Topical Responses

TR-ALT-1: Range of Alternatives

Introduction

A number of comments were submitted on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR questioning the range of alternatives evaluated in each of these documents. In general, these comments expressed the following concerns, all of which are addressed within this topical response.

- The Draft EIS/EIR and the Supplement to the Draft EIS/EIR did not consider a sufficient number of alternatives;
- The Draft EIS/EIR did not consider alternatives that were less intensive, or that would have fewer impacts, than Alternative C;
- The Draft EIS/EIR did not consider alternatives that would distribute aviation activity and resulting environmental impacts to other airports in the region;
- The Supplement to the Draft EIS/EIR did not consider variations of Alternative D that focus on safety and security;

Discussion

Number of Alternatives Considered in the Draft EIS/EIR

LAWA spent over four years studying a wide range of concepts for the LAX Master Plan prior to the preparation of the Draft EIS/EIR. As described in Chapter 3, Alternatives, of the Draft EIS/EIR, and in greater detail in Chapter 5, Concept Development, of the Draft LAX Master Plan, LAWA undertook a three-step process for developing alternatives for consideration in the Draft EIS/EIR.

In the 1st Iteration, nine options were evaluated within three broad themes, including the minimal change theme, in which all improvements would stay within the existing airport property; the major expansion theme, which would include some acquisition to allow for new facilities; and the new airport theme, in which a new airport would be constructed on land to the north or south, or on fill within the ocean to the west. During the 2nd Iteration, more than 20 development concepts relating to the minimal change option and the major expansion options were evaluated.

Four concepts from the 2nd Iteration were carried forward into the 3rd Iteration for further analysis. These concepts included a five-runway alternative, two six-runway alternatives, and a five-runway alternative that would entail construction of the fifth runway at Hawthorne Airport. These alternatives were originally intended to be the alternatives evaluated in the Draft EIS/EIR, and were included in the NOI and NOP distributed in June 1997. However, in response to the public comments received during the scoping process, LAWA further refined the concepts, eliminating three of the four, and proposing two new concepts. The three refined concepts included an added runway north alternative (now referred to as Alternative A), a six-runway alternative, and an added runway south alternative (now referred to as Alternative B).

LAWA prepared an Administrative Draft EIS/EIR that analyzed the three alternatives. As a result of the environmental analysis, the six-runway alternative was eliminated from further consideration. Moreover, based on the potentially significant impacts associated with the remaining two alternatives--particularly, impacts relating to air quality, noise, business disruption and acquisition, and disruption of airfield operations--the decision was made by LAWA and FAA to develop a scaled-down (four-runway) alternative, in compliance with the CEQA Guidelines, that might "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." The new four-runway alternative would meet a portion of the region's aviation demand while fulfilling the overall project purpose and objectives with fewer and less severe environmental impacts. Thus, in the context of the Draft EIS/EIR, Alternative C represented a less intensive alternative than those originally considered. In order to be responsive to community concerns, Alternative C became the LAWA staff-preferred alternative because it had fewer impacts to the surrounding community than the other alternatives under consideration at the time.

Inclusion of a Regional Approach Alternative in the Supplement to the Draft EIS/EIR

Many commentors to the Draft EIS/EIR requested that FAA and LAWA consider a regional approach to meeting aviation demand. Specifically, the commentors requested development of a plan that would shift future aviation demand to other airports in the region.

It should be noted that all three of the build alternatives analyzed in the Draft EIS/EIR assume that regional airports will accommodate an increasing share of the regional demand in the future, with a resulting reduction in LAX's share of the regional market from 75 percent in 1997 to 67 percent in 2015 (under Alternative C). The Draft LAX Master Plan assumed that passenger activity at Ontario International Airport would grow from its 1997 activity level of 6.3 MAP to as much as 20.7 MAP (see Table 1-13 of the Draft EIS/EIR). Palmdale Regional Airport, which currently has no scheduled air service, was assumed to accommodate up to 0.7 MAP in 2015. (LAWA is currently in the process of preparing Master Plans for Ontario International and Palmdale Regional airports.) Other airports in the region were also projected to assume an increasing share of the regional demand.

Nevertheless, as indicated above, following the publication of the Draft LAX Master Plan and the Draft EIS/EIR in January 2001, public comment called for a regional approach alternative, whereby growth at LAX would be planned so as to encourage other airports in the region to accommodate future air travel demand. The terrorist attacks that occurred on September 11, 2001, greatly elevated the issue of airport security. In response to these events, the newly elected Mayor of Los Angeles directed the Los Angeles Board of Airport Commissioners to develop a new LAX Master Plan alternative that, consistent with public comment calling for a regional approach alternative, would be designed to accommodate passenger and cargo activity levels at LAX that would approximate those of the No Action/No Project Alternative, have fewer environmental impacts than the No Action/No Project Alternative and, in light of the events of September 11, 2001, would be designed to enhance airport safety and security.

Alternative D, the Enhanced Safety and Security Plan, was developed in consultation with LAWA staff and the FAA as a fifth alternative within the existing Master Plan process. Facilities that comprise Alternative D are designed to serve approximately 78.9 million annual passengers (MAP) and 3.1 million annual tons (MAT) of air cargo activity, which is similar to the activity level identified in the scenario adopted by the Southern California Association of Governments' (SCAG's) Regional Council for the 2001 Regional Transportation Plan (RTP). This level of aviation activity is also equivalent to the No Action/No Project activity level, which is projected to accommodate approximately 78.7 MAP and 3.1 MAT of air cargo. The facilities planned for Alternative D would reduce airport congestion and delay by accommodating less of the projected regional aviation demand at LAX than Alternative C and would encourage the growth of aviation activity at airports other than LAX. Alternative D would also reduce environmental impacts of the airport as compared to the No Action/No Project Alternative.

The Supplement to the Draft EIS/EIR provided a comprehensive analysis of Alternative D and was circulated for public review and comment. Although the Draft EIS/EIR concluded that Alternative C would have the fewest negative impacts to the surrounding communities and the region, that conclusion was superseded by the conclusion of the Supplement to the Draft EIS/EIR. Alternative D is now considered to be the Environmentally Superior alternative and would have the fewest negative impacts to the local communities and the region. The rationale behind the selection of Alternative D as the Environmentally Superior alternative is provided in Chapter 3, Alternatives (subsection 3.5), of the Final EIS/EIR. As indicated in that discussion, environmental impacts associated with operation of LAX, such as aircraft noise, land use plans and policies, traffic, and air quality including human health risk, were found to be lowest under Alternative D when compared to the environmental impacts of the other three build alternatives (Alternatives A, B, and C), as well to future (2015) conditions under the No Action/No Project Alternative.

Consideration of Alternative Configurations for Alternative D

A number of commentors questioned why LAWA did not consider more than one "regional approach" alternative. Appendix H, Concept Development, of the Draft Master Plan Addendum, comprehensively discusses the genesis and development of the Alternative D concept. As indicated in the Appendix, the development of Alternative D was an iterative process, involving multiple concepts overall, as well as multiple variations of each major component of Alternative D (e.g., CTA, GTC, RAC, ITC, APM).

In the initial concept classification category, five concepts were developed that evaluated a broad range of options for enhancing safety and security by removing private and commercial vehicles from the CTA, creating new permanent passenger pick-up and drop-off facilities, increasing short- and long-term parking capacity, and providing a direct automated people mover system to facilitate the movement of passengers and airport visitors. As Manchester Square emerged as the preferred location for passenger pick-up and drop-off facilities, six new concepts were developed that evaluated various configurations to accommodate facilities that included passenger pick-up and drop-off facilities, terminal facilities, parking facilities, APM stations, access roadways, and an MTA facility. At further stages of concept refinement, eight Alternative D refined concepts were considered.

Once an overall Alternative D concept was identified, numerous options were considered for each individual project component. For example, eight optional designs for the RAC were considered, five options for the ITC were developed, and seven variations of the CTA/APM interface were identified.

Range of Alternatives Considered

NEPA and CEQA both define the range of alternatives to be considered in an environmental impact document. The Council on Environmental Quality's (CEQ) regulations implementing NEPA state that the environmental impact statement "...shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. §1502.1. The CEQ regulations also state that "The range of alternatives discussed in environmental impact statements shall encompass those to be considered by the ultimate agency decisionmaker." 40 C.F.R. §1502.2(e).

CEQA imposes a similar obligation to analyze alternatives to the agency's proposal. The purpose for evaluating a range of alternatives pursuant to CEQA is to identify ways to mitigate or avoid the significant effects that a project may have on the environment (CEQA Guidelines Section 15126.6(b)). The State CEQA Guidelines state: "An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." (Section 15126.6(a)) Section 15126.6 provides that "An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decisionmaking and public participation." The section further states that that "the lead agency is responsible for selecting a range of project alternatives for examination" and "there is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason." Section 15126.6(f) clarifies that an EIR must "set forth only those alternatives necessary to permit a reasoned choice."

As noted above, LAWA spent many years undertaking a rigorous evaluation of dozens of Master Plan concepts prior to selecting Alternatives A, B, and C for detailed evaluation. This refinement continued even after preparation of the Draft EIS/EIR was initiated. LAWA originally planned to evaluated three build alternatives in the Draft EIS/EIR that each included the addition of at least one runway. Subsequently, the six-runway alternative was eliminated from consideration and was replaced with Alternative C, a no additional runway alternative. In response to public comment, LAWA later added Alternative D, a no expansion alternative. A similar process of rigorous evaluation of dozens of concepts was undertaken in the design of Alternative D. The four build alternatives currently under consideration offer a variety of proposed facilities and configurations. These alternatives also represent a wide range of activity levels, from 78.9 MAP and 3.1 million annual tons (MAT) of cargo under Alternative D to 97.9 MAP and approximately 4.2 MAT under Alternatives A and B. All of the build alternatives would meet most if not all of the basic objectives of the LAX Master Plan, outlined in Chapter 2, Purpose and Need, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Also, two of the alternatives, Alternatives C and D, would avoid or lessen some of the adverse effects associated with the other two build alternatives (Alternatives A and B).

TR-APPK-1: Appendix K - Refined Analysis of LAX Expressway and State Route 1 (SR-1) Impacts

Introduction

As part of the public review of the LAX Master Plan Draft EIS/EIR, several comments were received regarding potential impacts associated with the proposed LAX Expressway and State Route 1 (SR-1) off-airport roadway improvements. The purpose of this topical response is to further explain the level of analysis provided in Appendix K, Supplemental Environmental Evaluation for LAX Expressway and State Route (SR-1) Improvements, of the Draft EIS/EIR.

Discussion

The LAX Master Plan Draft EIS/EIR is presented in several volumes. General discussion of environmental impacts of the proposed LAX Expressway and State Route 1 (SR-1) improvements is included throughout various sections and volumes of the Draft EIS/EIR. Appendix K of the Draft EIS/EIR presents an environmental impact analysis based on preliminary design plans and focused specifically upon the proposed improvements for: LAX Expressway Alternative 2 - Split Viaduct; LAX Expressway Alternative 3 - Single Viaduct; SR-1 Alternative 2 - Diamond Interchange; and SR-1 Alternative 3 - Urban Interchange. The level of analysis provided in Appendix K of the Draft EIS/EIR identifies, in general terms, the potential environmental impacts associated with individual state highway facility projects that may be adopted as components of LAX Master Plan Alternatives A or C. The framework and guidelines for the analysis presented in Appendix K follow Federal Highway Administration (FHWA) standards, which comply with the regulatory requirements of the National Environmental Policy Act (NEPA).

At this stage in the planning process, the alignments and design elements for the proposed LAX Expressway and SR-1 improvements are based on preliminary design plans. Therefore, a more refined analysis of environmental impacts of the LAX Expressway and SR-1 improvements cannot be concluded until engineering details are more fully developed as part of the final design phase of the improvement components. Should an LAX Master Plan Alternative be adopted that includes the LAX Expressway and/or SR-1 improvements as project components, final selection and documentation of the LAX Expressway and SR-1 project design will be made upon completion of additional Caltrans project design phases and CEQA review. The findings of the environmental evaluation documented in Appendix K and other volumes of the LAX Master Plan Draft EIS/EIR will assist in guiding this process.

A refined analysis of short-term construction impacts and long-term environmental impacts relating to air quality, noise, water quality, cultural resources, aesthetics, traffic, and other potential environmental impact areas will be conducted when additional design and engineering details are identified as a result of the preparation of the Caltrans Project Study Report (PSR), Project Report (PR), and the Plans, Specifications, and Estimates (PS&E) phases of the Caltrans Project Development process. The Caltrans PSR process will ultimately generate the project information to allow a refined project-level analysis of potential environmental impacts by topical areas and additional mitigation measures in compliance with CEQA regulations. Through this process, the public will have additional opportunities to review and comment on the refined project plans and environmental impacts. The LAX Master Plan EIS/EIR and the Caltrans PSR must be fully approved before construction can begin on the LAX Expressway and SR-1 improvements.

TR-APPK-2: Appendix K - LAX Expressway and State Route 1 (SR-1) Property Acquisition and Relocation

Introduction

Several comments were received on the LAX Master Plan Draft EIS/EIR regarding potential impacts associated with the proposed LAX Expressway and State Route 1 (SR-1) off-airport roadway improvements; particularly as it relates to property acquisition and relocations. The purpose of this topical response is to further explain the level of analysis provided in Appendix K, Supplemental Environmental

Evaluation for LAX Expressway and SR-1 Improvements, of the Draft EIS/EIR and potential associated property acquisitions and relocation impacts associated with the LAX Expressway and the SR-1 improvements proposed under Alternatives A, B, and C.

Discussion

The alignments and property impacts of the proposed LAX Expressway and SR-1 improvements are based on preliminary plans and have not been finalized with respect to exact alignments or necessary property acquisitions. More detailed design plans, engineering characteristics, and precise right-of-way requirements for these off-airport roadway improvements would be finalized only if such projects are adopted. Appendix K of the Draft EIS/EIR documents the property parcels along the alignments of the proposed state highway improvements that would likely be directly or indirectly impacted by the projects. Until more detailed project plans are finalized, it is not known precisely which residences and businesses within these property parcels would actually need to be relocated as a result of the LAX Expressway or SR-1 improvements.

