration into counties using the historical trends (with different base periods). The derived net domestic migration is further disaggregated into in- and out-migration. The linkage of regional and county level migration projection modules are shown below (See figure 3A).[4]

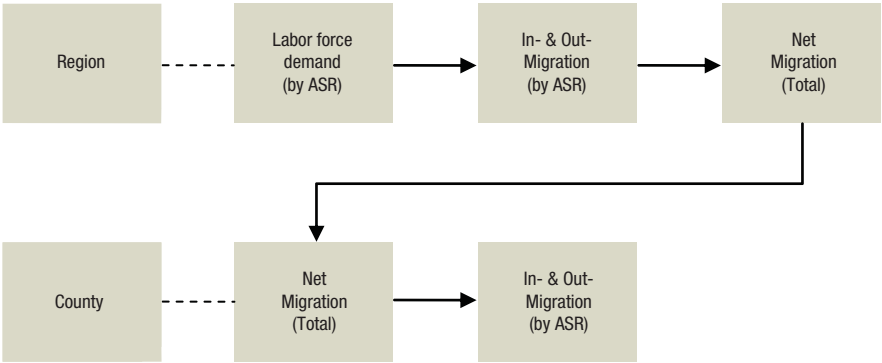
Headship rate

The county headship rate by age, sex, and race/ethnicity is developed by trending county headship rates in the base year to the projected rate change in the regional model.

[3] Isserman, A. (1993). *The Right People, The Right Rates: Making Population Estimates and Forecasts with an Interregional Cohort-Component Model. Journal of the American Planning Association*, 59, 45-64.

[4] Choi, S., and Cho, K. (2007 April). *A Gross Migration Optimization Technique of Developing In- and Out-Migration Assumptions for Regional Population Projections*. Paper presented at the Annual Meeting of Population Association of America, New York.

FIGURE A3 LINKAGE OF REGION AND COUNTY MIGRATION MODULES



Note: ASR = age, sex, and race/ethnicity

CITY POPULATION AND HOUSEHOLD PROJECTION

City Demographic Projection Model

The city level demographic projections are based on the housing unit method, which is one of the most widely used methods, to estimate local area households and population for planning purposes. The housing unit method consists of the following three projections of: households (occupied housing units), average household size, and group quarters population. Each of three components is projected into the future. The projected population in year t1 is expressed as follows:

$$POP_{t_1}^{city} = (HHLD_{t_1}^{city} * PPH_{t_1}^{city}) + Q_{t_1}^{ciity}$$

where

$POP_{t_1}^{city}$ = total population at the future year t_1

$HHLD_{t_1}^{city}$ = total households at the future year t_1

$PPH_{t_1}^{city}$ = the average persons per household at the future year t_1

$Q_{t_1}^{ciity}$ = the group quarters population at the future year t_1

The housing unit method is implemented in the following way.[5] First, households (occupied housing units) are projected by extrapolating the past trends of occupied housing units. The methodology for developing the occupied housing projection is a constrained extrapolation using stochastic simulation. It is found that the exponential provides the best fit to the historical data and provides the most plausible projection year values. Experimentation with the simulation also indicates that 10,000 simulated values produce stable projection estimates. The input data series can include up to 21 observations by combining information from the California Department of Finance E-5 series with enumeration-based values from the 1980, 1990, and 2000 censuses. The model parameters are estimated using the 21 observation series for each city.

Second, household (residential) population is estimated by multiplying occupied housing units (households) by the projected average household size. The average household size projection is problematic given the tension between expectations for a strong demographic component in the methodology and the lack of suitable data to support such a methodology. The so called 'state-of-the-art' for average household size projections tends to be very rudimentary at the city level.

Third, projected group quarters population is added to projected household population. The group quarters population is projected based on Year 2000 ratio of group quarters population to total population.

The preliminary projections of three components of the housing unit method are adjusted to control to the county projections. The housing unit method described above was originally applied to develop 2004 RTP city population and household trend projection. Once the city demographic trend projection is derived, diverse public outreach including local and subregional review and subregional workshops are used to reflect reasonable assumptions and acceptable trends.

