Appendix O   Population, Housing, and Employment Methodology

Population, Housing, and Employment Methodology

This appendix describes the data sources and methodologies employed in the identification of EIR Existing Conditions and Future Projections, both of which are used to assess potential impacts of a Proposed Plan. The section also explains how Proposed Plan reasonably expected development is derived and how the Proposed Plan addresses anticipated growth.[1]

The EIR evaluates the potential environmental impacts related to anticipated changes in population, housing and employment based upon information from a variety of sources including, the United States Census Bureau (U.S. Census), California Department of Finance (DOF), the California Employment Development Department (EDD), the Southern California Association of Governments (SCAG), the City of Los Angeles Department of City Planning (DCP), the City of Los Angeles General Plan Framework Element (Framework), and associated documents. Since each of these sources may use different methods of data collection and analysis and/or different timeframes, the data does not always arrive at precisely the same results. Accordingly, the demographic data used in the analysis may vary somewhat, depending upon the source cited. Despite the variations, the data used in the EIR represent the best data sources available at the time the City conducted the environmental analysis and provide a reasonable description of the population, housing, and employment characteristics of a Community Plan Area (CPA).

Existing Conditions

Existing Conditions, or Baseline Conditions for the purposes of environmental analysis of a community plan update, can be described in demographic terms (population, housing, and employment) or in terms of development characteristics (square feet of development, height of structures, or number of housing units). The City has the discretion to determine the best data source for Existing Conditions. For Existing Conditions, DCP, as the City's professional planning agency and the department responsible for reviewing and preparing the EIR, uses demographic data that is published and referenced public data used by multiple agencies in planning for the City and region. Obtaining accurate development characteristics at the parcel level for each Community Plan Area has in recent decades become possible through geographic information systems (GIS), however the technology still presents practical difficulties in verifying precise, detailed data at the parcel level for CPAs for a city the size of Los Angeles. Whereas smaller jurisdictions are able to rely on County Assessor data for parcel level data, the size of the city at over 469 square miles results in duplicate, incomplete, and/or unverified data that is time and cost prohibitive to verify at present.

The leading source of demographic data is the U.S. Census. While Census data is typically the most reliable representation of socio economic data for discrete geographic areas, it is only available on a decennial basis, i.e., 2000, 2010, and 2020. Census data is generally considered the most accurate source for demographic data, however, it is subject to sampling variability. While it is preferable to utilize Census data for analysis, it is not always possible to align the timing of planning processes with the release of Census data.

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[1] Nothing in this is intended to contradict or control the particular data or methodology used in the EIR. This methodology was developed by DCP in its review and preparation of EIRs for the Community Plan Update program and is provided in the appendices to supplement and support the EIR.

SCAG, as the Regional Transportation Planning Agency (RTPA) and Metropolitan Planning Organization (MPO) publishes demographic estimates and projections through the long-range transportation plan (RTP), developed and updated by SCAG every four years. The RTP provides a vision for transportation investments throughout the region. Using demographic growth forecasts and economic trends that project out over a 20-year period or "horizon," the RTP considers the role of transportation in the broader context of economic, environmental, and quality-of-life goals for the region.

Baseline Existing Conditions

SCAG is the regional demographer for a six-county region that includes LA County. In that capacity, it has an established methodology for estimating regional population, housing, and employment for the region, as well as projecting future population, housing, and employment at a citywide level. SCAG uses Census data, which it adjusts using California Department of Finance data, to determine existing or baseline population, housing and employment. This method is used to derive annual estimates of population, housing, and employment for years that are not a census year.

At the city level, SCAG estimates occupied housing units by extrapolating past trends of occupied units from a number of different data sources then estimates persons per household and multiplies the units by the persons per household (PPH) (which is tailored by geography) to get a subtotal of the population. The proportion of group quartered population to total population of prior census year are added to get the total population.

Data for each city includes California Department of Finance enumeration-based values from the 1980, 1990, and 2000 censuses. The trend extrapolations do not consider anything beyond historical trends in the data. Institutional constraints, land constraints, and build-out scenarios from general plans are not considered in the estimate. Average household size projections tends to be very rudimentary at the city level. A constrained trend extrapolation of the average household size values is used. See the following SCAG publications for the methodology employed to determine annual estimates of population, housing, and employment data:

- http://rtpscs.scag.ca.gov/Documents/2004/2004RTPAppendix_A_final.pdf
- http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_GrowthForecast.pdf

DCP has regularly tracked growth and development activity in the city. Approximately every four years, as part of the regional planning process, local planning departments (including DCP) work together with SCAG to develop population projections for the City of Los Angeles and the Southern California region. SCAG publishes regional transportation plans (RTP) every four years, with the 2016 RTP being the most recently published. However, the cycles of RTP preparation do not regularly coincide with the release of Census data. Because of the time involved in preparing the RTP, there is a lag between the times the Census data is released or population estimate is prepared and the time that the RTP makes population estimates available. An additional lag occurs between the time the Planning Department receives SCAG's population estimates for the baseline and horizon year, and the time a draft community plan and EIR are completed.