Programs and projects funded in whole or part by federal funding sources are governed by federal relocation laws and regulations. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) was passed by Congress to govern relocation activities. The Uniform Act stipulates that all homeowners, renters, and businesses relocated as a result of the LAX Expressway and SR-1 improvement projects are entitled to fair compensation and relocation assistance.

If the LAX Expressway and SR-1 improvement projects are approved for implementation, a Residential and Business Relocation Plan will be implemented in full compliance with federal law regarding compensation and assistance to any relocated residents and businesses resulting from the projects. Each potentially affected resident or business will be contacted and provided specific information concerning relocation impacts, available assistance, and benefits associated with any required relocation.

For more information regarding relocation assistance for affected residents and businesses please see Section 4.4.2, Relocation of Residences or Businesses, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, and Master Plan Commitment RBR-1 located therein, and Topical Response TR-RBR-1. Finally, please also refer to Topical Response TR-APPK-1 for more information regarding the level of analysis provided in Appendix K of the Draft EIS/EIR for the off-airport roadway improvements future levels of environmental analysis if such components are adopted as part of the LAX Master Plan.

TR-AQ-1: Deposition, Soot and Fuel Dumping

Introduction

A number of comments pertaining to air quality referred to the atmospheric deposition of soot, dust and other forms of particulate matter from aircraft engines. Similar comments also were made in connection with the issue of fuel dumping in the vicinity of the airport. Because these comments are somewhat related, the following information provides a consolidated response that addresses the following topics:

- Deposition of (air) pollutants in urban areas;
- Deposition studies conducted near airports; and
- Fuel dumping from aircraft.

Taken together, this information addresses the occurrence of atmospheric deposition in general, and the potential contribution from aircraft, in particular.

Discussion

Deposition of air pollutants in urban areas

The term "deposition" refers to the gravitational fallout of material (both solid and liquid) from the atmosphere. Commonly, this material, called particulate matter, consists of dust and soot that can form deposits or cause discoloration on outdoor surfaces (i.e., building materials, motor vehicles, small water bodies, etc.).

In most urban areas (including the South Coast Air Basin), the sources of atmospheric deposition are numerous and varied. Typical sources include motor vehicles (including the exhaust emissions and the entrainment of dust from paved and unpaved roadways by the action of vehicle tires on these surfaces) and other forms of transportation (i.e., ships, trains, planes); factories, power plants and manufacturing facilities; and construction projects. Wind blown dust from distant agricultural activities and miscellaneous natural sources (e.g., deserts, forest fires, marine spray, etc.) also contribute. In the case of marine spray, wave action results in the formation of bubbles rising and bursting at the water surface. As the bubbles burst, small droplets with dissolved organics may be ejected into the air and carried by the wind.

While it is difficult to estimate with any accuracy the amount of deposition from specific sources due to large uncertainties, it is reasonable to state that urban aerosols are dominated by emissions from human activities.

Deposition studies conducted near airports

Three studies have recently been undertaken to evaluate the deposition of soot, dust and other airborne particulate matter in the vicinities of large metropolitan airports - including LAX. The studies are very limited and are preliminary, but provide a basis for understanding the current state of knowledge on this topic.

- **Boston-Logan** -The first of these studies took place in and near Logan International Airport and involved the collection of atmospheric fallout at multiple sites located both on the airport and in nearby communities (Massport, 1996, *Logan Airport Soot Deposition Study*, prepared by KM Chng.; Massport 1997, *Soot Deposition Study: Logan Airport & Surrounding Communities*, prepared by TRC Environmental.). Chemical analyses of the samples were also conducted in an attempt to identify the source(s) of the material. The findings suggest that deposition in the vicinity of Logan International Airport results from the combined effects of many urban-related sources (including motor vehicles, marine aerosols and wind blown dust) and that the contribution from the airport is indistinguishable from background levels.
- **Chicago-O'Hare** - A similar study was conducted in the vicinity of O'Hare International Airport involving the collection of soot / particulate matter and "chemical fingerprinting" of the material (City of Chicago, 1999, *Findings Regarding Source Contribution to Soot Deposition, O'Hare International Airport and Surrounding Communities*, prepared by KM Chng). The results indicate that the samples bore little resemblance to either unburned jet fuel or soot from jet exhaust and concluded that the fallout is most likely from regional pollution (i.e., unattributable to distinct sources).
- **LAX** - Air monitoring studies were also performed in the vicinity of LAX by the South Coast Air Quality Management District (SCAQMD, 2000a,b, *Air Monitoring Study in the Area of Los Angeles International Airport* & *Inglewood Particulate Fallout Study Under and Near the Flight Path to Los Angles International Airport*.). For these studies, samples of atmospheric fallout were collected adjacent to the airport and at numerous residences located in the communities of El Segundo, Inglewood, Lennox, and Hawthorne. While soot particles were present in all the samples and generally in greater abundance than at other locations in the South Coast Air Basin, the studies concluded that there was "no discernable pattern of fallout material under LAX's flight path which would indicate a predominate influence from aircraft." A study commissioned by LAWA in 1998 that collected and evaluated atmospheric deposition samples at six sites surrounding LAX arrived at similar conclusions (LAWA, 1998, Technical Report Deposition Monitoring, prepared by Camp Dresser & McKee / Planning Consultants Research / AeroVironment Environmental Services. Technical Report 4 Attachment Y of the Draft EIS/EIR.).

From all of these studies, it is reasonable to assume that atmospheric deposition of soot, dust and other forms of particulate matter occurs in measurable quantities in the vicinities of these large metropolitan airports. However, because air pollution in urban areas is generated by many different sources (both natural and man-made) and because many of the constituents are petroleum-based (e.g., burned and unburned fossil fuels), it is difficult to isolate and attribute the full impact of airports and aircraft on atmospheric deposition in urban areas.

Fuel dumping from aircraft

Fuel dumping from aircraft (either while on the ground or airborne) is not allowed at LAX or any U.S. airport, except for emergency situations. There are important regulatory, economic, safety and environmental reasons for this.

For example, FAA regulations prohibit the dumping of fuel from certificated aircraft. (Please see 14 CFR Part 34 and FAA Advisory Circular 34-1B regarding fuel venting regulations). FAA has promulgated strict guidelines on the location, route, and altitude should fuel dumping become necessary. These precautions are designed to avoid or minimize hazardous conditions in the air and on the ground as well as the potential environmental impact. Additionally, the cost for fuel is one of the largest expenses for airlines and cargo carriers. Therefore, fuel conservation is an important and significant cost-saving measure.

In summary, fuel dumping is extremely rare and only occurs in emergency situations to reduce the landing weight and the risk of fire for the distressed aircraft. Whenever possible, it is done at higher altitudes (i.e., greater than 5,000 feet above ground level) and over the ocean so the fuel can evaporate or disperse before reaching ground level.

Often, the white vapor trails emanating from the wing tips of landing aircraft are mistaken for fuel venting. These trails are actually the runoff of water vapor that has condensed on the wings as the colder aircraft descends into the warmer, more humid atmosphere.

TR-AQ-2: Toxic Air Pollutants

Introduction

Numerous comments were received regarding the relationship between air pollutant emissions associated with implementation of the LAX Master Plan, including toxic air pollutants, and impacts to human health. Many of the comments pertaining to this issue are addressed specifically through the responses prepared for individual comments, as well at a more general level through Topical Responses TR-HRA-1 through TR-HRA-4. The discussions presented below address five particular aspects of this issue, as related to the air quality analysis presented in Section 4.6, Air Quality, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, which, in turn, provided much of the data used in completing the human health risk assessment presented in Section 4.24.1, Human Health Risk Assessment, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. The five issues addressed in this topical response include the following:

- LAX Ambient Air Quality and Source Apportionment Study
- Toxic Air Pollutants and Health Risk Assessment
- Fugitive Jet Fuel Evaporation
- Model Calibration
- Secondary Pollutant Formation

Discussion

LAX Ambient Air Quality and Source Apportionment Study

Several comments requested that the LAX Ambient Air Quality and Source Apportionment Study (LAX AQSA, sometimes referred to elsewhere as the Air Toxics Study) be completed and the findings included in the Final EIS/EIR. The LAX AQSA was never intended to be part of the LAX Master Plan documentation. LAWA agreed to support the study to the maximum extent possible, but stated several times that the study would not be tied to the Master Plan. Two important reasons were timing and methods of analysis. In addition, the tragic events of September 11, 2001, have impacted the ability to allocate resources to the LAX AQSA.

LAWA still intends to support the LAX AQSA, however, due to the substantial loss of revenue by airports and airlines after 9/11, funding for the study will need to come from other entities. Currently LAWA is working with the U.S. EPA in an attempt to secure funding for the Pilot Study portion of the LAX AQSA.

The U.S. EPA has conducted a peer review of the study work plan and protocols and completed the peer review report. Since the timing and funding of the LAX AQSA is unknown at this time, the LAX Master Plan and AQSA remain separate studies.

If funded the LAX AQSA Pilot Study will be employing state-of-the-art methods to monitor air pollutant concentrations near a runway at LAX. These methods may not comply with standard monitoring protocols, and interpretation of the data would be innovative, though not yet proven at airports. Thus, relying on the LAX AQSA to describe air quality impacts at LAX would be subject to substantial debate. Therefore, a more traditional health risk assessment approach has been used in the LAX Master Plan Draft EIS/EIR and Supplement to the Draft.

Toxic Air Pollutants and Health Risk Assessment

The LAX Master Plan Draft EIS/EIR does address air toxic emissions from aircraft engines, ground support equipment, vehicle traffic (including cargo trucks), and stationary sources that operate with the airport property. The assessment of health risk associated with airport operations is detailed in Section 4.24.1 and Technical Report 14a of the Draft, and Section 4.24.1, and Technical Report S-14a of the Supplement to the Draft EIS/EIR.

As part of this analysis, research into appropriate emission factors for toxic air pollutants was conducted and resources identified as noted in the references for the Draft and Supplement to the Draft.

Fugitive Jet Fuel Evaporation

Comments suggested that the analysis ignored fugitive vapor emissions from Jet Fuel storage and loading. The California Air Resources Board (CARB) has developed numerous profiles for various sources and has developed one specifically for jet fuel evaporation - Profile 100. This profile includes the following compounds: n-heptane (0.1 percent), n-octane (0.5 percent), n-nonane (4.7 percent), n-decane (19.6 percent), n-undecane (20.3 percent), n-dodecane (18.2 percent), n-tridecane (17.7 percent), n-tetradecane (11.7 percent), and n-pentadecane (7.2 percent). These compounds are not on either the California Office of Environmental Health Hazard Assessment (OEHHA) Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values or the U.S. EPA Hazardous Air Pollutant List in Section 112[b][2] of the Clean Air Act. Therefore, jet fuel evaporation was determined to have a negligible impact on the health risk assessment. However, jet fuel evaporation was included in the VOC emissions inventories developed for each scenario.

Model Calibration

Other comments suggested that dispersion model calibration was not conducted. A study of the EDMS dispersion model was conducted and compared to ambient monitoring data from the station located on LAX property downwind of Runway 27R. The findings of this study are reported in Pehrson, et al (2001) and demonstrated that the model tends to overpredict ambient concentrations associated with aircraft by a factors of 2 to 3 on average and could be much higher when comparing hour by hour. Subsequently, the FAA conducted a study with National Oceanic and Atmospheric Administration at LAX (Wayson, et al. 2003) using LIDAR systems to generate "photographs" of the aircraft exhaust plume while aircraft were taxiing and taking off. The results of the LIDAR study indicated that substantial plume rise occurs shortly after exiting the engine. This plume rise was not accounted for in the EDMS Version 3.2 used in the Draft EIS/EIR criteria pollutant analysis.

The toxic air pollutant analysis used a different model, ISCST3, which incorporated plume rise assumptions. Therefore results from ISCST3 are expected to be reasonably accurate and should be acceptable for disclosure purposes under NEPA and CEQA.

Secondary Pollutant Formation

Finally, several comments suggested that secondary toxic air pollutant formation should be addressed. The formation of secondary air pollutants would be very difficult to assess on a project basis. Atmospheric chemical reactions typically occur over periods of time ranging from minutes to days and are affected by regional emissions, not just the local air quality. To accurately assess secondary pollutant formation would require the analysis of all air emission sources in the South Coast Air Basin as well as determining wind patterns across the basin. The resolution (the ability to identify the location of sources and receptors) of regional models is typically less than the resolution required in local scale models (such

as ISCST3 and EDMS). For example, the resolution of a regional model (such as the Urban Airshed Model, UAM) is typically on the order of several kilometers between grid nodes; the resolution of local models is typically on the order of 10 to 100 meters between grid nodes. In addition, including a regional secondary pollutant analysis would not provide any substantial change in the comparison between alternatives in the LAX Master Plan.

TR-AQ-3: Air Pollution Increase

Introduction

A number of comments were received expressing concern that implementation of the proposed LAX Master Plan would result in substantial increases in air pollution both in the vicinity of LAX and in the region. This topical response summarizes the results of the air quality impacts analysis completed for the LAX Master Plan as presented in Section 4.6, *Air Quality*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. In particular, this topical response focuses on the air quality impacts of the four build alternatives (Alternatives A, B, C, and D) as compared to the air quality impacts of the No Action/No Project Alternative.

Discussion

On-Airport Operational Emissions

The Draft EIS/EIR and the Supplement to the Draft EIS/EIR both addressed the impacts of air pollution in and around the airport in Section 4.6, *Air Quality*. In the absence of any of the build alternatives, criteria pollutant emissions from on-airport operational sources are, with one exception, estimated to increase in the foreseeable future for the No Action/No Project Alternative relative to the Environmental Baseline. The lone exception to this statement, carbon monoxide (CO) from on-airport operational emission sources, is estimated to decrease for the No Action/No Project Alternative relative to the Environmental Baseline by 2015.

Unmitigated criteria pollutant emissions from on-airport operational sources are, with one exception, estimated to decrease in the foreseeable future for all of the build alternatives relative to the No Action/No Project Alternative. The exception referred to in this statement, oxides of nitrogen (NO_x) from on-airport operational emission sources, is estimated to increase slightly for Alternatives A and B relative to the No Action/No Project Alternative by 1.4 percent and 2.6 percent, respectively, in 2015. Air quality mitigation measures proposed in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR would result in all criteria pollutant emissions from on-airport operational sources being estimated to decrease in the foreseeable future for all of the build alternatives relative to the No Action/No Project Alternative. Implementation of any of the build alternatives is expected to have a long-term continuing beneficial effect on air pollutant emissions attributable to on-airport operational emission sources.