[5] Sweeney, S. (2003). Population and Household Projection Methodology for Cities and Subregions. *Destination 2030 - Draft 2004 Regional Transportation Plan Technical Appendix*, Southern California Association of Governments, Los Angeles. Retrieved on March 10, 2008 http://www.scag.ca.gov/rtp2004/2004/techappendix/AppendixA_GrowthFore.pdf.

City Demographic Assumptions

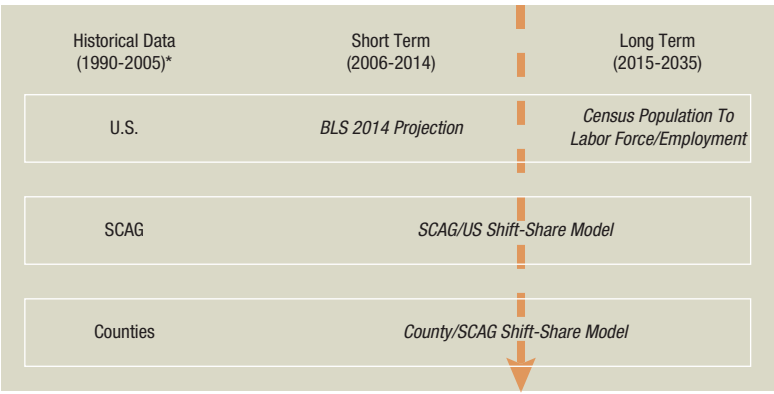
The trend extrapolations of households do consider anything beyond historical trends in the data. Institutional constraints, land constraints, and build-out scenarios from general plans are not considered in the trend projection. The development constraints, however, are eventually reflected in the process of developing the small area forecast. Average household size values are assumed to range from 1.2 to 5.5. These bounds of household size values are determined by expert opinion.

EMPLOYMENT FORECAST METHODOLOGY AND ASSUMPTIONS

The SCAG regional employment growth forecast is developed using a top down procedure from the national population and employment forecast to the region, county, and city level employment forecast.

REGIONAL EMPLOYMENT PROJECTION

FIGURE A4 EMPLOYMENT FORECAST FRAMEWORK



Shift-Share Model

Regional employment is projected using the shift-share model. The shift-share model is widely used because it is conceptually and computationally straightforward, requires only easily accessible data, and provides fast and reasonably accurate projections, given its costs. The model computes employment at a future point in time using a regional share of the nation's employment.

$$EMP_{t_1}^{region} = EMP_{t_0}^{region} + (EMP_{t_0-t_1}^{nation} * SHARE_{t_a-t_b}^{region})$$

$$SHARE_{t_a-t_b}^{region} = EMP_{t_a-t_b}^{region} / EMP_{t_a-t_b}^{nation}$$

where

$EMP_{t_1}^{region}$ = regional employment at the future year t_1

$EMP_{t_0}^{region}$ = regional employment at the base year t_0

$EMP_{t_1}^{nation}$ = national employment at the future year t_1

$SHARE_{t_a-t_b}^{region}$ = a regional share of the nation's employment during the interval $t_a - t_b$

National Employment Projection Model

The national employment projection is used as an input to calculate the regional employment with the assumption of the regional share of the national employment. The US Bureau of Labor Statistics (BLS) releases the short-term national employment projection in November 2005. The most recent national employment projections cover 2004-2014. SCAG develops its own long-term national employment projection 2005-2035 using the most recent US BLS employment projections, US Census population projections, and key socioeconomic assumptions including labor force participation rates, unemployment rates, and the ratio of jobs to workers.

