
4.5 Induced Socio-Economic Impacts (Growth Inducement)

4.5.1 Introduction

This induced socio-economic impacts analysis addresses the extent to which the Master Plan alternatives would foster economic and population growth, which would result in the construction of new housing and other land use development that would directly or indirectly cause significant effects on the environment. The potential for project-induced growth to trigger construction of new service or utility infrastructure, or to remove obstacles to growth (thus enabling development to occur that is presently constrained), is also assessed. A presentation of employment growth and economic output, on which this analysis is based, is provided in Section 4.4.1, *Employment/Socio-Economics*. Existing conditions and direct impacts for public utilities, services, and schools are described in Sections 4.17.1, *Energy Supply*, 4.19, *Solid Waste*, 4.25, *Public Utilities*, 4.26, *Public Services*, and 4.27, *Schools*.

4.5.2 General Approach and Methodology

This analysis assesses induced socio-economic impacts at three geographic levels. The largest area is the five-county Los Angeles region. Growth within the five-county region is analyzed to assess overall project-related job, housing, and population growth as it compares to the Southern California Association of Governments (SCAG) forecast for this region. Two smaller areas within 20- and 10-mile radii of LAX were also analyzed to account for growth that would be concentrated in proximity to the airport. The composite study area for this analysis is shown in **Figure F4.5-1**, Study Area, Growth Inducing Impacts.

Population, employment, and housing baseline and forecast data for the study area were based on data from the SCAG *1998 Regional Transportation Plan (RTP)*, April 16, 1998. SCAG's RTP forecast provides projections of population, housing, and employment at the regional, subregional, and local levels. The forecast was developed through a process that involved coordination and input from local jurisdictions regarding expectations for growth, based in part on the remaining development potential allowed under their general plans.

The SCAG RTP was updated in 2001 and incorporated revised population, housing, and employment growth projections due to acknowledged overestimates in the 1998 RTP. The differences between the RTP forecasts vary throughout the region and are not substantial for all geographic areas.²⁴⁴ Growth resulting from Master Plan implementation could constitute a slightly larger proportion of growth projected in the 2001 RTP for certain geographic areas as compared with that projected in the 1998 RTP. However, use of the 2001 data would not change in any way the significance of growth inducing impacts, so the 1998 RTP growth forecasts are used throughout this analysis.

Socio-economic growth was estimated by Hamilton, Rabinovitz & Alschuler, Inc. (HR&A), based on projections of total economic output from the econometric forecasting model of the Los Angeles region developed by Regional Econometric Models, Inc. (REMI). A description of the REMI model and its economic projections is provided in Section 4.4.1, *Employment/Socio-Economics*. The primary output from the REMI model used for the analysis is the forecast of jobs directly associated with development and operation of LAX under the Master Plan alternatives. Output from the REMI model is largely based on annual passengers and air cargo tonnage associated with each of the alternatives.

Modeling was also used to generate the geographical distribution of the employment and households added to the region as a function of the project. The geographical distribution was generated through modeling by HR&A, using 1990 U.S. Census journey-to-work data.²⁴⁵ Employment was distributed based on the way jobs in industries tied to LAX were distributed as reported in the 1990 census, expecting that these location patterns would remain similar in 2015 to what they were in 1990. Population and housing for areas within 10- and 20-mile radii were estimated based on "on-airport employment," which refers to

²⁴⁴ In certain geographic areas, the growth projections in the 1998 RTP were actually increased in the 2001 RTP.

²⁴⁵ The 2000 U.S. Census journey-to-work data were not available at the time Technical Report 5, *Economic Impacts Technical Report*, and Technical Report S-3, *Supplemental Economic Impacts Technical Report*, were prepared; 1990 Census data have been used throughout this analysis.

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employees located within the seven census tracts that immediately surround and include LAX. Population and housing estimates for the five-county region are based on total direct employment.

As with employment, household locations were distributed based on the expectation that the residential location patterns of employees at LAX would remain constant. All estimates of population and housing are considered to be high, as it is assumed for the analysis that all new employees would move into newly-constructed housing rather than existing housing, and that new jobs would not be filled by individuals who already live in the area. Employment, population, and housing numbers, and associated methodology are presented more fully in Technical Report 5, *Economic Impacts Technical Report*, and Technical Report S-3, *Supplemental Economic Impacts Technical Report*.

Because SCAG's forecasts incorporate input from cities and counties regarding planned and expected growth within their individual jurisdictions, and as regional transportation and other planning efforts are based on this data, consistency with SCAG's forecast was assessed to determine the extent to which growth induced by the project is likely to be accounted for in the region. This evaluation for the study area compared project-generated employment, population, and housing with SCAG forecast numbers for employment, population, and housing. Assessments regarding the potential for physical impacts focused on whether project-induced growth would foster the need for substantial new housing, infrastructure, or other development that could affect the environment, particularly if such growth is not accounted for within SCAG's forecast. The potential for the project to remove obstacles to growth (such as the extension of infrastructure into underdeveloped areas), which would provide incentives for growth in the immediate area, was also assessed.

4.5.3 Affected Environment/Environmental Baseline

Based on SCAG forecast data, the 1996 population in the five-county Los Angeles region was approximately 16 million.²⁴⁶ There were approximately 5.2 million households and total employment was approximately 6.8 million (see **Table F4.5-1**, Existing Conditions 1996 Population, Households and Employment). Within a 20-mile radius of LAX there was a total population of approximately 5.6 million residents in approximately 1.9 million households and an estimated 2.6 million jobs. Within a 10-mile radius, there was a total population of approximately 1.8 million in about 665,000 households and an estimated 864,500 jobs.