Unmitigated criteria pollutant emissions from on-airport operational sources are, with two exceptions, estimated to decrease in the foreseeable future for all of the build alternatives relative to the Environmental Baseline. The exceptions referred to in this statement, oxides of nitrogen (NO_x) and sulfur dioxide (SO_2), are estimated to increase for all build alternatives relative to the Environmental Baseline in both the interim year and in 2015. Air quality mitigation measures proposed in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR would result in all criteria pollutant emissions from on-airport operational sources being estimated to decrease in the foreseeable future for all of the build alternatives relative to the Environmental Baseline, with two exceptions. One exception is for NO_x which is estimated to increase for Alternatives A, B, and C relative to the Environmental Baseline in both the interim year and in 2015, and for SO_2, which is estimated to increase for all build alternatives relative to the Environmental Baseline in both the interim year and in 2015.

Several commentors reference a 1300 percent increase in emissions due to the Master Plan. It is unclear as to what the comment is referring, as such an increase is not based on the information in, or calculations for, the air quality analysis completed for the Draft EIS/EIR. Since publication of the Draft EIS/EIR, all pollutant emission values have been revised. Please see Section 4.6, *Air Quality*, of the Supplement to the Draft EIS/EIR concerning the calculation of air pollutant emissions and a discussion of results.

The ambient concentrations of all criteria pollutants attributable to unmitigated on-airport operational emission sources are, with one exception, predicted to be less than the respective NAAQS and CAAQS in the vicinity of the airport in the foreseeable future for all build alternatives. The only exception to this statement is for the 24-hour PM_{10} CAAQS, which is predicted to be exceeded in the future years analyzed, primarily due to an estimated high future background concentration (e.g., the background 24-hour PM_{10} concentration in 2005 is estimated to exceed the CAAQS). It should be noted that SCAQMD stated, in its 2003 AQMP (Appendix V Chapter 2), that none of the sites in the South Coast Air Basin will meet the 24-hour PM_{10} CAAQS in either 2006 or 2010, even with proposed emission controls. Implementation of any of the build alternatives is not predicted to contribute to unexpected exceedances of any NAAQS or CAAQS attributable to on-airport operational emission sources in the vicinity of the airport in the foreseeable future.

Construction Emissions

The construction-related criteria pollutant emissions attributable to all build alternatives are, with one exception, estimated to be greater than the construction-related criteria pollutant emissions attributable to the No Action/No Project Alternative for comparable years analyzed. The exception referred to in this statement is that the mitigated construction-related emissions of VOC and SO_x attributable to all build alternatives are estimated to be less than the construction-related criteria pollutant emissions attributable to the No Action/No Project Alternative for comparable years analyzed. It should be noted that construction-related emissions are temporary and vary dramatically from year to year throughout the construction period, thus they do not represent a permanent or discrete burden on the atmospheric carrying capacity of the South Coast Air Basin. Furthermore, as a result of construction of any of the build alternatives, the South Coast Air Basin will gain the long-term continuing beneficial effect on air quality attributable to the increased efficiency of on-airport operational emission sources.

Combined On-Airport Operational and Construction Concentrations

The ambient concentrations of CO and SO_2 attributable to mitigated, combined on-airport operational emission sources and construction-related emission sources are, with one exception, predicted to be less than the respective NAAQS and CAAQS in the vicinity of the airport in the foreseeable future for all build alternatives. The exception referred to in this statement is for the 8-hour CO NAAQS and CAAQS, which is predicted to be exceeded in the interim year analyzed for Alternative A. The ambient concentrations of NO_2 attributable to mitigated, combined on-airport operational emission sources and construction-related emission sources are, with one exception, predicted to be less than the respective NAAQS and CAAQS in the vicinity of the airport in the foreseeable future for all build alternatives. The exception referred to in this statement is for the annual NO_2 NAAQS, which is predicted to be exceeded in the interim year analyzed for Alternatives A, B, and C. The ambient concentrations of PM_{10} attributable to mitigated, combined on-airport operational emission sources and construction-related emission sources are, with two exceptions, predicted to be greater than the respective NAAQS and CAAQS in the vicinity of the airport in the interim year and in 2015 for all build alternatives. The exceptions referred to in this statement are for the annual PM_{10} NAAQS, which is predicted to be met in the interim year for Alternative D and in 2015 for Alternatives A, B, and D; and for the annual PM_{10} CAAQS, which is predicted to be met in 2015 for Alternative D. This information supports the conclusion that Alternative D is the environmentally superior build alternative.

Off-Airport Regional Emissions

In the absence of any of the build alternatives, criteria pollutant emissions from off-airport regional sources related to airport travel demand are estimated to increase in the foreseeable future for the No Action/No Project Alternative relative to the Adjusted Environmental Baseline. Mitigated criteria pollutant emissions from off-airport regional sources related to airport travel demand are estimated to decrease in the interim year analyzed for all of the build alternatives relative to the No Action/No Project Alternative. However, mitigated criteria pollutant emissions from off-airport regional sources related to airport travel demand (with the exception of VOC) are estimated to increase in 2015 for Alternatives A, B, and C relative to the No Action/No Project Alternative while mitigated criteria pollutant emissions from off-airport regional sources related to airport travel demand are estimated to decrease in 2015 for Alternative D relative to the No Action/No Project Alternative. Implementation of Alternative D is therefore expected to have a long-term continuing beneficial effect on air pollutant emissions attributable to off-airport regional emission sources related to airport travel demand.

Mitigated criteria pollutant emissions from off-airport regional sources related to airport travel demand are estimated to increase in the interim year analyzed for Alternatives A, B, and C relative to the Adjusted Environmental Baseline. Mitigated emissions of PM_{10} from off-airport regional sources related to airport travel demand are also estimated to increase in the interim year analyzed for Alternative D relative to the Adjusted Environmental Baseline. Likewise, mitigated criteria pollutant emissions from off-airport regional sources related to airport travel demand are estimated to increase in 2015 for all build alternatives relative to the Adjusted Environmental Baseline.

Off-Airport Regional Concentrations

The ambient concentrations of CO "hot spots" attributable to unmitigated off-airport regional emission sources related to airport travel demand are predicted to be less than the respective NAAQS and CAAQS at roadway intersections in the vicinity of the airport expected to be most affected by airport-related traffic in the foreseeable future for all build alternatives. Implementation of any of the build alternatives is not predicted to contribute to exceedances of the CO NAAQS or CAAQS attributable to off-airport regional emission sources related to airport travel demand in the vicinity of the airport in the foreseeable future.

Atmospheric Dispersion of Air Pollutants

The air quality analyses performed for the LAX Master Plan and reported in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR used dispersion modeling to predict the ambient air concentrations of criteria pollutants emitted by emission sources at the airport. The dispersion models used in these analyses are based on the well-known Gaussian, or normal, distribution function. The models solve this function for diffusion in the vertical and the horizontal dimensions in the downwind transport direction. Although the models calculate a number of variables using input data that describe the emission source as well as meteorological parameters, they generally show that ambient air concentrations decrease with increasing distance from the source, with increasing distance from the centerline of the transport plume, and with increasing averaging time. That is, the highest concentrations are predicted close to the emission sources and for short averaging times (e.g., one hour). While these models are not infallible and are subject to uncertainties, they have been found to give useful results for many practical applications. Studies of model accuracy have consistently confirmed the following conclusions: (1) dispersion models are more reliable for predicting long-term concentrations than for estimating short-term concentrations at specific locations; and (2) dispersion models are reasonably reliable in predicting the magnitude of the highest concentrations occurring, without respect to a specific time or location. All of the models used for these analyses are considered preferred by EPA.

For these reasons, even though the models can calculate an ambient air concentration at any three-dimensional location (receptor) relative to an emission source or collection of sources, the farther the receptor is from the source, the smaller will be the concentration associated with that source, in general. This is true in the horizontal and the vertical. For example, emissions from an aircraft idling on a taxiway or taking off from a runway will contribute rapidly decreasing amounts to ambient air concentrations at farther distances downwind from the airport. Also, as an aircraft climbs away from the airport, the contribution of its emissions to ground-level ambient air concentrations will rapidly diminish. After an aircraft rises through the planetary boundary layer in the lower troposphere (the top of the atmospheric mixing height), the continuing emissions tend not to be advected to the ground, since the vertical temperature structure which causes the boundary layer to form acts as a lid to keep emissions above it from penetrating below it. Thus, impacts on ambient air quality from activities on site at LAX will tend to be greatest in the immediate vicinity of the airport and almost immeasurably small in other portions of the South Coast Air Basin.

New Ambient Air Quality Standards

Since publication of the Draft EIS/EIR, the U.S. Supreme Court has upheld the new eight-hour NAAQS for ozone (O_3) and the new 24-hour and annual NAAQS for particulate matter with an equivalent aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), all of which USEPA promulgated in July 1997. While these standards were the subject of judicial challenges, they are currently in force and in the process of being implemented by USEPA, California Air Resources Board (CARB) and SCAQMD. USEPA has not designated nonattainment/attainment areas for these standards, but is expected to do so starting in 2004; however, SCAQMD staff expects that the South Coast Air Basin will be declared in nonattainment for these standards when USEPA promulgates area designations. Because

ozone is a regional pollutant and can only be predicted using regional photochemical models that account for all sources of precursors in the South Coast Air Basin, it is beyond the scope of this document to address the future attainment of either the one-hour or eight-hour O_3 ambient air quality standards. Until USEPA issues guidance on the implementation of the $PM_{2.5}$ ambient air quality standards, that agency has recommended that compliance with the PM_{10} standards be considered a surrogate for compliance with the $PM_{2.5}$ standards [U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, *Interim Implementation of New Source Review Requirements for $PM_{2.5}$*, Memorandum from John S. Seitz, Director (October 24, 1997)] and the analysis in the Supplement to the Draft EIS/EIR followed that guidance. It should be noted that CARB has established new, stricter CAAQS for PM_{10} and $PM_{2.5}$, which became effective on July 5, 2003. For additional information on the NAAQS and CAAQS, please see Section 4.6.3.1, Federal and State Regulatory Framework, of the Supplement to the Draft EIS/EIR.

TR-BC-1: Habitat Evaluation Procedure (HEP) Analysis and Use of Modified HEP Methodology

Introduction

A number of comments on the Draft EIS/EIR questioned the use of a modified Habitat Evaluation Procedure (modified HEP) to determine project impacts and mitigation requirements. This topical response addresses questions and comments about the validity of using a modified HEP, as compared to the methodology designated by the USFWS (HEP). Specifically, the following is a discussion of the modified HEP and its new designation as a Mitigation Land Evaluation Procedure (MLEP). In addition, the MLEP methodology, including the use of reference sites, habitat variables and habitat units are addressed in detail. Lastly, the use of the MLEP methodology to determined project impacts and mitigation requirements is discussed.

Discussion

Clarification of the modified HEP is provided in Section 4.10, Biotic Communities, of the Supplement to the Draft EIS/EIR. Modified versions of HEP procedures are performed often for impact assessments as long as sound scientific reasoning is used and assumptions, modifications and adjusted models are well explained.[1,2] The U.S. Army Corps of Engineers has created a manual for conducting and creating modified HEP's and is used routinely by agency personnel and consultants.[3] Furthermore, the modified HEP was given a new designation as recommended by the USFWS and following public review of the Draft EIS/EIR to eliminate confusion associated with a similarity in the designation to an unrelated methodology developed by the USFWS. A MLEP was used to evaluate project impacts to biotic communities and to determine mitigation requirements.

A MLEP is a model comparing the overall habitat quality of biotic communities to ideal habitat conditions. The MLEP conducted for the LAX Master Plan EIS/EIR analysis compared the overall habitat quality of biotic communities at LAX to the idealized habitat condition represented by two reference sites. The selected reference sites were intended to represent the Valley Needlegrass Grassland/Vernal Pool complex historically present at LAX [4,5,6] because current biological conditions within the Master Plan study boundaries are quite poor. Approximately 90% of undeveloped areas within the study boundaries exist as non-native grassland/ruderal or disturbed/bare ground vegetation designations. As such, these areas

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1 Christian Dellith, *Personal Communication,* 3 October 2003. United States Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road Suite B, Ventura, CA 93003

2 Rick Ware, *Personal Communication*, 9 October 2003. Coastal Resources Management, 3334 East Coast Highway, Corona del Mar, CA 92625.

3 Wakeley, J.S. and L.J. O'Neil, 1998. *Alternatives to increase efficiency and reduce effort in application of the Habitat Evaluation Procedures (HEP).* Technical Report EL-88-13. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

4 Pierce, W.D. and D. Pool, The Fauna and Flora of the El Segundo Sand Dunes, Bulletin of the Southern California Academy of Sciences, Vol. 37:93-97,1938.

5 Los Angles Extension Company, Inglewood Extension Company, Historical Topographic Map, Source: Johnson, Fein, and Associates, 1918.

6 Mattoni, R. and T.R. Longcore, The Los Angeles Coastal Prairie, A Vanish Community, Crossosoma 23(2): 71-102, 1997.

provided little habitat for native floral and faunal resources. Non-native grasses and ruderal species at LAX out-compete the native species for space resulting in only a representation of a few hardy native species. The MLEP was utilized to evaluate impacts to all biotic communities taking into consideration the poor habitat quality of existing undeveloped areas.

Outlined below is an explanation of a HEP as used by the USFWS and clarification of the methodology used for the MLEP.