The national employment projection is derived using the following procedure:

$$JOB_{t_1}^{nation} = POP_{t_1}^{nation} * LFPR_{t_1}^{nation} * (1 - UNEMP_{t_1}^{nation}) * (1 + DJR_{t_1}^{nation})$$

where

$JOB_{t_1}^{nation}$ = national employment at the future year t_1

$POP_{t_1}^{nation}$ = national population at the future year t_1

$LFPR_{t_1}^{nation}$ = national labor force at the future year t_1

$UNEMP_{t_1}^{nation}$ = national unemployment rate at the future year t_1

$DJR_{t_1}^{nation} = (JOB_{t_0}^{nation} / WRKR_{t_0}^{nation} - 1)$ = the national double job rate at the future year t_1

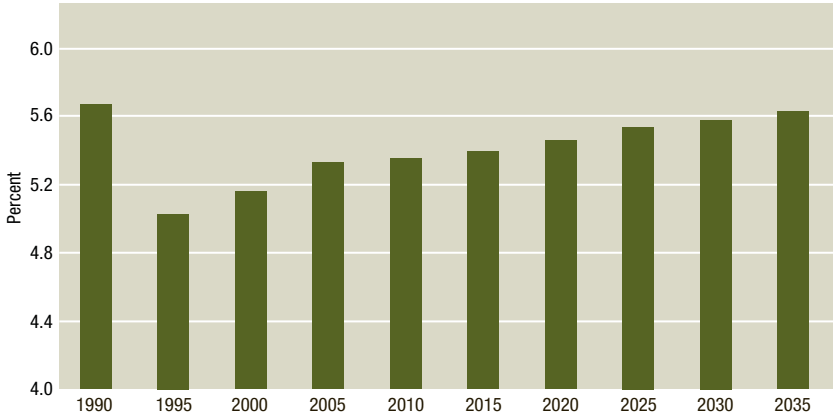
Key Regional Model Assumptions

Since the 2004 RTP growth forecast, the US Census Bureau released interim projections of the U.S. population by age, sex, race, and Hispanic origin in March 2004 and the US BLS updated labor force participation rate projections. SCAG developed the following key national socioeconomic assumptions for the national employment projection: the implied unemployment rate, the double job rate and the labor force participation rate. The implied unemployment rate is determined at 5.2% using the ten year average of 1995 and 2005. The unemployment rate remains constant during the projection horizon. The double job rate is set at 5.3% using the 2006 BLS estimate. SCAG adjusted the US BLS labor force participation rate of older age cohorts (55+) upward to reflect the behavioral change of those older age cohorts associated with the retirement of baby boomers and lack of skilled labor force.

Regional Share of National Employment

The regional share of national employment is developed by extrapolating the historical pattern of the regional share. Since there was an economic recession in the early 1990s, the regional share of national employment decreased from 5.7% in 1990 to 5.0% in 1995. After 1995, the region continues to increase its share of national employment. The most recent regional share of national employment was around 5.3% in 2005. SCAG expects that the regional share will increase to 5.5% in 2014, and maintains that share (5.5%) between 2014 and 2035.

FIGURE A5 THE REGIONAL SHARE OF NATIONAL EMPLOYMENT, 1990-2035



Regional Industry Projection Model

Regional employment of industry sectors is projected using the shift-share model. Employment projections are made for 20 major industry sectors classified by North American Industry Classification System (NAICS). The industry sectors include 1) Total Farm, 2) Natural Resources and Mining, 3) Utilities, 4) Construction, 5) Manufacturing, 6) Wholesale Trade, 7) Retail Trade, 8) Transportation and Warehousing, 9) Information, 10) Finance and Insurance, 11) Real Estate and Rental and Leasing, 12) Professional, Scientific and Technical Services, 13) Management of Companies and Enterprises, 14) Administrative and Support and Waste Services, 15) Educational Services, 16) Health Care and Social Assistance, 17) Arts, Entertainment, and Recreation, 18) Accommodation and Food Service, 19) Other Services, and 20) Public Administration. The model computes the employment in industry sector *"i"* at a future point in

time by using a regional share of the nation's employment in industry sector *"i"*.

$$EMP_{t_1}^{region_i} = EMP_{t_0}^{region_i} + (EMP_{t_0-t_1}^{nation_i} * SHARE_{t_a-t_b}^{region_i})$$

$$SHARE_{t_a-t_b}^{region_i} = EMP_{t_a-t_b}^{region_i} / EMP_{t_a-t_b}^{nation_i}$$

where

$EMP_{t_1}^{region_i}$ = regional employment in industry sector i at the future year t_1

