
4.5 Induced Socio-Economic Impacts (Growth Inducement)

Overview

As described in Section 4.4.1, *Employment/Socio-Economics*, LAX plays a major role in the region's economy. In the Environmental Baseline year of 1996, LAX was directly associated with an estimated 408,000 jobs and \$60 billion in economic output within the five-county region. With the Master Plan alternatives, these regional economic benefits from LAX would vary compared to the Environmental Baseline.

- ◆ A five percent increase in economic activity and a 14 percent decrease in jobs under the No Action/No Project Alternative.
- ◆ A 38 percent increase in economic activity and a 10 percent increase in jobs under Alternatives A and B.
- ◆ A 36 percent increase in economic activity and a four percent increase in jobs under Alternative C.

These changes in economic activity and employment would stimulate regional population and household growth. This section addresses the extent to which each alternative would foster regional growth, which, in turn, would result in the construction of new housing, infrastructure, and other land use development that could impact the environment. The analysis examines induced socio-economic impacts at a regional level and within both a 10-mile and 20-mile radius of LAX.

The evaluation of induced socio-economic impacts is based largely on the output of the computer models used in the employment/socio-economic analysis (see Section 4.4.1, *Employment/Socio-Economics*). It also incorporates population, households, and employment data and projections prepared by the Southern California Association of Governments (SCAG). This integration of the economic model and SCAG data provides the basis for estimating the nature and extent of growth associated with the LAX Master Plan, at both the local level and the regional level.

Key Conclusions

Overview: Implementation of any of the build alternatives is not expected to remove any obstacles to growth and would, therefore, not open up new areas to development or induce substantial population growth that is not already planned and accounted for.

Projected Population, Households, and Employment Growth: The population, households, and employment growth characteristics associated with each of the Master Plan build alternatives at 2015 reflect the differences in the projected economic benefits of each.

- ◆ Alternatives A and B, with the highest projected regional economic benefit (\$83.7 billion) of the alternatives, induce the highest level of population, households, and employment growth.
- ◆ Alternative C, with the next highest economic benefit (\$82.1 billion), would induce about half as much growth as Alternatives A and B.
- ◆ The No Action/No Project Alternative would induce some natural growth in economic activity (\$63.7 billion), but far less than that of any of the build alternatives and would actually result in a negative growth rate for 2015. Due to effects of productivity gains and job losses (see Section 4.4.1, *Employment/Socio-Economics*), the projected economic activity for the No Action/No Project Alternative would not be able to support even the current level of regional employment directly associated with LAX. This projected decline in employment, and associated population and households, would occur at both local and regional levels.

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Net Change (in 1,000s) 1996 to 2015

Indirect Population and Households, and Direct Employment

Area	Population			Households			Employment		
	No Action/ No Project	Alts A & B	Alt C	No Action/ No Project	Alts A & B	Alt C	No Action/ No Project	Alts A & B	Alt C
0-10 Mile Radius	-10.4	13.3	7.2	-3.8	4.9	2.6	-23.0	16.2	7.1
0-20 Mile Radius	-15.9	20.3	11.0	-5.7	7.3	3.9	-44.9	31.5	13.8
Regional	-123.6	86.8	38.0	-43.2	30.3	13.3	-57.7	40.4	17.7

Comparison to SCAG Growth Projections: The increases in population, households, and employment estimated by 2015 would be well within SCAG growth projections. The SCAG projections reflect the level of growth anticipated by local jurisdictions, and serve, to a large degree, as the basis for long-range planning efforts by both local and regional agencies, particularly in addressing the forecasted need for increases in services and infrastructure.

Comparison of Project-Induced Growth to SCAG Growth Projections (Percent of Growth Projected by SCAG)

Area	Population			Households			Employment		
	No Action/ No Project	Alts A & B	Alt C	No Action/ No Project	Alts A & B	Alt C	No Action/ No Project	Alts A & B	Alt C
0-10 Mile Radius	-3.6%	4.6%	2.5%	-4.0%	5.1%	2.8%	-11.7%	8.2%	3.6%
0-20 Mile Radius	-1.7%	2.2%	1.2%	-2.1%	2.6%	1.4%	-7.7%	5.4%	2.4%
Regional	-2.7%	1.9%	0.8%	-3.0%	2.1%	0.9%	-2.0%	1.4%	0.6%