Habitat Evaluation Procedure (HEP)

According to the USFWS Division of Ecological Services' *Habitat as a Basis for Environmental Assessment*, a HEP is a species-habitat approach to impact assessment, in which habitat quality for selected evaluation species is documented with a habitat suitability index (HSI).[7] A HEP individually calculates HSIs for target species through the creation of species-specific HSI models. An HSI is developed for each species and considers the specific habitat variables that supply that species food, cover, and reproductive requirements. According to the USFWS HEP manual, the first step is defining the study area, the second step is to define the cover types, and the third step is to select the target species. The end result is an index of habitat suitability (HSI) between 0.0 and 1.0. HSI values are calculated by dividing the study area habitat condition (actual) by the optimum habitat condition (optimum). The HSI values are multiplied by the habitat acreage yielding habitat units (HU). Reference sites are typically not used in a HEP, although ideal habitat conditions determine optimum habitat values. The USFWS HEP protocol estimates that, for terrestrial studies, 10-15 sample sites for a minimum of three cover types is sufficient to obtain reasonably reliable data. The amount of time required for data collection and analysis generally corresponds to the number of cover types selected.[8]

Mitigation Land Evaluation Procedure (MLEP)

A MLEP is defined as a model comparing the overall habitat quality of biotic communities to ideal habitat conditions. More specifically, a MLEP is an assessment of overall ecosystem function and value, rather than a specific species-habitat analysis. The MLEP first creates a qualitative habitat value assessment of the biotic communities' ability to support wildlife and plant populations. For the LAX Master Plan analysis, selected habitat variables defined by individual habitat parameters were chosen to express habitat quality of the eight biotic communities that occur within the project site, and rated on a standardized scale from 0.0 and 1.0 on a presence/absence basis (i.e., extent to which habitat variables described in detail below are either present or absent at a given site), 0.0 representing non-ideal habitat conditions (i.e., absence of a majority of habitat variables described below), and 1.0 representing optimum habitat conditions (i.e., presence of a majority of habitat variables described below). Secondly, the MLEP involves quantifying the determined habitat quality values into a weighted figure of HU. The environmental consequences of each project alternative were quantified in terms of habitat units (HU),[9] calculated by multiplying the number of acres within each biotic community by its habitat value. HUs were calculated for the eight biotic communities rather than individual species themselves in order to express the ecological ability of the biotic communities to support the target species. The MLEP yielded habitat units for each of the biotic communities present within the study area as compared to a target biotic community identified at reference sites (specifically the Valley Needlegrass Grassland/Vernal Pool complex historically present at LAX). Baseline HU were calculated and then used to determine the impact to each biotic community under each alternative. Mitigation measures and ratios were then determined separately for each species and biotic community.

Habitat Variables

The MLEP provides a systematic means of quantifying the ability of the eight biotic communities to provide the food, cover, and reproductive requirements of associated plant and wildlife species. Habitat modeling in the fields of wildlife population management and specifically impact assessment are viewed

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7 USFWS, 15 September 1980. *Habitat as a Basis for Environmental Assessment.* USFWS, Division of Ecological Services, Department of the Interior, Washington D.C.

8 USFWS, 15 September 1980. *Habitat as a Basis for Environmental Assessment.* USFWS, Division of Ecological Services, Department of the Interior, Washington D.C.

9 A habitat unit is the principle unit of comparision in HEP, a methodology developed by the U.S. Fish and Wildlife Service for comparing habitat quality and quantity for a particular species.

as hypotheses of species-habitat relationships rather, than statements of proven cause and effect.[10] In an MLEP, it is assumed the target species populations respond to current habitat conditions as defined in the selected habitat variables. The four habitat variables: topography/hydrology, flora, fauna and ecosystem functional integrity, were selected for the LAX Master Plan analysis because all four are directly related to one another in defining the Valley Needlegrass Grassland/Vernal Pool complex. For example, the type of fauna present is dependent on the floral, topographic, and hydrologic features of the area, all of which are dependent on the ecological integrity and ability of the biotic community to support plant and wildlife populations. The eight biotic communities occurring at the project site defined by these four habitat variables were rated on a scale of 0.0 to 1.0, expressing habitat quality according to the standardized methodology described below.

Topography/Hydrology was selected as a habitat variable because the Valley Needlegrass Grassland/Vernal Pool complex is well-defined by its hydrological and topographic features. One of the seven sensitive wildlife species observed in the Los Angeles/El Segundo Dunes (western spadefoot toad) is dependent on the seasonal nature of vernal pools. Vernal pools are typically dry throughout summer and fall months while gradually gaining water after winter rains. As a result, a variety of aquatic plants, mammals, amphibians, and invertebrates at various life stages emerge to thrive within this fragile and short-lived environment. Within the months that water is present, species diversity undoubtedly increases. The four parameters:mound-depression microrelief, native soils with <10% slope, areas with periods of inundation $\geq$ 30 days, and summer dessication were chosen to characterize hydrology and were rated equally (Habitat Value (HV) = 0.05) to assure continuity and unbiased characterization of the vernal pool topography and hydrology. Therefore, the maximum value a biotic community could be rated for topography/hydrology according to the MLEP is 0.20 (i.e., with each of the four parameters evaluated for Topography/Hydrology, the maximum combined value would be 0.20).

Flora, the diversity and abundance of plant species, was chosen as a habitat variable to characterize the type and composition of the eight biotic communities. Vegetation type is a vital structural component around which Valley Needlegrass Grassland/Vernal Pool complex function. The Valley Needlegrass Grassland/Vernal Pool complex is well-defined by its native plant composition and cover and other associated sensitive plant species. The flora habitat variable not only addresses characteristic plants found within a plant community, but it characterizes the cover of these plants. The four parameters: >10% vegetative cover, native grasses >10%, vernal pool associated species, and listed vernal pool associated species, were chosen to characterize flora and were rated equally (HV = 0.05) to assure unbiased characterization of the plant communities. Therefore, the maximum value a biotic community could be rated for flora according to the MLEP is 0.20.

Fauna, the diversity and abundance of wildlife species, was analyzed as a habitat variable to define the general wildlife characteristics of the plant communities. Presence or absence of specific wildlife species is an indicator of the quality of habitat. The faunal content of a biotic community is largely determined by topography/hydrology, flora, and ecosystem functional integrity in this particular impact assessment. It is assumed, within the MLEP model, the wildlife populations are reproducing and functioning at ecological carrying capacity. As a result, the wildlife populations are assumed to be stabilized through the recruitment of young. The four parameters: dominated by native fauna (reproducing), grassland-associated species (reproducing), sensitive vernal pool associated species (reproducing), listed vernal pool associated species (reproducing), were chosen to assess the fauna habitat variable and were rated equally (HV = 0.05) to promote continuity and prevent unbiased characterization of the fauna populations. Therefore, the maximum value a biotic community could be rated for fauna according to the MLEP is 0.20.

Ecosystem functional integrity was selected to assess functionality and long-term sustainability of the eight biotic communities. Ecological integrity was weighted twice the amount of the other three habitat variables because the other variables are directly dependent on the ecological integrity of the biotic community. Ecosystem functional integrity takes into consideration the legal protection that the state designated sensitive habitat Valley Needlegrass Grassland/Vernal Pool complex receives. Essentially, the other three habitat variables are directly dependent on the ecological integrity of the biotic community. Contiguous acres within a Valley Needlegrass Grassland/Vernal Pool complex influence habitat suitability

[10] USGS, 2001. *Habitat Suitability Index Models Introduction.* USGS, National Wetlands Research Center. Available at: http://www.nwrc.gov/wdb/pub/hsi/hsiintro.htm.

because of the linkage of otherwise distant wildlife and plant populations. Contiguous habitat promotes physical dispersal of plants and wildlife by serving as a corridor for genetic exchange. The four parameters: contiguous with wetland and state-designated sensitive terrestrial habitat, under regulatory conservation, variety of pollinator/dispersal mechanisms present, and contiguous native habitat > 40 acres, were chosen to assess ecosystem functional integrity and were rated equally (HV = 0.10) to promote continuity and prevent unbiased characterization of the vernal pool habitat. Therefore, the maximum value a biotic community could be rated according to the MLEP is 0.40.

Based on the above, the maximum habitat quality value from the combined four habitat variables (Topography/Hydrology, Flora, Fauna, and Ecosystem Functional Integrity) would be 1.0.

Again, the habitat variables selected to evaluate the quality of extant habitat at LAX were those criteria consistent with a vernal pool/grassland complex historically present at LAX, including topography and hydrology, vernal pool associated flora and fauna, and contiguous upland habitat to support the vernal pool habitat. The use of historical data and the best available scientific research is sufficient to assess the current conditions of habitat at LAX. The MLEP methodology compared current conditions to the conditions that would exist after implementation of each project alternative, thereby making the calculation of impacts and mitigation proportional. Modifications of the USFWS HEP are recognized and applied among experts in the field of impact assessment and habitat suitability modeling. Examples include the Pennsylvania Modified 1980 Habitat Evaluation Procedure (PAM HEP)[11,12] and the Wildlife Habitat Assessment and Management System (WHAMS)[13].

Reference Sites

The MLEP conducted for the LAX Master Plan EIS/EIR analysis compared the overall habitat quality of biotic communities at LAX to the ideal habitat conditions represented by two reference sites, the Santa Rosa Plateau in Riverside County and the Carrizo Plain Natural Area in San Luis Obispo County. The Santa Rosa Plateau and Carrizo Plain Natural Area represent the target biotic community, Valley Needlegrass Grassland/Vernal Pool complex. The selected reference sites were intended to represent the Valley Needlegrass Grassland/Vernal Pool complex historically present at LAX, and were not intended to be analogous to the southern dune scrub or southern foredune plant communities present within the Los Angeles/El Segundo Dunes. As stated in the Draft EIS/EIR, the two reference sites were selected because they represent optimal habitats for a multitude of floral and faunal species similar to historical biotic communities present at LAX during the early 1900's. An analysis of historical aerial photographs of the area now occupied by LAX and the surrounding vicinity revealed a site showing indication of hydrologic and topographic features characteristic of vernal pools. This indication is substantiated by historical USGS 7.5 minutes series topographic maps of the Venice quadrangle dated 1934 and 1944 showing topographic depressions characteristic of vernal pools. Pierce and Pool (1934) report the deflation plain immediately to the west of the currently designated Los Angeles/El Segundo Dunes as supporting native grasses and annual forbs. This information indicates that the deflation plain to the east of the backdune at LAX historically supported a grassland habitat dotted with vernal pools.[14,15] Under current conditions, the same area at LAX can be characterized by non-native grassland vegetation and disturbed bare ground unsuitable to support vegetation. Ponding is observed during substantial rainy seasons as a result of manmade depressions and inappropriate contouring of roadways to allow for proper drainage.

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11 Palmer, J.H., Chezik, R.D. Heaslip, G.A. Rogalsky, D.J. Putman, R.W. McCoy, and J.A. Arway. 1985. Pennsylvania Modified 1980 Habitat Evaluation Procedure Instruction Manual. U.S. Fish and Wildlife Service, State College, PA.

12 Palmer, J.H. 1995. Wildlife Assessment and Management PAM HEP Habitat Suitability Index Model Manual. Pennsylvania Game Commission, Bureau of Land Management, Harrisburg, PA.

13 Palmer, J.H., R.H. Muir, and T.M. Sabolcik. 1993. Wildlife Habitat Assessment and Management System: Habitat Evaluation Procedure Technology for Wildlife Management Planning. Pennsylvania Game commission, Bureau of Land Management, Harrisburg, PA.

14 R. Mattoni, 1989. *Unnatural Acts: Succession on the El Segundo Sand Dunes in California*. H. G. Hughes and T.M. Bonnickson, (eds.) Proceedings from the First SER Conference, Berkeley, CA 1989, Society of Ecological Restoration, Madison, WI 53711.

15 Mattoni,R. 1993. *Natural and Restorable Fragments of the Former El Segundo Sand Dunes Ecosystem*, J.E. Keeley (ed.). Interface Between Ecology and Land Development in California. Southern California Academy of Sciences, Los Angeles.

Impact Assessment and Mitigation Ratios

Impacts to the biotic communities were determined by overlaying the project footprint for each alternative over the existing biotic community map. Areas where the two maps intersected were determined to be direct impacts (i.e., biotic communities located within proposed development footprint would be directly impacted - removed during grading). Impacts to biotic communities were calculated by multiplying the acreage of the biotic community that would be removed due to development by its habitat value to determine the amount of habitat units impacted. Similarly, impacts to habitat occupied by target species (Lewis' evening primrose, western spadefoot toad, San Diego black-tailed jackrabbit, loggerhead shrike) were calculated by multiplying the acreage of the biotic community that would be removed due to development by the habitat value of the biotic community in which the species was found during directed surveys. Once acreage is expressed as a habitat unit, it can be interchanged with other habitat units because it accounts for habitat quality.

The impact assessment covered the areas within the Master Plan study boundaries and the Los Angeles/El Segundo Dunes. Of the 3,493.5 acres of land present within the Master Plan project area, 887.2 acres (25%) is comprised of non-developed areas, including degraded and disturbed habitats of bare ground, non-native grassland/ruderal and landscaped areas. The other 2,606.3 acres (75%) is developed. Bare ground, non-native grassland/ruderal and landscaped areas were rated the lowest in habitat quality in the MLEP analysis due to the absence of biological parameters directly influencing the ability of the biotic community to provide food, cover and reproductive requirements of the target species. In particular, the non-native grassland/ruderal within the airport operations areas at LAX are routinely mowed or disked in compliance with Title 14 Part CFR 139 for wildlife hazards management, further reducing the suitability of these areas as habitat. Subsequently, the majority of the impact assessment involves compensation consideration given to disturbed or undesirable habitat capable of supporting few species. Mitigation for impacts to this habitat is considered adequate and proportional to the quality of the habitat.

In addition, there have been comments expressing concern that the MLEP inappropriately uses landscaped areas to lessen project impacts. However, landscaped areas were considered a biotic community when determining project impacts. Impacts to landscaped areas were treated in the same manner as impacts to other biotic communities. Impacts to non-native grassland/ruderal and disturbed bare ground result from the conversion of these biotic communities to landscaped and developed areas. This is the reason why landscaped areas would increase under all build alternatives.

To mitigate for the loss of these HUs, on-site restoration of existing habitats within the Los Angeles/El Segundo Dunes has been proposed. Ruderal, non-native grasslands and existing roadways would be restored to Valley Needlegrass Grassland and Southern Foredune biotic communities. LAWA has not proposed to restore the exact biotic community that will be impacted (because it is highly degraded and disturbed), but rather, proposed to restore the biotic communities that historically dominated the area prior to the operation of LAX. Impacts to habitat within the Los Angeles/El Segundo Dunes resulting from the installation of navigational aids and associated service roads would be mitigated through the restoration of Valley Needlegrass Grassland and Southern Foredune within the Los Angeles/El Segundo Dunes.