$EMP_{t_0}^{region_i}$ = regional employment in industry sector i at the base year t_0

$SHARE_{t_a-t_b}^{region_i}$ = a regional share of the nation's employment in industry sector i during the interval $t_a - t_b$

Once regional employment is established, SCAG further develops the regional industry projection using six different "share" methods of projecting the share of each industry sector of total regional employment: 1) change in share of growth, 2) constant share of growth delta, 3) average share, 4) constant share of regional employment in 2005, 5) population growth, and 6) simple regression. The best method is selected among six methods through the statistical test. This approach is applied to the period of 2005-2014. The 2014 constant share approach is used to develop the share of each industry sector between 2014 and 2035.

The following is a brief discussion of the first five methods of calculating the regional share of national employment by industry sector using year 2014 as a projection year.

Change in Share of Growth

The regional employment projection is based on the assumption that the industry sectors' share of the regional employment will increase its share by 50 percent of the annual average share of change from the period of 1994 and 2005 (or 1990-2005) for the target year 2014.

Two different base periods are used to compute the industry sectors' share of the regional employment. This method is applied to the following industry sectors: 1) Total Farm (1994-2005), 2) Utilities (1990-2005), 3) Wholesale Trade (1994-2005), 4) Finance and Insurance (1990-2005), 5) Arts, Entertainment, and Recreation (1994-2005), and 6) Accommodation and Food Service (1994-2005). The regional employment projection in selected industry sector i for year 2014 using the base periods of 1994 and 2005 is calculated as follows:

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{region} * A(SHARE_{t_{1994}-t_{2005}}^{region_i})$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / EMP_{t_{1994}-t_{2005}}^{region}$$

where

$EMP_{t_{2014}}^{region_i}$ = regional employment in industry sector i in 2014

$EMP_{t_{2014}}^{region}$ = regional employment in 2014

A= change in share

$SHARE_{t_{1994}-t_{2005}}^{region_i}$ = a regional share of the nation's employment in industry sector i during the interval $t_{1994} - t_{2005}$.

Constant Share of Growth Delta

The regional employment projection is based on the assumption that the regional employment growth in industry sectors will maintain a constant share of the national employment growth in industry sectors. Two different growth periods (1994-2005 and 1990-2005) are used as a base period. This method is applied to the following industry sectors: 1) Manufacturing (1990-2005), 2) Transportation and Warehousing (1994-2005), 3) Information (1990-2005), and 4) Professional, Scientific and Technical Services (1994-2005). The regional employment projection in selected industry sector i for year 2014 using the base periods of 1994 and 2005 is calculated as follows:

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{nation_i} * SHARE_{t_{1994}-t_{2005}}^{region_i}$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / EMP_{t_{1994}-t_{2005}}^{nation_i}$$

where

$EMP_{t_{2014}}^{region_i}$ = regional employment in industry sector i in 2014

$EMP_{t_{2014}}^{nation_i}$ = national employment in industry sector i in 2014

$SHARE_{t_{1994}-t_{2005}}^{region_i}$ = a regional share of the nation's employment in industry sector i during the interval $t_{1994} - t_{2005}$.

$EMP_{t_{1995-2005}}^{region_i}$ = growth of regional employment in industry sector i between 1994 and 2005

$EMP_{t_{1995-2005}}^{nation_i}$ = growth of national employment in industry sector i between 1994 and 2005

Average Share

The regional employment projection is based on the annual average share of the regional employment in industry sectors between 1995 and 2005. The historical average share methodology is normally used when the industry job share has been relatively constant, the change in share method is not suitable, and it is reasonable to assume that the regional share will not change. It is normally assumed that the historical average share will continue because there is rarely specific information to the contrary. This method is applied to Natural Resources and Mining.