Table F4.5-1

Existing Conditions 1996 Population, Households and Employment

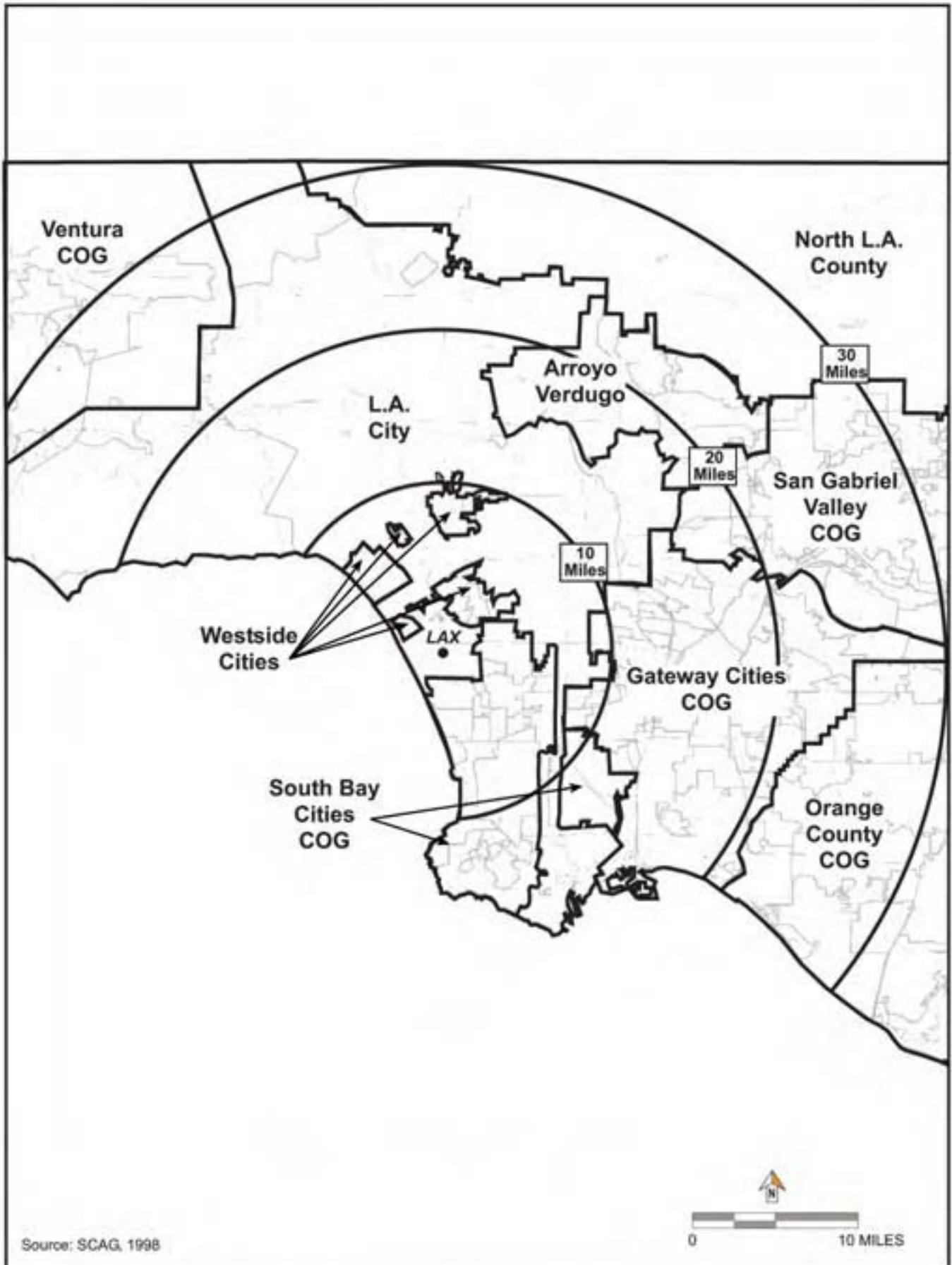
Locations	Population¹	Households¹	Employment¹
0- to 10-Mile Radius	1,832,413	664,948	864,539
0- to 20-Mile Radius	5,611,877	1,906,702	2,609,307
Five-County Region	15,931,274	5,212,382	6,827,650

¹ As SCAG's forecast from the 1998 RTP does not provide data for the project base year, 1996 numbers are interpolated from SCAG 1994 and 2000 forecast data.

Source: SCAG, 1998 Regional Transportation Plan.

In 1996, LAX was directly related to \$60 billion in total annual economic output and about 408,000 jobs, or one out of every 20 jobs in the regional economy (see **Table F4.5-2**, LAX-Related Regional Employment and Economic Output - 1996). This total includes about 59,000 jobs at LAX, with the balance in a wide range of passenger spending-related jobs and airfreight cargo-related manufacturing jobs in other locations. When the multiplier effect of these direct jobs is taken into account, LAX's direct impact in the region in 1996 increases to \$110 billion and 932,000 jobs, or about one of every seven jobs.

²⁴⁶ SCAG's RTP forecast data is provided at five-year intervals, but does not include a 1996 data set. As a result, SCAG's data was interpolated to establish a 1996 baseline year for the analysis.



Source: SCAG, 1998



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Study Area
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Figure
F4.5-1

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Table F4.5-2

LAX-Related Regional Employment and Economic Output - 1996

	Employment	Economic Output
Without Multiplier Effect	408,000	\$60 billion
With Multiplier Effect	932,000	\$110 billion

Source: HR&A, Inc., 2000.

Most of this impact occurred in the City and County of Los Angeles, and more particularly within a 20-mile radius of LAX. Under updated conditions, by 2000, increased passenger and cargo activity at LAX accounted for \$65 billion in total direct economic output (gross sales) in the region and approximately 425,000 jobs.

As shown in **Table F4.5-3**, Households and Population Impacts of On-Airport Employment - 1996, there were approximately 44,000 households with a household population of approximately 127,000 in the Los Angeles region associated with on-airport employees. The large majority of these households, over 90 percent with an associated population of more than 117,000, were located within Los Angeles County.