When considering mitigation opportunities, it is important to consider both the habitat quality as well as the relative size of the area; a small area with a high habitat quality value is considered to be of greater compensation importance than a large area with a low habitat quality. This concept is stated in section 15126.4 of the Guidelines of the California Environmental Quality Act (CEQA) as "rough proportionality," meaning the environmental impacts caused by a development project and the mitigation measure imposed on the project applicant must relate directly and in correct proportion to one another. The MLEP was utilized to determine the mitigation area, however, mitigation ratios were determined independently of the MLEP. Mitigation ratios for impacts to biotic communities were determined to be 1:1 for habitat units. Mitigation ratios for impacts to state-designated sensitive habitats within the Los Angeles/El Segundo Dunes were determined to be 1:1 for acres. Lastly, mitigation ratios for impacts to endangered and threatened species were determined through coordination with the USFWS. Mitigation credit would be based on restoration performance criteria developed for each biotic community or habitat type. Once restoration is complete, the mitigation area would have a habitat value of at least 0.8. Mitigation credit would take into account the existing habitat value of the biotic community prior to restoration.

Performance criteria for sensitive plants and wildlife species were developed independently of the MLEP and in coordination with the regulatory agencies. Performance criteria are discussed in more detail in the Draft EIS/EIR and Supplement to the Draft EIS/EIR, but include the relocation and survival of the western spadefoot toad from the LAX airfield, survival of the black-tailed jackrabbit within the Habitat Restoration Area, and the use of mitigation areas by the loggerhead shrike.

TR-EJ-1: Potential Air Quality and Health Risk Impacts on Low-Income and Minority Communities

Introduction

This topical response addresses comments on the potential health effects of air emissions on minority and low-income communities, indicating where and how Alternative D and new information presented in the Supplement to the Draft EIS/EIR addressed such comments.

Discussion

As indicated in Section 4.4.3, *Environmental Justice,* of the Draft EIS/EIR, increased emissions of NOx, particulate matter and toxic air pollutants associated with LAX Master Plan Alternatives A, B and C, could have significant impacts throughout the South Coast Air Basin. Health effects associated with these pollutants - particularly chronic respiratory diseases such as asthma - have been found to be more prevalent among certain minority populations, and may be more severe in children and low-income populations who lack good access to medical care. Therefore, such impacts have the potential to affect minority and low-income communities more severely than the general population.

Although the basic findings presented in Section 4.6, *Air Quality,* and 4.4.3, *Environmental Justice,* of the Draft EIS/EIR regarding air quality effects of Alternatives A, B, and C have not changed, new analysis of Alternative D, LAWA staff's preferred alternative, was provided in Section 4.6, *Air Quality* and Section 4.4.3, *Environmental Justice* of the Supplement to the Draft EIS/EIR. As further described in these sections, air quality effects under Alternative D would be reduced when compared to Alternatives A, B, and C, and for certain pollutants compared to the No Action/No Project Alternative. However, for all of the build alternatives, effects from certain criteria pollutants would remain adverse after mitigation with related health effects potentially more severe for populations to the east/northeast of the airport, particularly those susceptible to asthma and other chronic respiratory illnesses. Available data on the health effects of criteria pollutants does not allow a quantitative analysis of this type of cumulative impact. Obtaining the data necessary to conduct such an analysis and evaluate the potential for disproportionate impacts on minority and low-income individuals would require long-term health studies of a kind well outside the scope of a CEQA or NEPA document.

A health risk assessment was performed for the Draft EIS/EIR (Section 4.24.1, *Human Health Risk Assessment*) and the Supplement to the Draft EIS/EIR (Section 4.24.1, *Human Health Risk Assessment*). The health risk assessment evaluated potential risks associated with emissions generated as a result of changes in activities at the airport that would occur with implementation of the proposed LAX Master Plan alternatives. Emissions were evaluated for sources such as aircraft, on- and off-airport vehicles, ground service equipment, aircraft maintenance facilities, fuel tank farms, and the Central Utility Plant. Jet fuel emissions were included in the evaluation in as much as tank farm emissions and emissions during fueling and aircraft operation were accounted for in the emissions inventory. Jet fuel is composed of many compounds; therefore, potential health effects associated with exposure to jet fuel emissions were evaluated in terms of the toxic components of jet fuel.

As further described in Section 4.24.1, *Human Health Risk Assessment,* of the Supplement to the Draft EIS/EIR, incremental cancer risks and non-cancer chronic health hazards under Alternative D would be reduced when compared to the No Action/No Project Alternative and Alternatives A, B, and C. In addition, Alternative D could result in a beneficial effect with regard to acute non-cancer hazards. Alternative D would result in a small beneficial effect on cumulative risks associated with cumulative cancer health risks. Results of the analyses suggest that implementation of Alternative D might reduce cumulative effects with regard to non-cancer chronic and acute non-cancer health hazards which would be a beneficial effect.

Alternatives B and C would exceed thresholds of significance for incremental non-cancer chronic health hazards in 2015 with the incorporation of mitigation measures, as presented in Section 4.24.1.9 of the Supplement to the Draft EIS/EIR. The areas of adverse effect would fall on predominantly minority communities located to the east/northeast of the north runway and largely west of I-405. In addition, in 2015 Alternatives A, B, and C would exceed thresholds of significance for acute non-cancer health hazards with the incorporation of mitigation measures. Although it is assumed these chronic and acute non-cancer health hazards would be significant and would fall disproportionately on minority and low-income populations, it should be noted that estimates of non-cancer hazards relative to acrolein emissions are uncertain.[16]

Alternatives A, B, and C may also contribute to cumulative health risks associated with air pollution in some areas to the east/northeast adjacent to the airport. However, beneficial impacts (i.e., reduction in cancer risks) are predicted for other areas as a result of implementation of the proposed LAX Master Plan alternatives. These cumulative health risks would affect minority and low-income individuals more severely than the general population. Because airport-related emissions represent only a small portion of total emissions in the LAX vicinity, it is expected that cumulative health risks would occur with or without implementation of the proposed LAX Master Plan. Furthermore, disproportionately high and adverse cumulative human health effects associated with Alternatives A, B, and C, if any, would be attributable primarily to factors such as heightened vulnerability to health effects, inadequate access to health care, and synergistic effects of multiple environmental hazards rather than higher levels of pollutants in minority and low-income communities. However, due to the lack of available background data and limited information on the cumulative effect of multiple air pollutants, it is impossible to quantify with any accuracy the incremental contribution of Alternatives A, B, and C to cumulative health risks among minority and low-income populations. Nonetheless, because many sources of toxic air pollutants (TAPs) in the South Coast Basin are not related to LAX, potential cancer risks for all populations within the Basin, especially those at special risk, would remain high.

An Environmental Justice Program, including relevant mitigation measures and benefits, was proposed in Section 4.4.3, *Environmental Justice* (subsection 4.4.3.7), of the Supplement to the Draft EIS/EIR in order to avoid, reduce or offset the potential disproportionate and adverse environmental effects of the LAX Master Plan on minority and/or low-income populations. Based on public input received during circulation of the Supplement to the Draft EIS/EIR, this program has been revised, as presented in Section 4.4.3, *Environmental Justice* (subsection 4.4.3.7), of the Final EIS/EIR. Also see Topical Responses TR-EJ-2 regarding environmental justice-related mitigation and benefits, TR-AQ-1 regarding air pollutant deposition, TR-AQ-2 regarding toxic air pollutants, TR-AQ-3 regarding air pollution increase, TR-HRA-1 concerning baseline issues, TR-HRA-2 regarding airport emissions and link with adverse health effects, and TR-HRA-4 regarding human health mitigation strategies.

TR-EJ-2: Environmental Justice-Related Mitigation and Benefits

Introduction

This topical response addresses several environmental justice-related comments received during the 295-day review period for the Draft EIS/EIR and the 120-day review period for the Supplement to the Draft EIS/EIR, including comments received during the environmental justice community outreach process; petitions from individuals or organizations; and agency/public comments of similar nature. Many of the comments requested a detailed environmental justice program or questioned the mitigation measures in the Draft EIS/EIR, others consisted of recommendations for possible mitigation measures or benefits such as the need for youth/education programs; business and employment assistance; more schools; libraries; and other public services. This topical response describes where and how such concerns were initially addressed in the Draft EIS/EIR, and were further addressed in the Supplement to the Draft EIS/EIR and the Final EIS/EIR.

[16] As further described in Section 4.24.1, *Human Health Risk Assessment* (subsection 4.24.1.2), of the Supplement to the Draft EIS/EIR, estimates of non-cancer hazards relative to acrolein emissions are very uncertain, therefore estimates of non-cancer hazards associated with each of the alternatives may not represent absolute estimates of potential health impacts.

Discussion

As indicated in Section 4.4.3, *Environmental Justice,* of the Draft EIS/EIR with supporting technical data and analyses provided in Appendix F of the Draft EIS/EIR, the environmental justice community outreach process was developed to assure an effective dialogue with minority and low-income communities affected by LAX in order to best respond to the needs of the various communities as environmental justice benefits and mitigation measures associated with the LAX Master Plan are developed and implemented.

The Environmental Justice Program was not fully developed in the Draft EIS/EIR in large part because the nature and extent of environmental impacts that could result in disproportionate and adverse effects on minority and/or low-income residents were not known until the document was completed. Although the Draft EIS/EIR incorporated all feasible mitigation measures to address the significant impacts of the project, as set forth in Chapter 5, *Environmental Action Plan*, of the Draft EIS/EIR, additional input from affected communities was seen as essential to understand what additional measures or benefits might be available to respond to the specific needs of the community in order to further avoid, reduce or offset potential adverse and disproportionate environmental effects on minority and/or low-income populations.

As further described in Section 4.4.3, *Environmental Justice,* of the Supplement to the Draft EIS/EIR with supporting technical data and analyses provided in Appendix S-D, following the commitment in the Draft EIS/EIR and subsequent to its public release, LAWA held a series of community workshops on environmental justice beginning in May 2001. A total of four workshops were held in the communities of Inglewood, Lennox, and South Los Angeles. The workshops were widely noticed to residents within a 10-mile radius of each meeting site through newspapers, posted notices, and door-to-door distribution of notices. Approximately 1,500 letters of invitation to the workshops were also mailed to organizations and leaders in the affected communities. The format of the workshops included a number of stations staffed by LAWA employees and/or technical consultants where graphic illustrations and/or written materials were provided to inform attendees about the concept of environmental justice and potential environmental impacts associated with the proposed LAX Master Plan alternatives. Information was also provided regarding ongoing LAWA programs, such as the Airport Noise Mitigation Program. Materials were provided in both English and Spanish and Spanish translators (including bilingual LAWA staff), assisted at each workshop. Those staffing the stations interacted with the public, explaining information, answering questions, and documenting comments and suggestions. Comments were received orally and in written form to gain an understanding of community concerns and needs and potential environmental justice mitigation programs.

While the workshops described above were focused on environmental justice, important community input on the issue was also received during the more than 9-month public circulation period for the Draft EIS/EIR. During this period, comments addressing environmental justice concerns were received in writing and at nine public hearings focused on the Draft EIS/EIR. Three of these hearings included workshops with booths on environmental justice, where materials were provided and technical staff were available to answer questions and record comments.

In association with public circulation of the Supplement to the Draft EIS/EIR, three additional environmental justice workshops similar in format to the earlier workshops were held in Inglewood, Lennox and South Los Angeles during July and August of 2003. Information relating to these workshops is provided in Appendix F-A (Attachment 2), Environmental Justice Materials, of the Final EIR. Additional input on environmental justice was also obtained during the public circulation period and at twelve public hearings conducted for the Supplement to the Draft EIS/EIR. And, more recently, a LAWA environmental justice working group in conjunction with the Mayor's office conducted additional outreach to local organizations, environmental groups, civic, religious and business leaders in adjacent communities.

LAWA received a substantial number of recommendations for mitigation measures and other benefits relating to environmental justice concerns from the environmental justice workshops, comments received on the Draft EIS/EIR and Supplement to the Draft EIS/EIR, and through more recent community outreach. All recommendations for mitigation measures and other benefits relating to environmental justice were thoroughly evaluated. A consolidated list of recommendations was compiled that screened out those recommendations that either did not relate to the disproportionate adverse environmental effects of the project, or were determined to be infeasible based on funding limitations or other significant impediments to implementation. A listing of public recommendations for environmental justice related mitigation

measures and benefits gathered through the public participation process is provided in Appendix F-A (Attachment 1), of the Final EIR. The Environmental Justice Program, reflecting this input, is presented in Section 4.4.3, *Environmental Justice* (subsection 4.4.3.7) of the Final EIR. As further described in Section 4.4.3, the Environmental Justice Program includes mitigation measures detailed in Section 4.1, *Noise* (subsection 4.1.8), Section 4.2, *Land Use* (subsection 4.2.8), Section 4.4.2, *Relocation of Residences or Businesses* (subsection 4.4.2.8), and Section 4.6, *Air Quality* (subsection 4.6.8), of the Final EIR.

As further described in Section 4.4.3, *Environmental Justice*, in assessing whether a project has disproportionately high and adverse human health or environmental effects on minority and low-income populations, certain benefits of the project may be taken into account. The benefits provided in the Environmental Justice Program go beyond the comprehensive mitigation measures provided throughout the Final EIR to address the significant impacts of the proposed LAX Master Plan. The benefits help off-set the disproportionately high and adverse effects on minority and low-income communities that would remain after implementation of mitigation measures. In addition, it is LAWA policy to ensure that no portion of the population and no community is denied access to benefits flowing from the LAX Master Plan. In furthering this policy, LAWA has undertaken to identify impediments to enjoying the economic benefits generated by LAX that are faced by minorities and low-income individuals, and has committed to removing or reducing these impediments wherever possible.