Constant Share of Regional Employment in 2005

The regional employment projection is based on the assumption that the 2005 regional employment in industry sectors will maintain a constant share of 2005 total regional employment. This method is applied to the following industry sectors: 1) Real Estate and Rental and Leasing 2) Management of Companies and Enterprises, and 3) Administrative and Support and Waste Services. The regional employment projection in industry sector i for year 2014 is computed as follows:

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2014}}^{region} * SHARE_{t_{2005}}^{region_i}$$

$$SHARE_{t_{2005}}^{region_i} = EMP_{t_{2005}}^{region_i} / EMP_{t_{2005}}^{region}$$

where

$EMP_{t_{2014}}^{region_i}$ = regional employment in industry sector i in 2104

$EMP_{t_{2014}}^{region}$ = total regional employment in 2010

$SHARE_{t_{2005}}^{region}$ = a regional share of the nation's employment in industry sectors indicated above in 2005

$EMP_{t_{2005}}^{region_i}$ = regional employment in industry sector i in 2005

$EMP_{t_{2005}}^{region}$ = total regional employment in 2005

Population Growth

The regional employment projection in some industry sectors is related to population growth. The projection of non-basic (population servicing) industries is based on population growth. One growth period (1994-2005) is used as a base period. This method is applied to the following industry sectors: 1) Construction, 2) Educational Services, 3) Health Care and Social Assistance, 4) Other Services, and 5) Public Administration. The regional employment projection in a selected industry sector i for year 2014 using the base period of 1994 and 2005 is calculated as follows:

$$EMP_{t_{2014}}^{region_i} = EMP_{t_{2005}}^{region_i} + POP_{t_{2005-2014}}^{region} * (SHARE_{t_{1994}-t_{2005}}^{region_i})$$

$$SHARE_{t_{1994}-t_{2005}}^{region_i} = EMP_{t_{1994}-t_{2005}}^{region_i} / POP_{t_{1994}-t_{2005}}^{region}$$

where

$EMP_{t_{2014}}^{region_i}$ = regional employment in industry sector i in 2014

$EMP^{region_i}_{t_{2005}}$ = regional employment in industry sector i in 2005

$POP^{region}_{t_{2005-2014}}$ = regional population growth between 2005 and 2014

$EMP^{region_i}_{t_{1994-2005}}$ = regional employment in industry sector i between 1994 and 2005

$POP^{region}_{t_{1994-2005}}$ = regional population growth between 1994 and 2005

Base Year Employment Estimates

Total employment for the base year (2003) is estimated based on a) Wage & Salary employment from California Employment Development Department (EDD), and b) Self-employment estimates. Total employment is estimated by each of 20 industries based on NAICS.

CA EDD revises wage & salary employment estimates according to detailed tax records. Tax record data are used through March of previous year; therefore, the revision is referred to as the March Benchmark. On March 4, 2005, CA EDD released March 2004 Benchmark data

Self-employment is calculated using the self-employment rate, and wage and salary employment data. Self-employment rate is the share of self-employment to total employment. The SCAG regional self-employment rate is estimated at 8.3%, which derived from the 2000 US PUMS data.

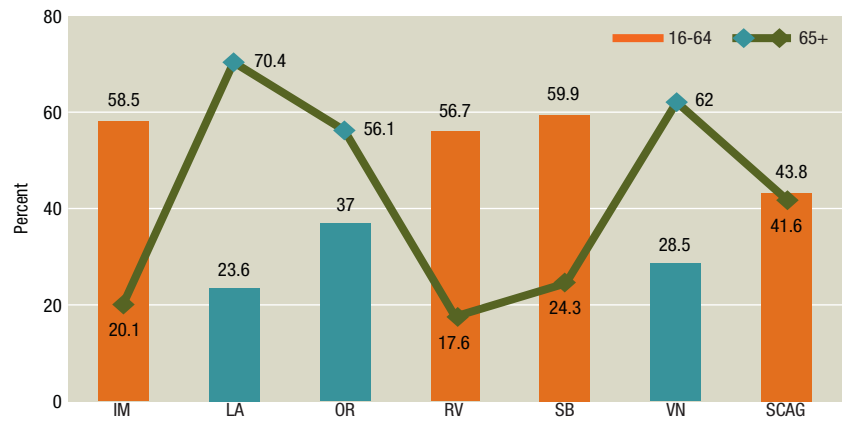
COUNTY EMPLOYMENT PROJECTION

As used in the regional employment projection, SCAG uses the shift-share model to project county employment. The county industry projection also uses six different methods of projecting the share of each industry sector of total county employment: 1) change in share of growth, 2) constant share of growth delta, 3) average share, 4) constant share of regional employment in 2005, 5) population growth, and 6) simple regression. The best method is selected among the six methods through the statistical test.