Table F4.5-3

Households and Population Impacts of On-Airport Employment - 1996

Analysis Area/Category	1996 Base Year
On-Airport Employment	58,966
Los Angeles County	
Employee Households	41,039
Household Population	117,541
Five-County Region	
Employee Households	44,261
Household Population	126,657

Source: HR&A, Inc., 2000.

4.5.4 Thresholds of Significance

4.5.4.1 CEQA Thresholds of Significance

A significant impact would occur if the direct or indirect changes in the environment that may be caused by the particular build alternative would potentially result in one or more of the following:

- ◆ Directly or indirectly fostered population or economic growth that would cause significant physical impacts on the environment by triggering the need for development of substantial new land uses and/or associated public facilities or infrastructure.
- ◆ Removal of obstacles to population growth or new development that would lead to significant physical impacts on the environment (for example, extending a new highway or utility infrastructure into an undeveloped area, thereby resulting in housing growth and associated physical impacts).

These thresholds are utilized to address the growth-inducing impacts of the project. Both thresholds are derived from language contained in CEQA Guidelines, Section 15126.2(d). The thresholds are also consistent with guidance in Section 47(e)(4) of FAA Order 5050.4A, *Airport Environmental Handbook*, which focuses on the potential for induced or secondary impacts on surrounding communities.

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4.5.4.2 Federal Standards

There are no federal standards that define significance thresholds for induced socio-economic impacts. As indicated above, FAA Order 5050.4A provides for the analysis of induced socio-economic impacts associated with major airport proposals.

4.5.5 Master Plan Commitments

No Master Plan commitments for induced socio-economic impacts are proposed.

4.5.6 Environmental Consequences

As described in the Analytical Framework discussion in the introduction to Chapter 4, the basis for determining impacts under CEQA is different from that of NEPA. Under CEQA, the impacts of a proposed project and alternatives are measured against the "environmental baseline," which is normally the physical conditions that existed at the time the Notice of Preparation was published (i.e., June 1997, or 1996 when a full year of data is appropriate, for the LAX Master Plan Draft EIS/EIR). As such, the CEQA analysis in this Final EIS/EIR uses the environmental baseline, or in some cases an "adjusted environmental baseline," as the basis by which to measure and evaluate the impacts of each alternative. Under NEPA, the impacts of each action alternative (i.e., build alternative) are measured against the conditions that would otherwise occur in the future if no action were to occur (i.e., the "No Action" alternative). As such, the NEPA analysis in this Final EIS/EIR uses the No Action/No Project Alternative as the basis by which to measure and evaluate the impacts of each build alternative (i.e., Alternatives A, B, C, and D) in the future (i.e., at buildout in 2015 or, for construction-related impacts, selected future interim year). Based on this fundamental difference in the approach to evaluating impacts, the nature and significance of impacts determined under CEQA are not necessarily representative of, or applicable to, impacts determined under NEPA. The following presentation of environmental consequences should, therefore, be reviewed and considered accordingly.

Table F4.5-4, Net Change in Population, Households, Employment 1996-2015, LAX Master Plan Alternatives, shows the incremental change in overall direct jobs associated with the Master Plan alternatives, and associated changes in population and housing estimated to result from on-airport employees. The relationship of these changes to SCAG's forecast, as well as their implications to growth-induced impacts, are discussed below for each of the alternatives. SCAG forecast numbers for the three study areas are included in **Table F4.5-5**, SCAG Forecast for Study Areas, Population, Households, Employment Growth 1996-2015. The potential of the alternatives to remove obstacles to population growth or new development is also discussed below.

Table F4.5-4

**Net Change in Population, Households, Employment 1996-2015
LAX Master Plan Alternatives**

Area	No Action/No Project ^{1, 2, 3}			Alternatives A & B ^{1, 3}			Alternative C ^{1, 3}			Alternative D ^{1, 2, 3}		
	Emp.	HH	Pop.	Emp.	HH	Pop.	Emp.	HH	Pop.	Emp.	HH	Pop.
0- to 10-Mile Radius	-23,024	-3,814	-10,395	16,165	4,863	13,255	7,080	2,641	7,198	-22,845	-3,809	-10,382
0- to 20-Mile Radius	-44,897	-5,683	-15,939	31,522	7,247	20,325	13,805	3,935	11,037	-44,548	-5,676	-15,919
Five-County Region	-57,560	-43,208	-123,637	40,413	30,335	86,806	17,699	13,285	38,017	-57,113	-43,153	-123,479

¹ Population and housing for the 10- and 20-mile radii are based on on-airport employment; for the five-county region, population and housing are based on total direct regional LAX employment. Population is lower than on-airport employment for 10- and 20-mile radii due to remote employee household locations.

² Net employment declines are projected over the planning period due to productivity increases within manufacturing industries related to LAX that would outpace increases in employment associated with increases in air transportation activity. The decline in employment in each study area would have a corresponding effect on LAX-related population and housing.

³ Calculations based on projections of total economic output from the econometric forecasting model of the Los Angeles region developed by Regional Econometric Models, Inc. (REMI) (refer to Section 4.4.1, *Employment/Socio-Economics*, and Technical Report 5, *Economic Impacts Technical Report*, for further discussion).

Source: HR&A, Inc., 2003.

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Table F4.5-5

SCAG Forecast for Study Areas Population, Households,
Employment Growth 1996-2015

Area	Emp.	HH	Pop.
0- to 10-Mile Radius	195,974	95,334	288,834
0- to 20-Mile Radius	581,778	274,444	930,940
Five-County Region	2,836,712	1,462,847	4,653,455

Source: SCAG, 1998 Regional Transportation Plan.

4.5.6.1 No Action/No Project Alternative

Under the No Action/No Project Alternative, described in Chapter 3, *Alternatives*, cargo and passenger activity characteristics, which fuel job growth, are especially pertinent to the evaluation of induced socio-economic impacts.