Jobs are one of the economic benefits directly and indirectly attributable to LAX. Airport-related employment is expected to generate large concentrations of jobs within the manufacturing, restaurant, and hotel sectors. As further described in Section 4.5, *Induced Socio-Economic Impacts* (Growth Inducement) (subsection 4.5.6), of the Draft EIS/EIR, for Alternatives A, B, and C, an estimated 7,000 to 16,000 new jobs would be created within a ten-mile radius of LAX by 2015. As indicated in Section 4.5, *Induced Socio-Economic Impacts* (Growth Inducement) (subsection 4.5.6.1), of the Supplement to the Draft EIS/EIR, under Alternative D, productivity increases over time would outweigh net additional jobs, resulting in a decrease of approximately 23,000 jobs within a ten-mile radius of LAX by 2015. Currently, residents of neighboring minority and low-income communities hold a relatively small proportion of LAX jobs. In order to ensure that minority and low-income individuals would benefit from employment opportunities, LAWA is working with airport tenants, airport related employers and local businesses to create programs that will enable local youths, adults and local businesses to more easily access job and business opportunities available at and around LAX now and in the future. LAWA efforts will include, but not be limited to, job recruitment, job training, job placement, small business assistance, and small business development. LAWA will also explore airport procurement and vending opportunities for Minority Business Enterprises (MBEs) and Disadvantaged Business Enterprises (DBEs). In addition, LAWA will make every effort to recruit MBEs and DBEs for construction opportunities associated with airport modernization. LAWA will also seek to recruit local high school and community college students for internships associated with airport operations.

In order to reach these goals, and in addition to the Mitigation Measures and Master Plan Commitments set forth in the Draft EIS/EIR, the Supplement to the Draft EIS/EIR, and the Final EIR, the Environmental Justice Program presented in Section 4.4.3, *Environmental Justice* of the Final EIR includes benefits to improve conditions in minority or low-income communities that have experienced disproportionately high and adverse effects from LAX operations. While LAWA will investigate and pursue environmental justice benefits as feasible and allowable by law, implementation of any programs or measures is dependant upon LAWA's ability to utilize airport revenue funding or other state or federal funding sources for such implementation. As presented in Section 4.4.3, *Environmental Justice* of the Final EIR, the proposed environmental justice benefits include expansion of existing programs at LAWA's Job Outreach Center, an extension of the Gateway LAX improvements, aviation curriculum, an aviation academy, air toxic/health risk studies, air filtration systems for schools, a mobile health clinic, community mitigation monitoring, and a nature center.

As further described in Section 4.4.3, *Environmental Justice* (subsection 4.4.3.7), of the Final EIR, job related benefits involving new or expanded programs at LAWA's Job Outreach Center would be provided for minority and disadvantaged businesses and others in communities disproportionately effected the LAX Master Plan. A summary of these benefits is provided below:

- **Construction and other LAX-related Job Outreach**
  - Job training and employment assistance for underrepresented and at-risk local residents.
  - Construction contracts for minority firms and businesses within affected communities.
  - Coordination with local organizations for job training, outreach and incubator programs.
  - Outreach and job training programs for local ex-offenders.
  - Workshops and training for airport related professional development.
  - Airport related manufacturing opportunities in impacted communities.
- **Community Job Database**
  - Assess capabilities of local workforce to target training and outreach efforts.
  - Develop and manage database of minority contractors.
  - Develop and distribute information on jobs by Master Plan phase to local communities and local Minority Business Enterprises (MBE) and Disadvantaged Business Enterprises (DBE).
- **MBE/DBE Business Outreach**
  - Assist prime contractors with outreach to local MBE/DBE firms.
  - Establish MBE/DBE and local subcontractor percentage goals.
  - Provide incentives to prime contractors that meet or exceed MBE/DBE hiring goals.
  - Monitor and enforce guidelines for outreach to MBE/DBE firms.
- **Small Business Outreach**
  - Institute sub-contractor training/apprentice programs
  - Educate prime contractors on concerns/needs of local business owners and MBE/DBE contractors.
  - Develop special work packages to provide small businesses prime contracting opportunities.
  - Loan, bonding and licensing assistance.
  - Provide incentives to large businesses for mentoring or partnering with local small businesses.
  - Ensure prime and sub-contracting opportunities for local small businesses.

TR-EJ-3: Environmental Justice and Regional Context

Introduction

This topical response addresses comments that indicated the LAX Master Plan, as proposed in the Draft EIS/EIR did not take a regional approach to addressing aviation demand and, as a result, it placed an unfair burden on low-income and minority communities in the LAX vicinity.

Discussion

In 2001, subsequent to the publication of the Draft EIS/EIR, a new alternative, Alternative D - Enhanced Safety and Security Plan, was added to the range of alternatives currently being considered for the LAX Master Plan. That alternative was evaluated in the Supplement to the Draft EIS/EIR. Alternative D, developed pursuant to the direction of City of Los Angeles Mayor James K. Hahn, provides an emphasis on safety and security improvements while limiting future (2015) airport activity to a level comparable to that of the No Action/No Project Alternative. The Alternative D approach of not expanding the capacity of LAX is consistent with the policy framework of the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP), which is intended to accommodate future regional aviation demands at airports other than LAX. As analyzed in the SCAG 2001 RTP and Regional Aviation Plan, limiting expansion at LAX is seen as the best possible outcome from an environmental justice perspective given the high concentration of minority and low-income populations in the LAX vicinity. LAX Master Plan Alternatives A, B, and C are designed to serve future (2015) activity levels that would be substantially

higher than the No Action/No Project Alternative, and therefore, in conflict with the 2001 RTP policy framework. Alternatives A, B, and C, would have disproportionately high and adverse aircraft noise effects on minority and low-income populations to differing degrees, with the least effect under Alternative C. Development of Alternative D would be comparable to future (2015) activity levels projected to occur under the No Action/No Project Alternative, consistent with the 2001 RTP policy framework, and with the stated RTP desire to address disproportionately high and adverse aircraft noise impacts by distributing growth regionally and limiting growth at LAX. Although aircraft noise effects under Alternative D would still affect minority and low-income populations that currently are located in the approach paths for LAX, the effects would be reduced compared to the other build alternatives, and would be generally equivalent to what would occur at LAX in 2015 without approval of the LAX Master Plan.

As indicated above, Alternative D is consistent with SCAG's 2001 RTP framework and supports a regional approach to serving aviation demand by encouraging growth that could otherwise occur at LAX to occur at other regional airports, including LAWA-owned Ontario International Airport. However, it should be clarified that while LAWA can encourage growth at other regional airports, it cannot control what occurs at airports it does not own. For example, LAWA does not own the former El Toro Marine Corps Air Station (MCAS El Toro) in Orange County. This facility is owned by the U.S. Department of the Navy who has decided to dispose of the property for non-aviation use. Neither LAWA nor the FAA can change the decision made to convert MCAS El Toro to non-aviation use. Decisions to develop an airport are controlled by those who own the property and by the local governments who have jurisdiction.

LAWA's ongoing programs and operations at LAX, and any alternative selected, would be carried out consistent with Title VI of the 1964 Civil Rights Act and Executive Order 12898 on Environmental Justice. The FAA and LAWA are sensitive to the concerns of affected communities and are working within their authority to reduce aircraft noise and other impacts while maintaining the safe and efficient use of navigable airspace. LAWA's Environmental Justice Program for the LAX Master Plan and its associated community outreach process have been developed to assure effective dialogue with minority and low-income communities affected by LAX in order to respond to their needs as Environmental Justice benefits and mitigation measures are developed and implemented. Environmental Justice benefits and mitigation measures are presented in Section 4.4.3, *Environmental Justice* (subsection 4.4.3.7), of the Final EIS/EIR.

TR-ES-1: Residential Property Values

Introduction

This topical response has been prepared to address a number of public comments received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR that raise concerns about how LAX, as it exists today and could exist in the future with implementation of the LAX Master Plan, affects the value of single-family property,[17] primarily in the communities immediately surrounding LAX (e.g., Inglewood, El Segundo, Westchester, and Playa Del Rey). More specifically, the comments address concerns about the current impacts of LAX operations and/or possible future impacts of LAX on home values under the Master Plan build alternatives (Alternatives A, B, C or D), due to noise, vehicular traffic, air quality, crime, proposed land use changes, and uncertainties about the future direction of LAX. Most of the comments, however, involve very general concerns about potential property value impacts without reference to any specific element of the physical or social environment that would be affected by the Master Plan.

Discussion

The discussion that follows summarizes the extent to which analysis of property value impacts is necessary or appropriate under applicable environmental laws and regulations. It also summarizes recent trends in single-family home prices in the general vicinity of LAX. A brief discussion of the macroeconomic forces that exert the most considerable influence on single-family home prices, which will continue to operate independently of any decision about development at LAX, is also provided. General

[17] No public comments were received specifically regarding LAX's impacts on the property values of multi-family development, and only a few general comments on commercial property values were submitted. The discussion in this Topical Response, though specific to single-family home value issues, is also applicable to other property types.

relationships between changes in the physical environment and property values at the neighborhood and local levels are then summarized, based on the professional literature available, including neighborhood level price effects due to proximity to airports. The conclusions of the Draft EIS/EIR and Supplement to the Draft EIS/EIR with respect to the environmental topics of concern to many commentors are then summarized, along with the relevance of these conclusions to possible impacts on single-family home value differences at the neighborhood level.

Property Value Impacts Under CEQA and NEPA

Neither CEQA nor NEPA requires an analysis of project impacts on single-family property values. This is because: (1) potential project impacts on residential property values represent an economic impact, not an effect on the physical environment; and (2) estimating prospective property value impacts of a proposed project may involve an impermissible degree of speculation due to the wide range of issues that affect property values and/or the exorbitant cost of preparing scientifically accurate statistical analysis in all of the neighborhoods surrounding LAX.[18]

Under CEQA, discussion of economic and social effects may be included in an EIR, but by themselves " . . . shall not be treated as significant effects on the environment."[19] Nevertheless, economic (and social) impacts can be part of a chain of relationships that ultimately result in a physical impact, but need not be analyzed in any greater detail than necessary to trace the chain of cause and effect, keeping the focus on physical changes.[20] For this reason, general economic and social impacts are sometimes discussed in CEQA documents. NEPA requires analysis of environmental impacts or effects, including social and economic effects, whether direct, indirect, or cumulative, but not property value impacts specifically.[21] Accordingly, the Draft EIS/EIR and the Supplement to the Draft EIS/EIR provided an analysis of general social and economic impacts (see Section 4.4, *Social Impacts*, in each document).

Both CEQA and NEPA require a reasonable effort to predict the direct and indirect consequences of a proposed project before a project is approved, and therefore before its actual impacts are known. But both environmental assessment laws and their respective regulations also caution against the use of idle speculation.[22] As discussed below, the wide range of variables that determine future residential property values falls into this latter category.

Recent Home Price Trends in the Vicinity of LAX

During the past decade, the value of a sample of eight existing single-family homes in communities immediately surrounding LAX, which are systematically re-appraised every six months, have increased by about the same percentage, overall and year-over-year, as 18 homes in a sample of homes in Southwest Los Angeles County, and as 121 homes in a sample from all of Los Angeles County, as shown in Table 1 and Figures 1 and 2.[23] The presence of LAX in the southwest part of the County may be part of the

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18 As discussed below, this would involve developing hedonic regression models capable of testing the degree to which LAX-related factors have any effect on home prices that are measurable and statistically significant. This type of analysis involves exorbitant costs for parcel-level data acquisition, parcel-level characteristic coding, model construction and validation, and production of model results.

19 CEQA Guidelines § 15131(a) and associated discussion. See also *Citizen Action to Serve All Students v. Thornley*, 222 Cal. App. 3d 748, 757-758; 272 Cal. Rptr. 83 (1990) [social and academic impact on disadvantaged students associated with a school closure plan did not trigger CEQA; nor did the "economic impact on small businesses and property values"]; *Hecton v. People of the State of California*, 58 Cal. App. 3d 653, 656 [130 Cal. Rptr. 230] (1976) [CEQA was "not designed to protect against the . . . decline in commercial value of property adjacent to a public project"].

20 CEQA Guidelines § 15131 (a).

21 CEQ NEPA Regulations § 1508.8(b). But like the CEQA Guidelines, economic and social effects are not intended by themselves to require preparation of an EIS. When economic or social and natural or physical environmental effects are interrelated, then the EIS will discuss all of these effects on the human environment. (CEQ NEPA Regulations § 1508.14).

22 ". . . foreseeing the unforeseeable is not possible . . ." (CEQA Guidelines § 15144); " If, after thorough investigation a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." (CEQA Guidelines § 15145). When information on reasonably foreseeable adverse impacts of the proposed action and alternatives is incomplete or unavailable, the agency must make clear that such information is lacking. (see CEQ NEPA Regulations § 1502.22(a)).

23 Source: Real Estate Research Council of So. California, *Real Estate and Construction Report*, Semi-Annual Home Price Survey, First Quarter, 1995, 1998 and 2003. The eight homes in the LAX vicinity sample ranges from a 980 square foot, three bedroom Gardena home built in 1948, to a 2,974 square foot, four-bedroom home in Ladera Heights built in 1961. The communities represented in the sample also include Hawthorne, Inglewood, Los Angeles zip code 90047, and Westchester. The Southwest LA County samples includes these same eight homes, plus 10 more in Palos Verdes, Redondo Beach, Rolling

reason why the average price in the LAX vicinity sample is consistently below the County sample average, as shown in Figure 3. However, since the pattern of increasing home values over time in the communities surrounding LAX has been comparable to that of other more distant communities and the County as a whole, at a gross level, this comparison suggests that LAX, despite increasing air transportation activity levels over the past decade, at least until September 11, 2001, has not had a significant adverse impact on home prices in the communities around LAX.