Aging trends are incorporated in developing the county employment forecast. Due to significant aging trends, the future growth of the working-age population (16-64) will be lower than that of the older population for Los Angeles, Orange, and Ventura, which will directly affect the growth of the labor force for those counties. For the Inland Empire and Imperial County, the growth of working-age population will be larger than the elderly population.

Figure A6 shows a projected age composition of population growth between 2000 and 2035. For example, Los Angeles, Orange, and Ventura counties show a relatively higher share of the elderly people, while Imperial, Riverside, and San Bernardino Counties show lower share of the elderly people during the same period.

FIGURE A6 AGE COMPOSITION OF POPULATION GROWTH BETWEEN 2000 AND 2035



With the impacts of national job growth, different county levels of aging trends will affect the relative growth of the working age population, which will in turn affect the relative "competitiveness" of each county in competing for the regional job growth.

Upon testing the relationship between job growth and labor force growth, it was found that slower growth in working age population does statistically

result in slower job growth. Thus employment growth and shares of regional jobs in Los Angeles, Orange, and Ventura Counties are projected to slow down further, more than the historical trends. On the other hand, jobs in Imperial County and the Inland Empire are projected to grow faster than growth suggested by historical trends.

CITY EMPLOYMENT PROJECTION

City level employment by industry sector was traditionally estimated using private and public sources including Dun & Bradstreet, InfoUSA, and California EDD. For the 2008 RTP, SCAG planned to use ES202 (or the Quarterly Census of Employment and Wages (QCEW)) for city level employment estimates. ES202 data include wage and salaried employees based on quarterly tax reports submitted to CA EDD by California employers. ES202 data, electronically delivered to SCAG staff by CA EDD staff, did not match the CA EDD County employment estimate. There was a difference of 1 million jobs between ES 2020 and EDD benchmark database.

SCAG used the US Census Transportation Planning Package (CTPP) 2000 for the city level employment estimates and projection. CTPP is intended to survey transportation planning activities of workers. CTPP part 2 provides information of workers by place of work at both city and block group levels. CTPP is based on large sample (1 in 6 households). There might be an undercount issue. Between 1990 and 2000, regional employment increased by 7%, while CTPP data showed a 1% reduction. Employment distribution has an implication for trip attractiveness, truck model, and housing. CTPP data was used as a basis to distribute employment to cities. In the long-term ES202 data will continue to be evaluated.

City level employment projections are based on the constant-share method. The industry sectors of each city within a county are assumed to maintain the 2000 constant share of the county employment in the specific industries.

$$EMP_{t_{2014}}^{city_i} = EMP_{t_{2014}}^{county_i} * SHARE_{t_{2000}}^{cty}$$

$$SHARE_{t_{2000}}^{city_i} = EMP_{t_{2000}}^{city_i} / EMP_{t_{2000}}^{county_i}$$

where

$EMP_{t_{2014}}^{city_i}$ = city employment in industry sector i in 2014

$EMP_{t_{2014}}^{county_i}$ = county regional employment in industry sector i in 2014

$SHARE_{t_{2000}}^{city_i}$ = a city's share of the county's employment in industry sectors in 2000

$EMP_{t_{2000}}^{city_i}$ = city employment in industry sector i in 2000

$EMP_{t_{2000}}^{county}$ = county employment in industry sector i in 2000

SMALL AREA FORECAST METHODOLOGY AND ASSUMPTIONS

Small area baseline socioeconomic projections refer to the most likely growth distribution of population, household, and employment at small geographical area levels without any explicit regional policies. The base year is 2003 and the projection horizon is 2005-2035 in five year increments. The small area geographies include SCAG's Traffic Analysis Zones (TAZ) and US Census Tracts (CT). The small area baseline projection is primarily based on the small area local input projection from local jurisdictions through SCAG's extensive local review and input process. The small area baseline projection captures demographic trends, existing land uses, and general plan land use policies and is controlled to city, county and regional baseline projections. Different methodologies have been applied to project total population, household, and employment in the target year (2035) and in the intermediate years (2005-2030 in five year increments).