Growth-Inducement Impacts: The projected increase in employment and associated population and households represents only a small percentage of the growth anticipated and planned to occur locally and regionally. For example, within a ten-mile radius, SCAG forecasts indicate that over 95,000 new housing units would be constructed, and it is known that there are currently 20,000 units in this same area currently planned or under construction to serve project induced demand for housing that would range from approximately 2,641 to 8,677 units from 1996 to 2015. The area local to LAX is largely built-out and the accommodation of increased housing demand is likely to occur primarily through infill development where utilities and infrastructure are readily available. To the extent that such infill projects would have the potential for physical impacts on the environment, it is expected that these impacts would be addressed and mitigated through existing regulations and environmental review. As further detailed in the Section, public service and utility demand induced by the project is expected to be within the service planning parameters of individual agencies and jurisdictions and, therefore, collectively, potential growth inducing impacts on services and utilities are considered to be less than significant.

Aside from population and housing growth, the anticipated increase in cargo processed through LAX under the build alternatives has the potential for growth-inducing effects for warehousing and industrial use in the surrounding area. Such increased demand could result in the redevelopment and intensification of existing industrial properties or the recycling of other existing uses. It is possible that some of the increased demand could be met nearby in Inglewood where the City's General Plan indicates a priority for expanding existing industrial firms and providing increased employment opportunities while mitigating residential areas significantly impacted by aircraft noise. To the extent that induced demand for industrial space in surrounding jurisdictions could exceed available supply of appropriately designated land, the conversion of non-industrial to industrial use would be subject to the discretionary review and approval of affected jurisdictions with a requirement for environmental review. Based on the above, induced demand for industrial development is considered to be less than significant.

Environmental Action Plan

The growth-induced impacts associated with the Master Plan alternatives would be less than significant and no mitigation measures are necessary.

Related Topics

For more information regarding the anticipated economic and job benefits of the proposed project, see Section 4.4.1, *Employment/Socio-Economics*. Issues related to relocation and availability of industrial space are discussed in Section 4.4.2, *Relocation of Residences or Businesses*.

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 SCAG's 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 4.5-1**, Study Area Growth Inducing Impacts.

Population, employment, and housing baseline and forecast data for the study area was 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.

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. 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 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*.

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, and population and housing with SCAG forecast numbers

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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 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.¹⁷⁴ There were approximately 5.2 million households and total employment was approximately 6.8 million (see **Table 4.5-1**, 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 865,500 jobs.

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 4.5-2**, LAX-Related Regional Employment and Economic Output - 1996).¹⁷⁵ 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. Most of this impact occurred in the City and County of Los Angeles, and more particularly within a 20-mile radius of LAX.

As shown in **Table 4.5-3**, 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 4.5-1