Although CEQA does not require a lead agency to change the baseline year for EIR analysis every time a government agency at the state, federal, or local level issues a projection for a future condition or issues an estimate for those years subsequent to the EIR baseline year, the DCP does review new data or projections

released subsequent to the publication of the NOP to verify that it would not substantively affect the analysis or conclusions for significant impacts that are correlated or reliant upon population, housing or employment data.

For the San Pedro Community Plan Update, the 2005 Census estimate derived from SCAG 2004 RTP with a corresponding horizon year of 2030 was used as the baseline existing conditions as the 2010 Census was not available at the time of the NOP. The baseline year of 2005 falls within the decennial census year of 2000 and 2010; therefore, no physical count of the population and housing units of the San Pedro CPA was available for the NOP year. The 2005 population and housing units were a reasonable estimate at the time the proposed project was initiated. However, during the preparation of the Proposed Plan and draft EIR, the 2010 Census was conducted and the results were released in April 2011 after the date of the NOP (2008). Because the DCP's planning process for the community plan updates is extensive and comprehensive, the updates are long-term projects that take several years to complete. The planning process focuses on addressing land use changes at the parcel level to both resolve inconsistencies in land use regulations as well as to fulfill NCP Program objectives. In addition to the detailed technical background work, the planning process was conducted with extensive public outreach and public input. As a result of this on-going and iterative process, sufficient time had elapsed such that the 2010 Census became available. After a review of the 2010 Census data, it was determined that the 2005 Census estimate remained the best available representation of existing conditions at the time the analysis for this EIR was prepared.[2]

Future Projections

The San Pedro Community Plan is intended to plan for anticipated growth by 2030 (the planning horizon year), and consequently uses the 2004 SCAG RTP as a resource for both the Baseline (also called Existing Conditions) population, housing and employment estimates and the future projections. SCAG projects sub-county demographic trend projections using the housing unit method, which is one of the most widely used methods for estimating and projecting local area households and population for planning purposes. Projections are completed using the cohort-component model for the regional level; for the sub-county the following apply:

- **Population projection methodology**—The model computes the population at a future point in time by adding to the existing population the number of group quartered 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 area in 5-year intervals.

- **Housing projection methodology**—SCAG projects households (occupied housing) by multiplying the population projection (minus the group quartered population) by the headship rate or the proportion of that population that is expected to form a household (projected in 5-year intervals).

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[2] During the preparation of the San Pedro Community Plan Draft EIR the 2004-2030 RTP was the most recent adopted RTP/SCS available. The 2016-2040 RTP/SCS was adopted April 7, 2016, after the analysis in the Draft EIR was completed. The 2016-2040 RTP/SCS has been reviewed to determine if there are any substantial differences in policy and/or growth trends associated with the socioeconomic data as compared to the 2012-2035 RTP/SCS. Based on this review it has been determined that the minor refinements in policy and associated updated socioeconomic data in the 2016-2040 RTP/SCS would not substantially affect the analyses or conclusions of this EIR. While the SCAG transportation model itself is still not available, SCAG staff indicates that changes to the network and associated calculations are minor. Additionally, SCAG staff indicates that the methodology used in both the 2004-2030 RTP and 2016-2040 RTP/SCS reports are generally consistent. Plans begun in 2008 utilized SCAG 2008 RTP with a corresponding horizon year of 2035. Plans begun after 2010-12 would be able to utilize the 2010 Census for Existing Baseline with a corresponding horizon year of 2035; plans beginning later would determine whether to use 2010 Census or 2016 RTP for the Baseline.

■ **Employment projection methodology**—SCAG links population dynamics to economic trends, examining labor force supply and demand to develop employment projections. Supply is derived by multiplying population by projected labor force participation rates. Demand is developed by converting the jobs to workers using the double job rate and applying the ideal unemployment rate and factoring out the number of people holding two or more jobs.