There would be a decrease in employment and associated employee households and population by 2015 under the No Action/No Project Alternative, as shown in **Table F4.5-4**. For the five-county region, it is estimated that employment would be reduced by 57,560, with associated reductions in employment-related households of 43,208, and population reductions of 123,637. This decrease would apply to all portions of the study area. This decline in employment over the planning period, in spite of increasing aviation activity, reflects productivity increases (i.e., producing more economic output per worker) within manufacturing industries related to LAX that would outpace increases in employment. With a forecast decline in employment and associated households and population, no induced growth would occur. Furthermore, the No Action/No Project Alternative would not remove obstacles to growth because no significant changes or expansion of infrastructure are proposed to open up new areas to population growth.

4.5.6.2 Alternative A - Added Runway North

Under Alternative A, described in Chapter 3, *Alternatives*, cargo and passenger activity is especially pertinent to the evaluation of induced socio-economic impacts because it fuels job growth.

Job Growth

LAX would yield direct economic output of \$83.7 billion under Alternative A and total direct jobs of about 448,000 throughout the region by 2015, as discussed in Section 4.4.1, *Employment/Socio-Economics*. Taking the multiplier effect described in the economic analysis into account, LAX's impact would be \$127 billion in total economic output and 852,000 jobs by 2015. Construction costs associated with the alternative would translate into an estimated 91,337 jobs, which, with the multiplier effect taken into account, translates to a total construction employment impact in the county of 191,465 jobs.

The incremental increase in LAX-related employment over 1996 baseline conditions (shown in **Table F4.5-4**) would total 40,413 jobs. Approximately 78 percent of these jobs (31,522) would be located within a 20-mile radius of LAX, and 40 percent (16,165) would be located within a 10-mile radius.

For the five-county region, and for areas within a 10- and 20-mile radius of LAX, this job growth would fall well within the growth forecast by SCAG for the 1996 to 2015 period. Although direct jobs associated with LAX would total approximately 448,000, representing nearly 5 percent of the region's 9.6 million jobs, the incremental increase in employment associated with Alternative A would represent 1.4 percent of forecast regional job growth. Within a 20-mile radius of LAX, incremental job growth would equate to approximately 5 percent of SCAG forecast growth. Jobs at LAX and distributed throughout surrounding communities within a 10-mile radius of LAX would represent approximately 8 percent of forecast job growth. Since job growth associated with the LAX Master Plan is fully accounted for in relevant regional and local forecasts and planning activities, impacts would be less than significant.

Alternative A would generate substantially more job growth than the No Action/No Project Alternative due primarily to the reductions in employment expected over time with the No Action/No Project Alternative. Compared to the No Action/No Project Alternative, Alternative A would provide an estimated 97,973 more

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jobs in the five-county region, 76,419 more jobs within a 20-mile radius, and 39,189 more jobs within a 10-mile radius.

Population and Housing Growth

Based on projected increases in employment at LAX by HR&A for Alternative A, a total population of as much as 86,806 in 30,335 households would be added to the five-county region between 1996 and 2015, as shown in **Table F4.5-4**. Of this total, approximately 20,325 people (or 23 percent) would reside within a 20-mile radius of LAX, in 7,247 households. Approximately 13,255 of those people (15 percent) would reside within a 10-mile radius in 4,863 households.

For the five-county region, and for areas within a 10- and 20-mile radius of LAX, population and housing growth associated with the project would fall well within SCAG's forecast for the 1996 to 2015 period. Over the entire region, population and household growth would represent approximately 2 percent of forecast growth. Within a 20-mile radius of LAX, population growth would represent approximately 2 percent of forecast growth, and households would represent approximately 3 percent of forecast growth. Within a 10-mile radius of LAX, both population and household growth would represent approximately 5 percent of forecast growth. Since LAX-related growth is fully accounted for in relevant regional and local forecasts and planning activities, impacts would be less than significant.

Alternative A would generate substantially more indirect population and housing growth than the No Action/No Project Alternative due primarily to the reductions in employment expected over time with the No Action/No Project Alternative. Compared to the No Action/No Project Alternative, Alternative A would provide an estimated 210,443 more people and 73,543 more households in the five-county region, 36,264 more people and 12,930 more households within a 20-mile radius, and 23,650 more people and 8,677 more households within a 10-mile radius.

Growth-Inducing Impacts

As previously stated in subsection 4.5.2, *General Approach and Methodology*, SCAG's forecast was developed with direct input from cities and counties regarding planned and expected growth within their jurisdictions. Their growth potential is largely based on development potential remaining under their general plans. Regional transportation, utilities, schools, and other local and regional plans are also based on this data. Based on the projections outlined above, it is clear that project-related increases in employment, population, and households between 1996 and 2015 would fall well within and represent only a small portion of forecast growth at both the regional and local levels.

Housing Development, Utilities, and Services

In considering the potential to foster the construction of new housing, the employment-related demand of 4,863 new housing units within a 10-mile radius represents approximately 5 percent of the 95,334 unit increase in housing forecast within this area by 2015. Given the largely built-out nature of the communities within this area, it is expected that housing demand induced by LAX would be spread throughout the area, rather than nearby, and would be accommodated through infill development where utilities and infrastructure are readily available. One exception would be the nearby Playa Vista Project, which includes approximately 5,800 residential units (approved First Phase Project and proposed Village at Playa Vista) in a previously undeveloped area.