Existing Conditions 1996 Population, Households and Employment

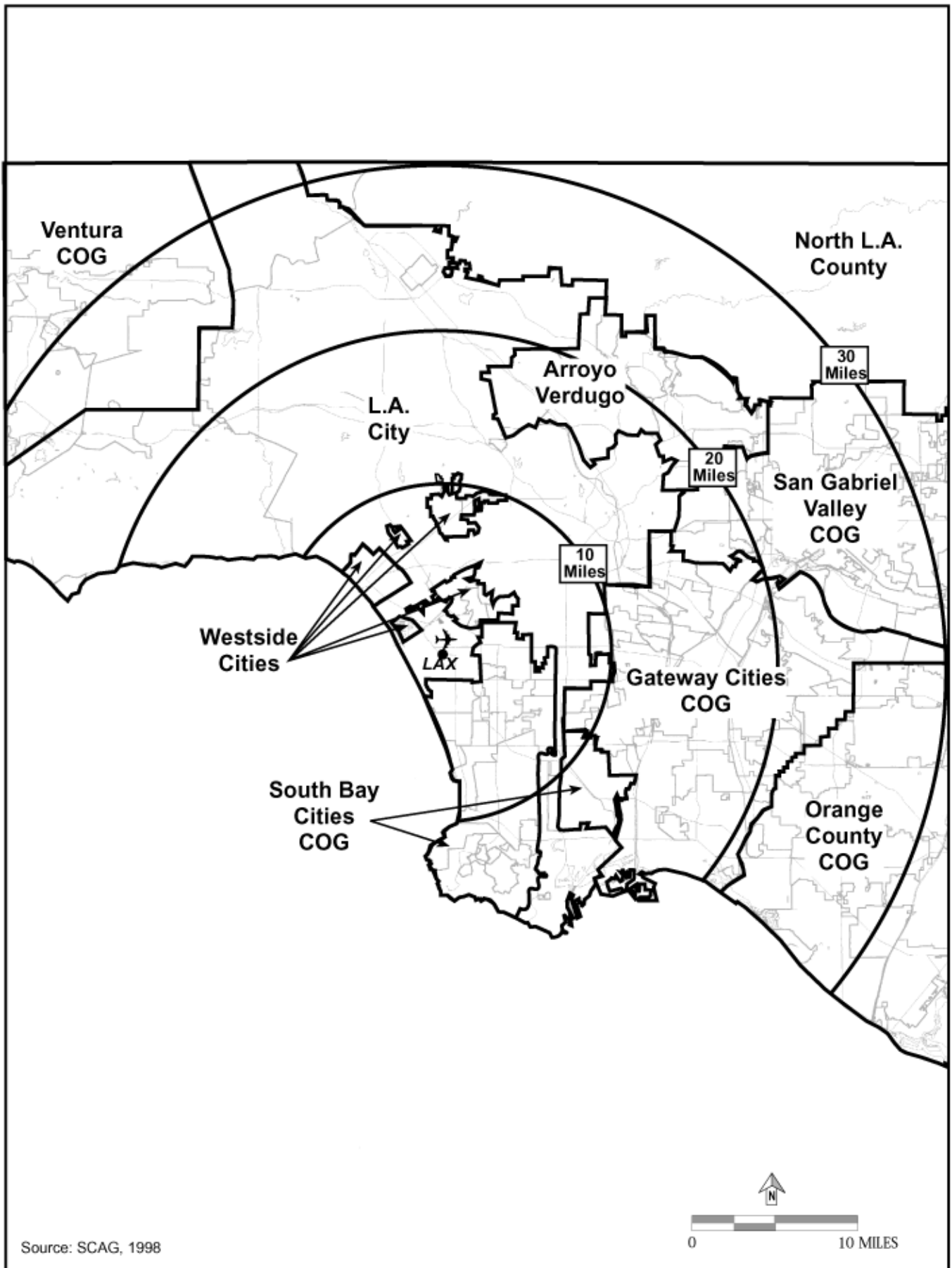
Locations	Population ¹	Households ¹	Employment ¹
0- to 10-Mile Radius	1,832,413	664,948	864,539
0- to 20-Mile Radius	5,611,877	1,906,702	2,609,307
Five-County Region	15,931,274	5,212,382	6,827,650

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.

¹⁷⁴ 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.

¹⁷⁵ Technical Report 5, Economic Impacts Technical Report, HR&A, Inc., May, 2000.



Source: SCAG, 1998

Table 4.5-2

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.

Table 4.5-3

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 FAA Order 5050.4A, *Airport Environmental Handbook*, which focuses on the potential for induce or secondary impacts on surrounding communities.

4.5.4.2 **Federal Standards**

There are no federal standards that define significance thresholds for induced socio-economic impacts.

4.5.5 **Master Plan Commitments**

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

4.5.6 **Environmental Consequences**

Table 4.5-4, 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 4.5-5**, SCAG Forecast for Study Areas, Population,

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Households, Employment Growth 1996-2015. The potential of the alternatives to remove obstacles to population growth or new development is also discussed below.

Table 4.5-4

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

Area	No Action/No Project			Alternatives A & B			Alternative C		
	Emp.	HH	Pop.	Emp.	HH	Pop.	Emp.	HH	Pop.
0- to 10-Mile Radius ¹	-23,024	-3,814	-10,395	16,165	4,863	13,255	7,080	2,641	7,198
0- to 20-Mile Radius ¹	-44,897	-5,683	-15,939	31,522	7,247	20,325	13,805	3,935	11,037
Five-County Region	-57,560	-43,208	-123,637	40,408	30,335	86,806	17,699	13,285	38,017

¹ Population and housing for the 10- and 20-mile radii are based on on-airport employment, for Five-County Region, population and housing is 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.