Table 1

Average Home Price in a Sample of Existing Single-Family Homes in Los Angeles County and Southwest LA County, April 1993 - April 2003

	LA County			Southwest LA County			LAX Vicinity		
Year (April)	Amount	% Change	Index 1992=1.00	Amount	% Change	Index 1992=1.00	Amount	% Change	Index 1992=1.00
1992	$292,107		1.00	$276,667		1.00	$221,875		1.00
1993	$267,769	-8.30%	0.92	$246,111	-11.00%	0.89	$205,375	-8.70%	0.93
1994	$245,186	-8.40%	0.84	$233,889	-5.00%	0.85	$196,500	-1.50%	0.89
1995	$240,310	-2.00%	0.82	$236,500	1.10%	0.85	$193,375	-0.50%	0.87
1996	$236,678	-1.50%	0.81	$228,500	-3.40%	0.83	$186,250	-4.20%	0.84
1997	$238,112	0.60%	0.82	$238,750	4.50%	0.86	$184,813	1.20%	0.83
1998	$256,430	7.70%	0.88	$260,250	9.00%	0.94	$202,875	6.10%	0.91
1999	$286,041	11.50%	0.98	$279,000	7.20%	1.01	$214,250	4.30%	0.97
2000	$311,446	8.90%	1.07	$306,778	10.00%	1.11	$231,500	8.00%	1.04
2001	$337,843	8.50%	1.16	$334,833	9.10%	1.21	$253,250	9.00%	1.14
2002	$361,182	6.90%	1.24	$360,889	7.80%	1.30	$280,250	9.50%	1.26
2003	$418,744	15.90%	1.43	$412,361	14.30%	1.49	$310,750	13.60%	1.40
1992-2003	$126,637	43.40%		$135,694	49.00%		$88,875	40.10%	

Source Real Estate Research Council of So. California, HR&A, Inc.

Hills Estates, San Pedro, Torrance, and Los Angeles zip codes 90008 (Crenshaw) and 90043 (Hyde Park). According to HR&A, Inc., the consistent sample of regularly re-appraised homes provides a more accurate gauge of relative price change by subarea over time than periodic reports of median home prices, because the latter do not control for variation in the mix of homes in each reporting period. The average price reported by RERC-SC for each subarea does not necessarily represent the average price for all homes in that subarea.

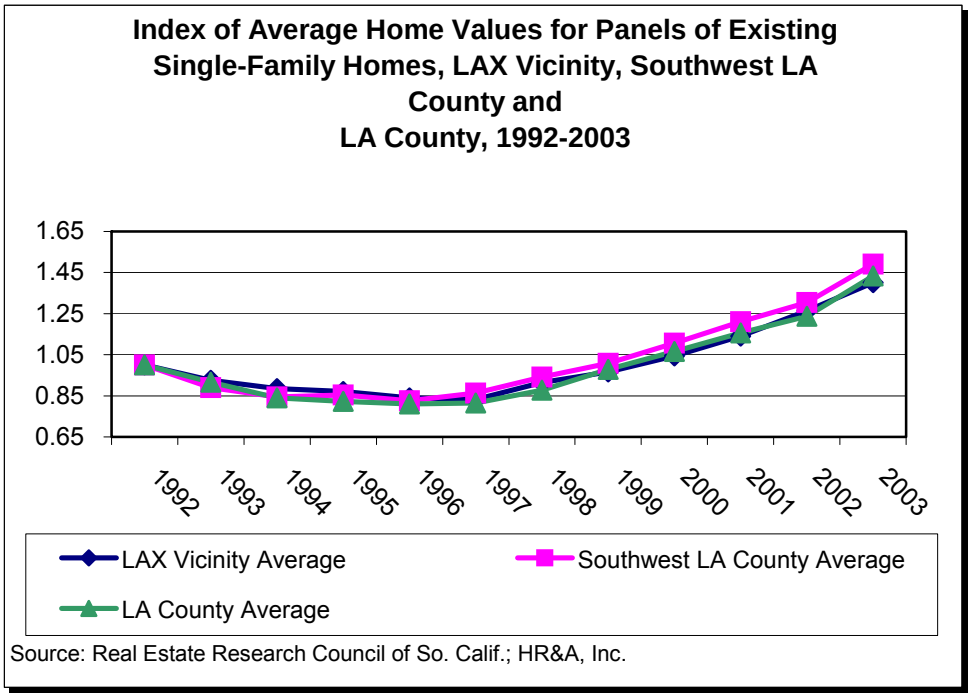

Figure 1

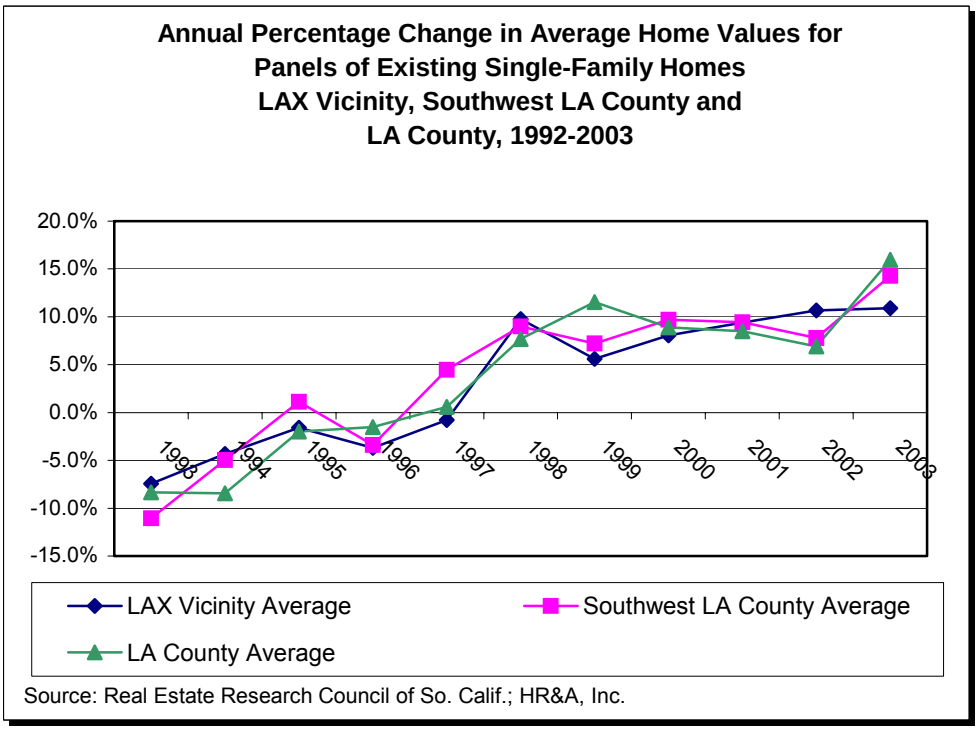

Figure 2

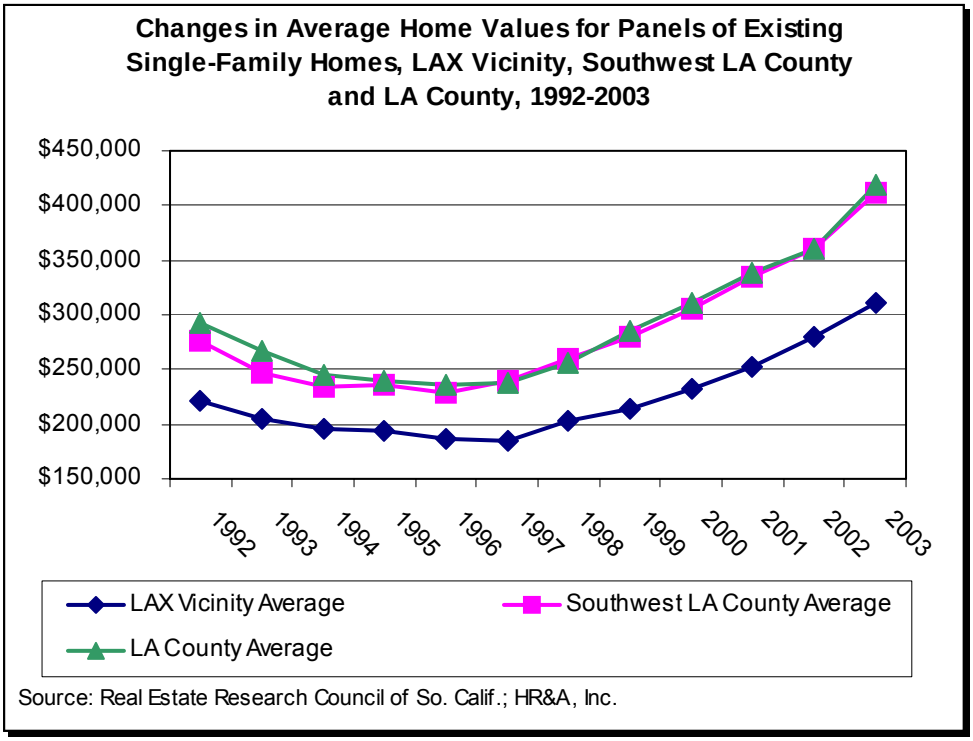

Figure 3

Factors That Influence Residential Property Values

Single-family property values (i.e., prices) within the same neighborhood are influenced primarily by macroeconomic factors that operate independently of locally specific conditions. These include forces that determine the general demand for single-family homes, such as national, regional, and local employment growth rates and distributions, population age group growth trends, rates of household formation, and household income trends. They also include the way these demand trends operate with respect to the supply of available housing (i.e., the number, type, and distribution of existing and new units) in a given market area. Values are also highly influenced by what households can afford to pay for housing, based on household income trends, mortgage interest rates, general price inflation, and changes in federal and state income tax law treatment of housing costs. They are also influenced by the direct cost of new housing development, including the cost of land, construction, professional fees, development fees and permit costs, and construction loan rates. All of these factors interact in complex ways that change over time, and will continue to do so independently of any decisions that are made about future growth and development at LAX. The dramatic decline in home prices during the early 1990s, when the Los Angeles County economy suffered through one of its most severe economic recessions, and the dramatic increase in prices during the past few years, as mortgage interest rates reached near-historic lows, are recent examples of the overwhelming influence these macroeconomic factors have on single-family home values.[24]

Within a given submarket area or neighborhood, differences in residential property values are attributable to housing and neighborhood factors that can be grouped into two broad categories -- amenities and disamenities. Amenities, which include amenities specific to the dwelling unit and the neighborhood in which it is located, are characteristics considered desirable by homeowners. In general, homes

[24] In a recent news article about home values in proximity to airports, John Karevoll, an analyst for DataQuick, which tracks home price changes reported regularly in the *Los Angeles Times*, opines that the presence or absence of noise from an airport or freeway has almost no effect on home values. He cites earthquakes, hurricanes, floods, and significant changes to an area's economy (e.g., a military base closing or the introduction of a new industry) as examples of the kinds of large-scale change that can adversely affect home values. Allison B. Cohen, "The Sky's the Limit, Buyers Seeking Deals Near Airports Mostly Just Find Less Competition and More Noise," *Los Angeles Times*, Real Estate Section, p. 1, July 6, 2003.

possessing more of an amenity cost more than homes possessing less of the same amenity. Housing amenities may include lot size, number of bedrooms and bathrooms, interior and exterior amenities, and adequate parking, among many others. Neighborhood amenities include proximity to parks, good schools, visual quality, and other factors which increase the perceived quality of life. In contrast, disamenities are characteristics considered undesirable by homeowners and thus reduce home values. Housing disamenities may include obsolescent building design or substandard building conditions, while neighborhood disamenities may include traffic, noise, crime, and other factors which are perceived to lower the quality of life. Taken together, this group of housing and neighborhood attributes determines home values within a housing market area, but subject to the overriding influences of macroeconomic trends.

To empirically measure how various amenities and disamenities impact the value of existing residential property within a local market area, a statistical procedure called "hedonic regression" is often used. In brief, a hedonic regression uses measures of housing and neighborhood characteristics as independent variables to predict changes in the dependent variable -- the sales price or rent charged for homes. These are complex statistical studies that are generally performed at the scale of individual neighborhoods, due to the significant volume of property-specific and neighborhood-specific data, including historical changes in prices, that must be assembled and analyzed.

According to HR&A, Inc., the professional economics literature suggests that while property values can be affected by housing and neighborhood amenities and disamenities, property values are remarkably robust and relatively insensitive to broad variations in changes to environmental conditions unless a large-scale, radical change in land use is proposed, such as the introduction of a new and dissimilar land use (e.g., a power plant or freeway). Within a neighborhood, however, property values can vary from block to block due to variations in traffic volumes, noise, quality of schools, accessibility to parks, and other local conditions. Only some of these conditions could be affected by implementation of the LAX Master Plan.

There have been studies about the relationship between home prices and proximity to airports, but relatively few that try to predict changes in value in relation to significant proposed changes in airport operations, as would be the case under nearly all of the LAX Master Plan build alternatives. The existing studies all focus only on the degree to which airport noise explains differences in home prices, because it is relatively easy to classify properties relative to airport noise zones. The studies employ, however, a wide range of noise measurement and duration metrics (e.g., Noise and Number Index (NNI), Noise Exposure Forecast (NEF), Effective Perceived Noise Level (EPNL) and the annual energy mean sound level (L_{dn})), as well as other significant methodological differences which make it difficult to generalize from their results. Some studies find an existing price impact in higher airport noise zones; others do not. Most studies document these relationships at a moment in time; only one reviewed study attempted to estimate future impacts of property values around a major regional airport following completion of its modernization plan which, like the LAX Master Plan build alternatives, reduced the 65 dB CNEL noise contour around the airport.

Examples of this literature include the following:

- A 1978 hedonic regression analysis in parts of two communities near Toronto International Airport[25] involved a neighborhood subject to aircraft noise in addition to a control group outside the noise contour area. Noise levels were expressed as being within NEF and CNR ranges. The study found that house prices were discounted as a result of being located in areas impacted by aircraft noise. In one of the neighborhoods they found discounts of approximately 4.5 to 5.1 percent in the noisy areas. Depending on the version of the regression model that was used, the discount was either flat across all noise levels or increased as the noise level increased. The relationships were much the same whether noise was expressed with the CNR or the NEF metrics. In the other neighborhood, steeper noise discounts were observed. In the CNR 95-100 range, the noise discount was 6.1 to 11.0 percent. In the CNR 100-105 range, the discount was 7.6 to 12.0 percent. Above CNR 105, the discount was 15 to 18 percent.

[25] Peter Mieszkowski and Arthur M. Saper, "An Estimate of The Effects of Airport Noise on Property Values," *Journal of Urban Economics*, Vol. 5, No. 4, pp. 425-440 (1978).