The ample housing supply forecast to be generated by 2015 (95,334 units) within a 10-mile radius of LAX, is validated by 1999 and 2003 data, which indicate that approximately 18,000 housing units (including Playa Vista) are currently proposed or under construction within a portion of the 10-mile study area. This information is based on a survey and other data assembled for the project by Parsons Transportation Group (formerly Barton-Aschman Associates, Inc.).²⁴⁷ The 18,000 units were identified based on a survey of only eight of the 18 jurisdictions that fall within the 10-mile area evaluated for LAX-related housing demand. This very conservative expectation of increased housing supply based on current projects only, suggests that an LAX-induced increase in demand for 4,863 units within this area by 2015 could be easily accommodated within overall forecast housing growth. The forecast increase in

²⁴⁷ Parsons Transportation Group (formerly Barton-Aschman Associates, Inc.), Revised Related Projects List for LAX Master Plan EIS/EIR, September 29, 1999; and Technical Report S-2b, Supplemental Off-Airport Surface Transportation Technical Report.

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housing supply is independent of existing housing units, which would be available on the market, that could also address demand for new employee households.²⁴⁸ This same conclusion would apply to housing demand associated with total on- and off-airport direct LAX employment throughout the five-county area, which would represent approximately 2 percent of forecast growth. Since LAX-related growth is accounted for within local and regional forecasts, impacts on housing development would be less than significant.

Demand for public utilities and services associated with induced housing and population growth is presented in **Table F4.5-6**, Induced Growth Public Utility Demand (1996-2015), and in **Table F4.5-7**, Induced Growth Public Service Demand (1996-2015). Determinations regarding the significance of this demand on the physical environment are evaluated under the cumulative impact discussions in Section 4.17.1, *Energy Supply*, Section 4.19, *Solid Waste*, Section 4.25, *Public Utilities*, Section 4.26, *Public Services*, and Section 4.27, *Schools*. For nearly all of the areas addressed under public utilities and services, the potential physical impacts associated with this demand are, due to a number of factors, considered to be less than significant. For example, water and energy supply are considered to be adequate through 2015 based on what is known by purveyors about resource availability and future demand (which is assessed by purveyors using regional forecast data). Sufficient wastewater treatment capacity is also being provided to accommodate projected growth. Induced demand for parkland is considered to be largely offset through local ordinance provisions requiring parkland or in-lieu fees with new residential development. Induced demand for schools is considered to be mitigated through payment of impact fees with new development and through other funding supporting school master plan programs, which, for LAUSD and other districts, are based on regional forecast data. One exception is solid waste, where regional landfill capacity is constrained to the point where even minor increases in solid waste generation are considered to be potentially significant. Mitigation for this impact is provided in Section 4.19, *Solid Waste*, in Mitigation Measure MM-SW-1, Provide Landfill Capacity to Accommodate Cumulative Solid Waste (Alternatives A, B, C, and D).

Table F4.5-6

Induced Growth Public Utility Demand (1996-2015)

Area	No Action/No Project	Alternatives A & B	Alternative C	Alternative D
0- to 10-Mile Radius				
Solid Waste ¹ (tons/year)	-4,691	5,981	3,248	-4,685
Water Use ² (gallons/day)	-686,520	875,340	475,380	-685,620
Wastewater ³ (gallons/day)	-686,520	875,340	475,380	-685,620
Electricity ⁴ (megawatt hours/year)	-21,460	27,362	14,860	-21,431
Natural Gas ⁵ (thousand cubic feet/year)	-305,044	388,943	211,227	-304,644
Five-County Region				
Solid Waste ¹ (tons/year)	-53,146	37,312	16,341	-53,078
Water Use ² (gallons/day)	-7,777,440	5,460,300	2,391,300	-7,767,540
Wastewater ³ (gallons/day)	-7,777,440	5,460,300	2,391,300	-7,767,540
Electricity ⁴ (megawatt hours/year)	-243,110	170,680	74,748	-242,800
Natural Gas ⁵ (thousand cubic feet/year)	-3,455,776	2,426,193	1,062,534	-3,451,377

¹ Based on a factor of 1.23 tons per year per dwelling unit. (See Technical Report 10, *Solid Waste Technical Report and Technical Report S-7, Supplemental Solid Waste Technical Report.*)

² Based on a factor of 180 gallons per day per dwelling unit. (See Technical Report 15, *Public Utilities Technical Report.*)

³ Based on a factor of 180 gallons per day per dwelling unit. (See Technical Report 15, *Public Utilities Technical Report.*)

⁴ Based on a factor of 5.6265 megawatt hours (MWH) per dwelling unit per year. (See Technical Report 8, *Energy Supply Technical Report and Technical Report S-6, Supplemental Energy Supply Technical Report.*)

⁵ Based on a factor of 79.980 thousand cubic feet per dwelling unit per year. (See Technical Report 8, *Energy Supply Technical Report and Technical Report S-6, Supplemental Energy Supply Technical Report.*)

Source: PCR Services Corporation, 2003.

²⁴⁸ A Year 2000 vacancy rate was applied to SCAG forecast data on housing for the Year 2000, which indicated an estimated 27,800 multi-family dwelling units within a 10-mile radius of LAX are potentially available to accommodate demand. This estimate does not include existing single-family homes that would also be available on the market within the same area.

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Table F4.5-7

Induced Growth Public Service Demand (1996-2015)

Area	No Action/No Project	Alternatives A & B	Alternative C	Alternative D
0- to 10-Mile Radius				
Fire Protection ¹ (staff)	-10	13	7	-10
Law Enforcement ² (sworn officers)	-42	53	29	-42
Parks and Recreation ³ (acres)	-31	40	22	-31
Libraries ⁴ (square feet)	-5,198	6,628	3,599	-5,191
Schools ⁵ (students generated)	-1,487	1,897	1,030	-1,486
Five-County Region				
Fire Protection ¹ (staff)	-124	87	38	-123
Law Enforcement ² (sworn officers)	-495	347	152	-494
Parks and Recreation ³ (acres)	-371	260	114	-370
Libraries ⁴ (square feet)	-61,819	43,403	19,009	-61,740
Schools ⁵ (students generated)	-16,851	11,831	5,181	-16,830

¹ Based on a factor of 1 staff per 1,000 population.