2035 SMALL AREA PROJECTION

Over the past several years, SCAG embarked on a very extensive growth forecasting outreach process soliciting local review/input on small area distribution of projected future growth. The small area level input submitted by local jurisdictions varies substantially from jurisdiction to jurisdiction. For those local jurisdictions that have provided complete small area level input, their 2035 small area population, household, and employment projections form the 2035 small area baseline projection for these jurisdictions.

For all the other jurisdictions that did not provide complete small area level input, the 2035 small area baseline projection is developed by utilizing the 2000 Census distributions and integrating the small area local input with the 2008 RTP small area trend projection. The 2008 RTP small area trend projection represents an update to 2004 RTP small area trend projections. As a result, the fundamental methodology remains the same.

Household Projection

The first step is to project target year single households (SDOs). This is done by comparing small area 1990 to 2000 growth in SDOs with their city's growth in SDOs for the same period. SCAG applies that same relationship to the cities' base year to target growth to infer each small area share of that growth. This target year small area projection is averaged with prior RTP projections for the same small area to get a final projection. These projections are adjusted to make sure they are consistent with the city's forecast.

The next step is to project target year total households by first estimating each small area's percentage of single households. This is done by using the base year small area's single percentage compared to the city's. This relationship is then applied to the city's target year single percentage to get the small area's target year percentage. Once the small area's total target year single households and single percentage have been projected, SCAG calculates the total household projection by dividing the single projection by the single percentage.

The third step is to incorporate regionally significant Inter-Governmental Review (IGR) projects. Specifically, for small areas where an IGR project is located, a minimum household projection is set for each small area based on the number of housing units that will be developed in that small area.

The final step is to normalize the small area household projection to meet the city, county, and regional level household projections.

Population Projection

Similar to the household projection method, the first step is to project target year residential population based on projected small area household size and the projected target year small area household. SCAG calculates the target year household size by applying the base year ratio of small area to city household size to the city's target year household size.

The second step is to project target year group quarter populations (GQP). The following assumptions are made about group quartered population projections: no changes in military bases (closings or new construction), no new prisons, jails, or mental hospitals will be built, and, no new major universities or colleges (except CSU, Channel Islands). The target year group quartered population is calculated by applying the small area's base year share of the city's GQP to the city's target year projection. The target year small area total population is simply the sum of the residential population and the GQP.

The third step is to incorporate regionally significant Inter-Governmental Review (IGR) projects. Specifically, for small areas where an IGR project is located, a minimum population projection is set for each small area based on the number of projected households that will reside in that small area due to the project.

The final step is to normalize the small area population projection to meet the city, county and regional level population projections.

Employment Projection

Similar to the household projection method, the first step is to project target year service employment, using a mix of the small area's share of the city's service employment, in the base year and the previous RTP's target year. This share is applied to the city's target year projection of service jobs.

The next step is to project the percent of service employment to total employment applying the same method as was done for percentage of single households. Given these two projections, total employment can be calculated by dividing the service employment by the percent of service employment.

The third step is to incorporate regionally significant Inter-Governmental Review (IGR) projects. Specifically, for small areas where an IGR project is located, a minimum employment projection is set for each small area based on the number of forecasted jobs that will be created by the development project.

The final step is to normalize the small area employment projection to meet the city, county and regional level employment projections.

SMALL AREA PROJECTION - INTERMEDIATE YEARS

It is assumed that the small area growth pattern in all intermediate years as compared to the 2003-2035 small area growth will follow the city growth pattern. For example, if a city reaches twenty percent of its 2003 to 2035 growth by 2010, all the small areas within the city will also reach the same twenty percent of their corresponding small area 2003 to 2035 growth by 2010. Based on this assumption, an interpolation method, the city-growth-share method[6], has been applied to forecast 2005-2030 household, population, and employment in five year increments.