Source: HR&A, Inc., 2000.

Table 4.5-5

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 (Including Proposed Action)*, cargo and passenger activity characteristics, which fuel job growth, are especially pertinent to the evaluation of induced socio-economic impacts.

Although LAX would support 424,872 jobs in the region in 2005, there would be a decrease in employment and associated employee households and population by 2015 under the No Action/No Population Alternative, as shown in **Table 4.5-4**. 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, as no significant changes or expansion of infrastructure is proposed, which would open up new areas to population growth.

4.5.6.2 Alternative A - Added Runway North

Under Alternative A, described in Chapter 3, *Alternatives (Including Proposed Action)*, 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 97,836 jobs, which, with the multiplier effect taken into account, translates to a total construction employment impact in the county with 211,507 jobs.

The incremental increase in LAX-related employment over 1996 baseline conditions (shown in **Table 4.5-4**) would total 40,408 jobs. Approximately 78 percent of these jobs (31,522) would be located within a 20-mile radius of LAX, 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 growth forecast by SCAG for the 1996 to 2015 period. Although direct jobs associated with LAX would total 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.

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 jobs in the five-county region, 76,837 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 4.5-4**. 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 less than 1 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.

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 Section 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 less than 3 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

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utilities and infrastructure are readily available. One exception would be the nearby Playa Vista Project, which includes over 13,000 units proposed for construction in a largely 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 data, which indicates that well over 20,000 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 in 1999.¹⁷⁶ The 20,000 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 over a 15-year period could be easily accommodated within overall forecast housing growth. The forecast increase in housing supply is independent of existing housing units, which would be available on the market, that could also address demand for new employee households.¹⁷⁷ 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 less than one percent of forecast growth.

Demand for public utilities and services associated with induced housing and population growth is presented in **Table 4.5-6**, Induced Growth Public Utility Demand (1996-2015), and in **Table 4.5-7**, 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*, and Section 4.26, *Public Services*. 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 is 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*, Mitigation Measure MM-SW-1, Provide Landfill Capacity.

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.

¹⁷⁶ Barton-Aschman Associates, Inc., Revised Related Projects List for LAX Master Plan EIS/EIR, September 29, 1999.

¹⁷⁷ 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.

Table 4.5-6

Induced Growth Public Utility Demand (1996-2015)

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

- ¹ Based on a factor of 1.23 tons per year per dwelling unit. (See Technical Report 10, *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*.)
- ⁵ Based on a factor of 79.980 thousand cubic feet per dwelling unit per year. (See Technical Report 8, *Energy Supply Technical Report*.)

Source: PCR Services Corporation, 2000.

Table 4.5-7

Induced Growth Public Service Demand (1996-2015)

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

- 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 of dwelling unit.

Source: PCR Services Corporation, 2000.

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 2000.¹⁷⁸ 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*

¹⁷⁸ Colliers Seeley, *First Quarter 2000 Industrial Market Watch*, South Bay, 2000.

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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 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 each alternative's 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 109,944 jobs directly involved in construction (12,108 more jobs than Alternative A) and 237,334 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 significantly greater growth expected over 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 (Including Proposed Action)*, 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 \$82.1 billion and total direct jobs of 425,368 throughout the region by 2015. This employment level is lower than Alternatives A and B because of the lower MAP and cargo totals associated with the alternative. The incremental increase in LAX-related employment over 1996 baseline conditions would total 17,695 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 the other build alternatives, job growth under Alternative C would account for even a 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 less than 1 percent of SCAG's forecast growth for the area.

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.

Population and Housing Growth

With fewer jobs under Alternative C than the other build alternatives, 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 total population) would reside in 3,935 households within a 20-mile radius of LAX. Approximately 7,198 (19 percent of total 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. Over the entire region, population growth would represent four tenths of 1 percent of forecast growth, and estimated households would represent one tenth of 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 2 percent of forecast growth.

Alternative C would generate substantially more indirect population and housing growth than the No Action/No Project Alternative due 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. However, 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 only 2 percent of the increase in housing expected by these jurisdictions. 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*, and Section 4.26, *Public Services*.

4.5 Induced Socio-Economic Impacts

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 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.

4.5.7 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

None of the build alternatives would have a significant impact on induced socio-economics (growth-inducement); therefore, no mitigation is required.