² Based on a factor of 4 sworn officers per 1,000 population.

³ Based on a factor of 3 acres per 1,000 population.

⁴ Based on a factor of 0.5 square feet per 1 population.

⁵ Based on a factor of 0.39 students per dwelling unit.

Source: PCR Services Corporation, 2003.

From a growth inducing standpoint, potential impacts on utilities and services are considered to be less than significant. Growth induced by LAX-related employment and associated population and housing from 1996 to 2015 is accounted for within local and regional forecasts. Furthermore, as previously stated, long-range planning, impact fees, project-by-project review, and regulatory controls would also ensure that utility and service supplies would keep pace with forecast and project-induced demand.

Industrial Development

In the immediate vicinity of LAX, there is potential for growth-inducing effects due to increases in cargo movement through the airport. If greater volumes of cargo are processed at LAX, it is expected that demand for warehousing and industrial space would increase in surrounding areas. Currently, there is a very limited supply of industrial space in the area due to very low vacancy rates, with only 500,000 SF of vacant industrial building space available in the LAX/EI Segundo/Hawthorne area in the first quarter of 2000.²⁴⁹ Through proposed acquisition, Alternative A would further deplete the total supply of industrial space in the LAX vicinity by approximately 123 acres (see Section 4.4.2, *Relocation of Residences or Businesses*). This combination of factors could result in redevelopment and intensification of existing industrial properties or in the conversion or recycling of other land uses, both of which would in turn result in physical impacts on the environment.

It is possible that much of this demand could be met nearby in the City of Inglewood. In its goals for industrial use, the Inglewood General Plan indicates a priority for expanding existing industrial firms and actively seeking to add new firms, as well as increasing industrial employment opportunities for city residents. Consistent with this goal, the city has proposed redevelopment along Century Boulevard, just east of LAX, for converting land to industrial use. Within this area, there are about 44 acres of non-industrial land, which, if converted, would have the potential to serve both displaced and increased demand for industrial use generated by increased cargo volumes at LAX. The majority of land in this area is occupied by residential use, which is currently considered incompatible due to high levels of aircraft noise. As a result, conversion of this area to industrial use would not only be in line with city plans and goals, it would also reduce the extent of incompatible land use.

To the extent that induced demand in other jurisdictions would exceed available supply within industrially designated and zoned land, proposed industrial development in those instances would be subject to discretionary approval by these jurisdictions and, therefore, would require environmental review. The

²⁴⁹ Colliers Seeley, *First Quarter 2000 Industrial Market Watch, South Bay*, 2000.

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potential for project-induced demand for industrial development to result in impacts is, therefore, considered to be less than significant.

Removal of Obstacles

Alternative A is not expected to remove obstacles to population growth. Infrastructure would not be expanded or extended into under-developed or undeveloped areas. While expansion of LAX would accommodate market-driven demand for passengers and cargo, which, in turn, would result in employment and population growth, the area surrounding LAX is largely built out. As a result, growth induced by the alternative is not expected to open up new areas to development or induce substantial population growth that is not already planned and accounted for within local and regional forecasts. Therefore, potential impacts associated with the removal of obstacles to population growth are considered to be less than significant.

4.5.6.3 Alternative B - Added Runway South

The estimates of economic impact linked to the annual passenger volume and annual cargo tonnage values for Alternative B are identical to Alternative A. Therefore, the growth-inducing effects of Alternative B are very similar to those for Alternative A, described above. One exception is that Alternative B would generate slightly higher construction jobs, with 102,614 jobs directly involved in construction (12,108 more jobs than Alternative A) and 215,103 jobs resulting when a multiplier effect is taken into account (25,827 more jobs than Alternative A). Alternative B would also require acquisition of an additional 47 acres of industrial land compared to Alternative A. These changes would not, however, alter conclusions regarding impacts. As a result, growth induced by Alternative B is not expected to open up new areas to development or induce population growth that is not already within local and regional forecasts. Therefore, growth inducement associated with Alternative B is considered to be a less than significant impact. The comparison of job, population, and housing growth under Alternative B with the No Action/No Project Alternative would be equivalent to what was described under Alternative A, with greater growth expected above the negative projections associated with the No Action/No Project Alternative.

4.5.6.4 Alternative C - No Additional Runway

Under Alternative C, described in Chapter 3, *Alternatives*, cargo and passenger activity characteristics, which fuel job growth, are especially pertinent to the evaluation of induced socio-economic impacts.

Job Growth

LAX would yield direct economic output of \$82.2 billion and total direct jobs of 425,369 throughout the region by 2015. This employment level is lower than Alternatives A and B because of the lower annual passenger and cargo totals associated with the alternative. As shown in **Table F4.5-4**, the incremental increase in LAX-related employment over 1996 baseline conditions would total 17,699 jobs. Approximately 78 percent of these jobs (13,805) would be located within a 20-mile radius of LAX, 40 percent (7,080) would be located within a 10-mile radius, and nearly 36 percent (6,421), would be located at LAX or within the seven census tract area that surrounds the airport.

Compared to Alternatives A and B, job growth under Alternative C would account for an even smaller percentage of growth forecast by SCAG for the 1996 to 2015 period, and would also be fully accounted for in related regional and local planning activities. Without accounting for on-airport employment, jobs distributed throughout surrounding communities within a 10-mile radius would represent approximately 4 percent of SCAG's forecast growth for the area. Since job growth associated with the LAX Master Plan is fully accounted for in relevant regional and local forecasts and planning activities, impacts would be less than significant.

Alternative C would generate substantially more job growth than the No Action/No Project Alternative due to the reductions in employment expected over time with the No Action/No Project Alternative. Compared to the No Action/No Project Alternative, Alternative C would provide an estimated 75,259 more jobs in the five-county region, 58,702 more jobs within a 20-mile radius, and 30,104 more jobs within a 10-mile radius.