After deriving the regional projections using its published methodology, SCAG allocates to each city its share of the regional growth, providing each city with a citywide projection for population, housing, and employment. At the citywide level, these projections are largely based on past trends. SCAG and DCP then distribute the total citywide number among all of the city's census tracts and Transportation Analysis Zones (TAZ), again derived from past trends and building upon TAZ projections of previous adopted Regional Transportation Plans. This local feedback provides further input based on the effects of local policymaking, such as General Plan or Community Plan updates, and the mandates of federal and state regulations, and results in a refinement of the demographic projections by Census Tract/TAZ numbers.

SCAG Projections

The long-standing policy of the City of Los Angeles is to accommodate SCAG projections in its long-range planning efforts. SCAG provides the demographic expertise in developing projections and works with the DCP planners and demographers to refine those projections and their distribution throughout the city, as described previously. Community Plan updates aim at minimum to meet SCAG projections for the city and each CPA and in some cases may exceed those projections for certain CPAs depending on changed circumstances such as market demand, trends, the introduction of transit or other infrastructure, etc. In this respect, SCAG projections are viewed as targets, and DCP ultimately determines the distribution of citywide growth through adherence to the General Plan Framework and Community Plans while the citywide projections are being accommodated.

Community Plan area projections are derived by summing up the Census Tracts or TAZs that comprise each of the CPAs. It is generally assumed that all CPAs continue to grow consistent with SCAG assumptions for approximately 1% growth across the region and would still need to accommodate at least marginal levels of growth (i.e., it was not assumed that any CPAs would have less population than current existing conditions levels). Table O-1 (Population Projections by CPA Geography) compares the allocations by geographies for 2005 and its horizon year 2030. The source is SCAG RTP 2004 for the Baseline and 2030 Population Projection. The total 2030 Population Projection has been adjusted upward to match the Framework objectives and to account for anticipated growth in the Central CPAs.

Table O-1		Population Projections by CPA Geography				
Area	Population 2005	% of Citywide 2005 Population	Projected Population 2030 Adjusted	% of Citywide 2030 Projected Population	Difference 2030–2005	Citywide Growth Distribution (2005–2030)
City of Los Angeles	3,947,712	100%	4,320,975	100%	373,263	100%
Central	705,843	18%	823,229	19%	117,386	31%
East Los Angeles	432,053	11%	448,912	10%	16,859	5%
West Los Angeles	427,770	11%	473,615	11%	45,845	12%
Harbor	203,675	5%	211,145	5%	7,470	2%
South Los Angeles	730,322	19%	793,688	18%	63,366	17%
South Valley	752,478	19%	810,382	19%	57,904	16%
North Valley	695,571	18%	760,003	18%	64,432	17%

SOURCE: 2004 RTP. The 2030 projected population is based on SCAG's 2004 RTP. DCP adjusted the 2030 projected population to implement the Framework Element of the General Plan. The total 2030 projected population for the city was slightly increased from SCAG. Totals may not sum to 100% due to rounding.

Calculating Plan Reasonable Expected Development

Separate from the demographic projections is the calculation of the Reasonable Expected Development of a Community Plan, or what is expected to be built out under the Proposed Plan during the planning horizon.

DCP uses a midpoint[3] methodology to calculate the Reasonable Expected Development that is being created by proposed land use changes, when updating its Community Plans. Assumptions are made about the level of build-out that is likely or reasonably expected to occur in a Community Plan area based on the acreage of land designated for each type of land use (by General Plan Land Use designations); allowable densities and intensities in each designation; and anticipated levels of development in the life of the plan. Ultimately, market factors dictate the level of development that occurs. Experience shows that only a percentage of the properties within a CPA will be redeveloped within the horizon year, typically 20-25 years, and that even the sites that do redevelop are not always developed to maximum levels allowed by the zoning. A number of factors serve to constrain development, including:

- Physical site constraints (topography, geology, etc.)
- Zoning regulations (requirements for parking, open space, yards and setbacks that sometimes limit the maximum development on a site to levels below what the zoning would otherwise permit)
- Environmental factors and constraints (adjacent uses, sensitive uses, local, state and federal laws)
- Historic preservation goals and regulations
- Land values, property ownership
- Market factors, (economy, financial lending practices, etc.)
- Community input and public participation process, among others

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[3] "Midpoint" refers to a methodology that assumes less than full build-out and is not intended on its own to indicate build out at fifty percent (50%) or any other particular percentage of build-out under the Proposed Plan.

In preparing Community Plans, land use changes are proposed that will allow for projected growth to be accommodated, given the realities of the above stated factors. For this reason, 100% build out is a theoretical scenario and is not analyzed, but rather a more "realistic" reasonable expected level of development is used both to guide proposed land use changes and analyze the potential environmental impacts of those changes. DCP's goal is to align community plan land use capacities with the overall SCAG projection for the City to be consistent with other department and agencies who plan for and provide public services and infrastructure to the city.