The city-growth-share method ensures consistent trends at small area levels between intermediate years and 2003-2035. The method also guarantees that all the intermediate year projections meet their respective city, county, and regional controls.

Local Survey

SCAG relies on local jurisdictions to update socioeconomic estimates and forecast at the small area level. The updated zoning and general plan of each jurisdiction play a key role in adjusting the current small area growth forecast. In April 2005, SCAG sent out a letter requesting assistance from local jurisdictions to get updated land use and development information for developing the 2008 RTP integrated growth forecast. SCAG made adjustments to the existing small area estimates and forecast, as the updated information was submitted by local jurisdictions. The updated information includes land use change, approval of regional significant development projects unknown in 2002, update of general plans or specific plans since 2002, change of zoning standards, or revision of build-out capacities.

Expert Review

The 2008 RTP Integrated Growth Forecast process is driven by a principle of collaboration between SCAG, subregions, local jurisdictions, county transportation commissions, and other major stakeholders throughout the region. The Plans & Programs Technical Advisory Committee (P&P TAC) assisted in the process by providing technical input; Policy Committees of the Regional Council were periodically informed of progress and provided direction to the program through the actions they take.

An organized forecasting decision making process is required to develop a consensus regional growth forecast in an efficient, fair, and open manner. Those involved in the forecasting process to build consensus included: a panel of forecasting experts, subregions, local workshops, stakeholders, data users and researchers, technical committees, policy committees, and the Regional Council.

[6] Choi, S., (2002, November). *Maintaining the Spatial and temporal Consistency of Small Area Population Forecasts Using the Multi-Period Share of Growth Method*. Paper presented at the 44th Annual Association of Collegiate Schools of Planning, Baltimore, Maryland.

In May 2006, a Panel of Experts reviewed SCAG's 2007 Integrated Growth Forecast methodology, procedure, and results. The panel concluded and suggested that:

- Policy components are needed, even in the case of the Baseline forecast. The baseline numbers cannot stand alone; the region must concentrate on how policy supports and affects future forecasts. These policies must be explicit and easily identifiable.
- The regional employment forecast may be conservative, especially if the region could adopt effective policies that boost economic growth. Panel members sought a better understanding of the types of jobs associated with the employment forecast for the SCAG region.
- Housing and jobs are inextricably linked. The region, or subregions, will not achieve the robust job growth without housing production to match. Jobs will relocate to areas with housing either within the region or to other regions.
- The demographics, from the success of 2nd and 3rd generation immigrants and the associated positive changes in their socioeconomic status could have large impacts on household formation and housing demand.
- In the first half of 2007, the Panel of Experts met twice to further discuss and provide input on:
  - The policy implications of technical forecasts, structure change of the economy and demographics, and impacts on growth forecasts
  - Best practice frameworks and procedures in conducting the policy forecast
  - Effective ways to communicate with subregions and local jurisdictions regarding policy impacts, policy forecasts (growth numbers), and regional growth policies and implementation instruments.

Local Input of Growth Distribution

Local jurisdictions were consulted for input regarding growth as part of the forecasting methodology. The following local input was used in developing the county and small area distribution of the forecast for the Baseline scenario:

- Imperial County: The 2035 consensus total population, household, and employment growth projections at traffic analysis zone (TAZ) and city levels were agreed upon by SCAG, IVAG, and Caltrans District 11.
- Los Angeles County: The 2035 total population, household, and employment growth projections at census tract and city levels provided by subregions and cities.
- Orange County: The Adopted 2006 OCP 2035 total housing and employment projections at census tract, city, and county levels as submitted by OCCOP.
- Riverside County: The 2006 RCP 2035 total population, household, and employment projections at census tract, city, and county levels provided by Riverside County Transportation and Land Management Agency (RCTLMA). This agency collected city level/census tract level input from local jurisdictions in Riverside County as agreed upon by RCTLMA, WRCOG, and CVAG.
- San Bernardino County: The 2035 household and employment projections at census tract, city, and county levels provided by SANBAG.
- Ventura County: The 2035 total population, household, and employment growth projections at census tract and city levels provided by VCOG.