4.5 Induced Socio-Economic Impacts (Growth Inducement)

Population and Housing Growth

With fewer jobs under Alternative C than Alternatives A or B, population and households generated would also decline in number. Based on projected increases in employment at LAX, a total population of 38,017 in 13,285 households would be added to the five-county region between 1996 and 2015. Approximately 11,037 (29 percent of the total added population) would reside in 3,935 households within a 20-mile radius of LAX. Approximately 7,198 (19 percent of the total added population) would reside within a 10-mile radius in 2,641 households.

For the five-county region, and for areas within a 10- and 20-mile radius of LAX, population and housing growth associated with the project would fall well within growth forecast by SCAG for the 1996 to 2015 period, as shown in **Table F4.5-4**. Over the entire region, population and household growth would represent less than 1 percent of forecast growth. Within a 20-mile radius of LAX, both population and housing growth would represent approximately 1 percent of forecast growth. Within a 10-mile radius of LAX, both population and household growth would represent approximately 3 percent of forecast growth. Since LAX-related growth is fully accounted for in relevant regional and local forecasts and planning activities, impacts would be less than significant.

Alternative C would generate substantially more indirect population and housing growth than the No Action/No Project Alternative due to the reductions in employment expected over time with the No Action/No Project Alternative. Compared to the No Action/No Project Alternative, Alternative C would provide an estimated 161,654 more people and 56,493 more households in the five-county region, 26,976 more people and 9,618 more households within a 20-mile radius, and 17,593 more people and 6,455 more households within a 10-mile radius.

Growth-Inducing Impacts

Housing Development, Utilities, and Services

Conclusions regarding growth inducement of new housing development impacts for Alternative C would be similar to those described under Alternatives A and B, but with even smaller contributions to induced effects. As previously indicated, it is clear that project-related increases in employment, population, and households between 1996 and 2015 would represent only a small portion of forecast growth at both the regional and local levels. In considering the potential for generating construction of new housing, the employment-related demand for up to 2,641 housing units within a 10-mile radius represents less than 3 percent of the increase in housing expected by these jurisdictions. Since LAX-related growth is accounted for within local and regional forecasts, impacts on housing development would be less than significant. Given the largely built-out nature of communities within this area, it is expected that housing and other development induced by LAX would be accommodated through infill development where utilities and infrastructure are readily available. As project-induced growth is accounted for within SCAG forecasts, and services demand and infrastructure needs associated with project population and households are expected to be within long-range planning for services and infrastructure, the potential for physical impacts on the environment due to growth induced by the project is considered to be less than significant. Determinations regarding the significance of project-induced demand for public utilities and services on the physical environment are evaluated under the cumulative impact discussions in Section 4.17.1, *Energy Supply*, Section 4.19, *Solid Waste*, Section 4.25, *Public Utilities*, Section 4.26, *Public Services*, and Section 4.27, *Schools*.

Industrial Development

As with Alternatives A and B, proposed acquisition under Alternative C would deplete the supply of industrial space in the LAX vicinity while at the same time creating new demand for industrial uses due to increases in cargo processing at the airport. Under Alternative C, approximately 91 acres of industrial use would be acquired, compared to 123 acres under Alternative A and 170 acres under Alternative B. As previously indicated, this increase in demand could result in redevelopment and intensification of existing industrial properties, or in the conversion of other land uses. As previously concluded, any industrial development requiring a change in land use or zoning would be subject to the discretion of local jurisdictions and environmental review. Furthermore, the approximately 192 acres of non-industrial land proposed for conversion to industrial use, combined with other property in the vicinity that could be developed or redeveloped, would be expected to address both displaced and increased demand for

4.5 Induced Socio-Economic Impacts (Growth Inducement)

industrial use generated by increased cargo volumes at LAX. Therefore, the potential for induced demand for industrial development to result in impacts is considered to be less than significant.

Removal of Obstacles

As with Alternatives A and B, growth induced by Alternative C is not expected to open up new areas for development or induce substantial population growth that is not already planned and accounted for. As a result, potential impacts of removal of obstacles to population growth are considered to be less than significant.

4.5.6.5 Alternative D - Enhanced Safety and Security Plan

Under Alternative D, described in Chapter 3, *Alternatives*, cargo and passenger activity are especially pertinent to the evaluation of induced socio-economic impacts because they fuel job growth. The incremental change in overall direct jobs associated with Alternative D and related changes in population and housing estimated to result from on-airport employees is shown in **Table F4.5-4**. The relationship of these changes to SCAG's growth forecasts, as well as their implications to growth-induced impacts, are discussed below. The potential for Alternative D to remove obstacles to population growth or new development is also discussed below.

Job Growth

Under Alternative D, LAX would yield a direct economic output of \$63.7 billion and total direct jobs of about 350,500 throughout the region by 2015, as discussed in Section 4.4.1, *Employment/Socio-Economics*. Taking into account the multiplier effect described in the economic analysis, LAX's impact would be \$93.8 billion in total economic output and 629,000 jobs by 2015. Construction costs associated with the alternative would translate into an estimated 48,778 jobs, which, with the multiplier effect taken into consideration, translates to a total construction employment impact in the county of 102,244 jobs.

As shown in **Table F4.5-4**, the projected direct regional employment associated with Alternative D in 2015 represents a net decrease of 57,113 jobs compared to baseline (1996) conditions. This decrease would apply to all portions of the study area. The decline in employment over the planning period, in spite of increasing aviation activity, reflects productivity increases (i.e., producing more economic output per worker) within manufacturing industries related to LAX that would outpace increases in employment. Under Alternative D, similar to the other build alternatives, approximately 78 percent of LAX-related jobs (273,435) would be located within a 20-mile radius of LAX, and 40 percent (140,223) would be located within a 10-mile radius. However, given the projected net decrease in employment, Alternative D would have no meaningful contribution to the job growth forecast by SCAG for each of the geographic study areas for the 1996 to 2015 period. Consequently, induced growth resulting from increased employment levels would not occur, and impacts would be less than significant.