How Growth Is Addressed through Planning and Zoning

During the planning process, technical land use analysis including the study of trends, and consideration of General Plan policies is conducted to identify appropriate locations and levels of future development. In places where new growth is anticipated and planned to occur, corresponding zoning is applied to implement updated land use policy. Where zoning is changed to reflect new land use objectives, further development standards are applied to address potential impacts of planned growth. These standards can include urban design and/or general development standards and environmental standards.

Consistent with Framework and Community Plan land use policies reflected in the Proposed Plan, zone changes are applied in limited instances (e.g., in Regional or Community Commercial designated areas). In selected areas of the CPA where upzones or zoning changes have been introduced that allow more development than currently exists, potential impacts of proposed changes have been analyzed by the Community Plan EIR, and where potential impacts are anticipated, additional Design Standards and zoning restrictions are applied in the form of Community Plan Implementation Overlay (CPIO) regulations, Q Conditions or D Limitations, and/or Environmental Standards. These standards are applied to all applicable projects; a new project must meet these development standards or include certain measures in the project's construction to receive approval.

For example urban design standards could include requirements for buildings to be built to the sidewalk to create a more pedestrian environment. Development standards might include a transitional height requirement to improve the compatibility between new structures and those of adjacent lower scaled residential zones. An environmental standard might require shielding of light poles so as to direct light away from adjacent residential uses. These are examples that represent the types and range of regulations that can be applied to reduce potential impacts of new development.

For projects within a CPIO District, new development will be subject to CPIO regulations and standards. The CPIO Districts establish a minimum level of mitigation and projects will be required to comply with those regulations. Planners will review most projects in CPIO areas through a ministerial process. As is the case citywide, where projects exceed the Site Plan Review (SPR) threshold, discretionary review will be applied. Projects meet the threshold when they exceed 50,000 square feet or 50 units. In some cases, the Proposed Plan has removed zoning restrictions (e.g., Qualified Conditions that limited density or height have been removed to be consistent with surrounding land uses and zoning). These changes are often proposed for urban areas and have been accompanied with additional regulations described in detail above.

Excerpts from SCAG's Methodology Report

SCAG Methodology for 2004 is available online at the following site.

http://rtpscs.scag.ca.gov/Documents/2004/2004RTPAppendix_A_final.pdf.

Relevant sections regarding forecasting methodology and key assumptions are excerpted below.

2. Regional Population Trend Projection

2-1. 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 quartered 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 area. This process is formalized in the demographic balancing equation.

The fertility, mortality, and migration rates are projected in 5-year intervals for 18 age groups, for four mutually exclusive ethnic groups: Non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and Hispanic. These demographic rates are also projected by population classes: residents, domestic migrants, and international migrants.

2-2. Balance of Labor Demand and Labor Supply

SCAG links population dynamics to economic trends, and is based on the assumption that patterns of migration into and out of the region are influenced by the availability of jobs. The future labor force supply is computed from the population projection model by multiplying civilian resident population by projected labor force participation rates.

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

The second step is to convert workers into labor force demand using the ideal unemployment rate. If any imbalance occurs between labor force demand and labor force supply, it is corrected by adjusting the migration assumptions of the demographic projection model. Adjusted migration assumptions are followed by total population changes.

2. Regional Household Trend Projection

SCAG projects regional households 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. It is formulated in a following way. Headship rate is the proportion of a population cohort that forms the household. It is specified by age and ethnicity. Headship rate is projected in 5-year intervals for seven age groups (for instance, 15–24, 25–34, 35–44, 45–54, 55–64, 65–74, 75+), for four mutually exclusive ethnic groups.

County Population and Household Projection

As used in the regional population and household projection, SCAG uses the cohort-component model and the headship rate to project the county population and households.

B-1-2. Sub-County Demographic Trend Projection

SCAG projects sub-county demographic trend projections using the housing unit method, which is one of the most widely used methods for estimating and projecting local area households and population for planning purposes. The housing unit method consists of the following three steps.

First, occupied housing units (households) are estimated by extrapolating the past trend of occupied housing units. 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. The trend extrapolations will not consider anything beyond historical trends in the data. Institutional constraints, land constraints, and build-out scenarios from general plans will not be considered in the trend projection.

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. A constrained trend extrapolation of the E-5 average household size values is used with bounds determined by expert opinion, currently [1.2, 5.5].

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