Alternative D is projected to support roughly the same level of employment as the No Action/No Project Alternative in 2015. Compared to the No Action/No Project Alternative, Alternative D would provide an estimated 447 more jobs in the five-county region, 349 more jobs within a 20-mile radius, and 179 more jobs within a 10-mile radius.

Population and Housing Growth

Based on projected decreases in LAX-related jobs under Alternative D due to productivity increases over the planning period, a total population of as much as 123,479 people in 43,153 households would be lost to the five-county region between 1996 and 2015. Of this total, approximately 15,919 people (or 13 percent) in 5,676 households would be located within a 20-mile radius of LAX, and approximately 10,382 people (8 percent) would be located within a 10-mile radius, representing 3,809 households. Given the net change in population and housing, Alternative D would have no meaningful contribution to the growth forecast by SCAG for each of the geographic study areas for the 1996 to 2015 period. Consequently, growth induced by an increase in population would not occur.

Alternative D would result in nearly the same level of indirect population and housing decline as the No Action/No Project Alternative, due primarily to similar reductions in employment expected over time. Compared to the No Action/No Project Alternative, Alternative D would retain an estimated 158 more people and 55 more households in the five-county region; 20 more people and 7 more households within a 20-mile radius; and 13 more people and 5 more households within a 10-mile radius.

4.5 Induced Socio-Economic Impacts (Growth Inducement)

Growth-Inducing Impacts

SCAG's regional forecasts incorporate local- and county-level growth projections for each jurisdiction within the region. Regional transportation, utilities, schools, and other local and regional plans are based on this data. In light of the projections outlined above, it is clear that project-related declines in employment, population, and households between 1996 and 2015 would not contribute meaningfully to the forecast growth at either the regional or local levels.

Housing Development, Utilities, and Services

With an estimated decrease in employment and associated population, Alternative D would not generate net new indirect demand for housing resources over the 1996 to 2015 period. Projected housing supplies within the study areas would thus remain largely unaffected by project development. The demand for public utilities and services associated with employee households and population would likewise decrease over the planning period, as shown in **Table F4.5-6** and **Table F4.5-7**. Determinations regarding the significance of this demand on the physical environment are evaluated under the cumulative impact discussions in Section 4.17.1, *Energy Supply*, Section 4.19, *Solid Waste*, Section 4.25, *Public Utilities*, Section 4.26, *Public Services*, and Section 4.27, *Schools*. The projected reductions in utility and service demands would ultimately make additional supplies and resources available to other customers within the service areas of the various utility and service providers, which could be considered a beneficial impact. From a growth inducing standpoint, potential impacts on utilities and services are considered to be less than significant. Furthermore, long-range planning, impact fees, project-by-project review, and regulatory controls would also ensure that utility and service supplies would keep pace with forecast demand.

Since Alternative D would result in nearly the same level of decline in employment, indirect population, and housing as the No Action/No Project Alternative, similar decreases in demand for housing resources, public utilities, and services would also occur under each of these two alternatives. The decline in demand for housing resources, public utilities, and services would be slightly greater under the No Action/No Project Alternative.

Industrial Development

As under the other build alternatives, there is potential for growth-inducing effects in the immediate vicinity of LAX due to increases in cargo movement through the airport associated with Alternative D. If greater volumes of cargo are processed at LAX, it is expected that demand for warehousing and industrial space would increase in surrounding areas. Through proposed acquisition, Alternative D would deplete the total supply of industrial space in the LAX vicinity by approximately 17 acres, compared to 123 acres under Alternative A, 170 acres under Alternative B, and 91 acres under Alternative C. This combination of factors could result in redevelopment and intensification of existing industrial properties or in the conversion or recycling of other land uses, both of which would in turn result in physical impacts on the environment.

As with Alternatives A, B, and C, it is possible that much of this demand could be met nearby in the City of Inglewood, in light of General Plan goals and city plans to expand industrial operations and employment. To the extent that induced demand in other jurisdictions would exceed available supply within industrially designated and zoned land, proposed industrial development in those instances would be subject to discretionary approval by these jurisdictions and, therefore, would require environmental review. The potential for project-induced demand for industrial development to result in impacts is, therefore, considered to be less than significant.

Alternative D would accommodate the same level of increased cargo activity as the No Action/No Project Alternative, thereby inducing a similar level of demand for warehousing and industrial space in surrounding areas. However, since the No Action/No Project Alternative would not involve the acquisition of any industrial property as would occur under Alternative D, Alternative D could result in greater intensification of existing industrial properties in the area or a greater potential for the conversion or recycling of other land uses.

Removal of Obstacles

Alternative D is not expected to remove obstacles to population growth. Infrastructure would not be expanded or extended into under-developed or undeveloped areas. While expansion of LAX would

4.5 Induced Socio-Economic Impacts (Growth Inducement)

accommodate a portion of the region's market-driven demand for passengers and cargo, it would do so without a meaningful change in the capacity of the airport. Furthermore, Alternative D would not result in employment and population growth that is in conflict with local and regional forecasts. Therefore, potential impacts associated with the removal of obstacles to population growth are considered to be less than significant. Such impacts would be similar to the No Action/No Project Alternative, and would not remove obstacles to growth or open up new areas to population growth.

4.5.7 Cumulative Impacts

The analysis of growth-inducing effects accounts for forecasted growth both locally and regionally; as a result, cumulative impacts are addressed by the preceding analysis.

4.5.8 Mitigation Measures

Alternatives A, B, C, and D would not have a significant impact on induced socio-economics (growth inducement); therefore, no mitigation is required.

4.5 Induced Socio-Economic Impacts (Growth Inducement)

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