- A 1978 study of seven airports (Boston, Buffalo, Cleveland, New Orleans, St. Louis, San Diego, and San Francisco),[26] using 1970 census data in its multiple regression model found that airport noise had an adverse impact on property values in all seven cases. The "noise depreciation index" was estimated from -0.29 to -0.84 percent per decibel increase in NEF. The simple average for all seven airports was -0.55 percent. When results for Boston were excluded, the estimates for the other six airports were stable around a mean of about -0.50 percent.
- A 1979 study of the effects of noise on the value of residential property in relatively small areas near six airports (Buffalo, Cleveland, New Orleans, San Diego, San Francisco, and St. Louis) showed a negative impact on housing values, ranging from -0.29 percent per decibel at Cleveland to -0.74 percent per decibel at San Francisco. The weighted mean value for all six airports was -0.50 percent.
- A 1985 study of the potential impact of airport noise on property values around Atlanta Hartsfield International Airport during two different time periods and two different data sources for its regression model analysis methods was also reviewed.[27] Using actual 1979-1980 sales data, the research yielded a noise coefficient showing that housing value would depreciate by about 0.67 percent per decibel. The findings of the 1970 census data analysis showed a NEF coefficient that would yield a decrease in property value of between 5.2 and 6.6 percent per decibel of increased noise.
- A 1988 survey study of 200 realtors and 70 appraisers doing business in the 40 suburban communities surrounding O'Hare International Airport in Chicago[28] found that realtors and appraisers tend to believe that airport noise has an adverse impact on the prices of residential property, with the impact becoming greater as noise impact becomes more severe. Both realtors and appraisers tended to agree that aircraft noise did not have a net effect on property turnover. On the other hand, over 70 percent of realtors thought that noise-impacted homes were on the market at least somewhat longer than those that were not impacted. A variety of questions were posed about the presumed effect of aircraft noise on the price of residential property. When compared with several other neighborhood and community factors, moderate aircraft noise was ranked as having a "small to moderate" influence on residential property values.
- A 1990 study using a multiple regression, hedonic price estimation methodology for one noise-impacted municipality in the Manchester, UK area[29] found a small negative correlation of property values to airport noise, but it was statistically insignificant. The effects of other property and neighborhood characteristics overwhelmed the small potential impact of airport noise, as expressed with the NNI noise metric. The analysis was based on sales data for a 12-month period in 1985-86, providing 3,472 observations.
- A 1993 study using hedonic regression analysis considered the effect of airport noise at Vancouver International Airport on single-family homes, condominiums, and vacant land, using sales data for 1987-1988.[30] Noise was represented by NEF and was defined in different ways in different regressions. It found an adverse impact on price of -0.65 percent per NEF unit for single-family homes, -0.90 percent for condominiums, and -0.16 percent for vacant land.
- A 1994 hedonic regression analysis studied the effect of airport noise at Winnipeg International Airport on single-family homes.[31] The distinguishing characteristic of this study was the representation of aircraft noise by single event level, rather than a cumulative noise metric, such as

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26 John P. Nelson, *Aircraft Noise and the Market for Residential Housing: Empirical Results for Seven Selected Airports*, Report No. DOT/RSPA/DPB/50-78/24; NTIS No. PB-297 681, prepared by Center for the Study of Science Policy, Institute for Policy Research and Evaluation, Pennsylvania State University, for the USDOT, Research and Special Programs Administration, September 1978.

27 Patricia Habuda O'Byrne, Jon P. Nelson, and Joseph J. Seneca, "Housing Values, Census Estimates, Disequilibrium, and the Environmental Cost of Airport Noise: A Case Study of Atlanta," *Journal of Environmental Economics and Management*., Vol. 12, No. 2, pp. 169-178 (1985).

28 Marvin Frankel, *The Effects of Aircraft Noise and Airport Activity on Residential Property Values: A Survey Study,* ORER Paper Number 60, April 1988. Office of Real Estate Research, College of Commerce and Business Administration, University of Illinois, Urbana-Champaign.

29 G. Pennington, N. Topham and R. Ward. "Aircraft Noise and Residential Property Values Adjacent to Manchester International Airport," *Journal of Transport Economics and Policy*, pp. 49-59, January 1990.

30 Dean Uyeno, Stanley W. Hamilton and Andrew J. G. Biggs, "Density of Residential Land Use and the Impact of Airport Noise," *Journal of Transport Economics and Policy,* Vol. 27, No. 1, pp. 3 - 18 (January 1993).

31 Terrence J. Levesque, "Modeling the Effects of Airport Noise on Residential Housing Markets: A Case Study of Winnipeg International Airport," *Journal of Transport Economics and Policy*, Vol. 28, No. 2, pp. 199 - 210 (May 1994).

NEF or DNL. The findings showed that houses exposed to a higher number of events above 75 EPNL sold at a discount and that houses exposed to a higher mean EPNL level sold at a discount. The finding for noise variability (standard deviation around the mean EPNL values) showed that where the number of events and the mean EPNL were the same, homes exposed to a greater variability (a higher standard deviation) were priced at a premium compared with those exposed to lower variability.

- A 2000 study in the Reno-Tahoe International Airport[32] area found an average 2.2 percent adverse impact on home values within the 65 DNL contour. That is, an average home inside the 65 DNL contour would be worth $2,400 less than it would be outside the 65 DNL contour. (The average home value in the study was $111,000.) The study also found that home values increased as distance from the airport increased. They estimated that values increased by about 5.5 percent with each additional mile from the airport terminal. The analysis relied on a hedonic regression model involving 1,417 home sales between 1991 and 1995.
- A 2002 hedonic regression model study of the area surrounding O'Hare International Airport found that single-family home prices were about seven percent lower within a 65 DNL contour, and increased by about five percent with each mile from the contour band.[33] The proposed O'Hare Modernization Plan, which enables a significant increase in air transportation capacity, will result in a narrower noise contour band due to changes in flight paths and retirement of older, noisier existing aircraft. The analysis estimated that the aggregate market value of all homes in the market area surrounding O'Hare could *increase* by as much as $468 million after the plan is implemented, and that this estimate is conservative, since it does not reflect the possibility that new access improvements to the airport's western side could increase employment potential, with a corresponding upward pressure on home prices among employees wishing to reside closer to their jobs. This study was prepared in response to a resolution passed by the Illinois Senate (92nd General Assembly) requesting it, and also provided a special appropriation to fund it.

Conclusions about the LAX Master Plan Environmental Characteristics that Potentially Affect Single-Family Home Values

As noted above, many of the comments received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR expressed a general concern about the effect that LAX may currently have, or the LAX Master Plan build alternatives could potentially have, on residential property values. The preceding discussion indicates that, overall, LAX has not prevented prices of homes in the general vicinity of the airport from increasing over time. Other comments raise more specific concerns about how the LAX Master Plan build alternatives would affect certain neighborhood disamenities, including noise, traffic, and air pollution. In most cases, the Master Plan build alternatives would not significantly affect, and in some cases would actually improve, the noise, traffic, and air pollution environment surrounding the airport, and thus would not be expected to adversely impact home values. In those areas where the environment is significantly impacted under one or more of the alternatives, the effects on home prices will depend on how local disamenities interact with macroeconomic forces, which, as discussed above, have the greatest effect on general home price trends.

The principal conclusions of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR with respect to those environmental issues resulting from Master Plan implementation that some commentors raised in connection with concerns about single-family home values include the following:

- **Noise.** As was further described in Section 4.1, *Noise*, and Section 4.2, *Land Use*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, significant impacts due to aircraft noise were defined as those sensitive uses which would be newly exposed to high noise levels or subject to a substantial increase in noise levels. While the analyses disclosed the overall change in noise exposure compared to the 1996 baseline and Year 2000 conditions, significant impacts were identified solely as those noise sensitive uses that would be newly exposed to high noise levels or would be exposed to a substantial increase in noise levels compared to 1996 baseline conditions. A

[32] Molly Espey and Hilary Lopez, "The Impact of Airport Noise and Proximity on Residential Property Values," *Growth and Change,* Vol. 31 (Summer 2000), pp. 408-411.

[33] Daniel P. McMillen, *Property Values and the Expansion of Chicago O'Hare Airport*, Department of Economics, University of Illinois at Chicago, November 7, 2002.

summary of aircraft noise exposure was provided in Section 4.1, *Noise*, on page 4-62 of the Supplement to the Draft EIS/EIR in Table 4.1-30, Total Aircraft Noise Exposure Effects Within 65 CNEL - All Alternatives in 2015, and Table 4.1-31, Significant Increase of 1.5 CNEL Within 65 CNEL of Build Alternatives Over 1996 Baseline Conditions. Significant unavoidable impacts were described in the above referenced sections under the heading "Level of Significance After Mitigation."

As was described in detail in Section 4.1, *Noise*, and Section 4.2, *Land Use*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, certain areas and uses that were not exposed to high noise levels under baseline conditions or Year 2000 conditions would be newly exposed to high noise levels or to substantial increases in high noise levels with implementation of the build alternatives by 2015. Nonetheless, in many of the communities surrounding LAX, the number of dwelling units that would be exposed to 65 CNEL or greater noise levels in 2015 would decrease (emphasis added) under Alternatives A, C, and D (and the No Project/No Action Alternative), but would increase under Alternative B due to new flight paths. The greatest reduction in dwelling units exposed to 65 CNEL or greater noise levels would occur under Alternative D, LAWA Staff's preferred alternative. The exposure reductions are due primarily to federally mandated phase-out of older, noisier Stage 2 jets. The proposed sound insulation and property acquisition programs that are planned to reduce these impacts even further were described in Section 4.2, *Land Use*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.

- **Vehicular Traffic.** Traffic effects are described in Section 4.3, Surface Transportation, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Much of the area around LAX presently experiences high levels of traffic congestion, and it is generally accepted that the level of congestion will worsen in the future for many area roadways with or without implementation of the LAX Master Plan. Although implementation of the Master Plan would increase activity at the airport, it would also allow for transportation improvements that would not otherwise be possible. Although certain individual intersections or roadway links would be significantly impacted under the build alternatives as further described in Section 4.3.2, Off-Airport Surface Transportation (subsection 4.3.2.6), intersection and roadway improvements proposed as part of the project in combination with proposed mitigation measures would still benefit overall conditions for residents in the area and travelers to and from the airport compared to future conditions if the project were not implemented. Additionally, as shown in Table S4.3.2-2, Study Area Traffic Benefits of LAX Master Plan Alternatives - Year 2015, and Table S4.3.2-4, Significantly Affected Surface Transportation Facilities, in Section 4.3.2, Off-Airport Surface Transportation (subsection 4.3.2.6), of the Supplement to the Draft EIS/EIR, under all of the build alternatives the number of roadway lane miles that operate at LOS F during the a.m. and p.m. peak hours of travel would be reduced, and the number of significantly affected intersections and street links would be reduced as compared to future no project conditions.

  In addition to the Mitigation Measures and Master Plan Commitments described in Section 4.3, Surface Transportation, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, a neighborhood traffic management program, as coordinated through LAWA and the City of Los Angeles Department of Transportation, would complement the ground access plan for the LAX Master Plan. The program, as further described on page 5-2 in Section 5.1, Year 2005 Ground Access Plan, of Technical Report 3b, Off-Airport Ground Access Impacts and Mitigation Measures, of Draft EIS/EIR, would be implemented shortly following approval of the Master Plan, and would be designed to assist specific neighborhoods in implementing measures to protect their residential streets from intrusion of airport-related traffic and their other airport-related impacts. Separate communities would be identified, and separate neighborhood traffic management programs would be initiated for each community. The overall objective of the neighborhood traffic management program is to cooperate jointly with the communities to define specific problems and then design acceptable solutions for each problem.

- **Air Quality.** Air quality was addressed in Section 4.6, *Air Quality*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Air pollutant emissions from airport operations (specifically from aircraft, ground support equipment, and traffic traveling to or from the airport) are among several sources that impact the air quality of neighborhoods surrounding LAX. In the air quality impact analysis, ambient concentrations from airport operations, when combined with background (non-airport) concentrations indicated that the National Ambient Air Quality Standards (NAAQS) would not be exceeded in the areas surrounding LAX. California Ambient Air Quality Standards (CAAQS)

would also be met for all criteria pollutants except PM_{10}.[34] Ambient concentrations of PM_{10} currently exceed the CAAQS, and are not expected to be attained by 2010, according the 2003 Draft Air Quality Management Plan prepared by the South Coast Air Quality Management District. As was further noted in Section 4.6, *Air Quality*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, a number of mitigation measures are proposed that will reduce significant adverse air quality impacts of the LAX Master Plan build alternatives, in many cases to a level that is less than significant.

TR-ET-1: Potential Impacts to the El Segundo Blue Butterfly

Introduction

This topical response has been prepared to address several comments to the Draft EIS/EIR concerning the methodology used to survey and estimate populations of the El Segundo blue butterfly (ESB) on the Los Angeles/El Segundo Dunes. Specifically, the following is a discussion of the development and use of the methodology implemented for estimating butterfly populations. In addition, this topical response addresses questions and comments regarding the conservation and restoration of the Los Angeles/El Segundo Dunes, mitigation ratios, and the proposed mitigation measures for the ESB.

Discussion

General Background on the Los Angeles/El Segundo Dunes

The Los Angeles International Airport (LAX) Airport Operation Area (AOA) is bounded on the west by Pershing Drive. Between Pershing Drive and Vista Del Mar Boulevard (west of the AOA) lie the Los Angeles/El Segundo Dunes (Dunes), part of which is occupied by the ESB. Section 4.11 *Endangered and Threatened Species of Flora and Fauna* (subsection 4.11.3 *Affected Environment*) of the Draft EIS/EIR stated "[a] review of historical aerial photographs and topographic maps indicates that the western portion of what is now the AOA historically supported a complex of vernal pools and native grassland not known to have supported the ESB. These native habitats were removed as a result of grading (cut and fill) activities between 1950 and 2000." The areas that were subject to cut and fill activities are not within the Dunes or the El Segundo Blue Butterfly Habitat Restoration Area (Habitat Restoration Area).

The Dunes have been divided into subsites to facilitate field investigations including restoration efforts within the Dunes. The Long-Term Habitat Management Plan for Los Angeles Airport/El Segundo Dunes does not define a priority for restoration of each subsite, but rather assigns priority to recommended management actions; therefore, priority for any particular subsite can change over time. An example of a management action to which high priority is given is annual assessments to identify subsites that need continued weed abatement. Subsites that are occupied and the number of butterflies within each subsite vary from year to year. However, the ESB has consistently been found within the backdune;[35] in fact the historical transect that is used for collecting data on the ESB runs through the backdune.

Restoration of the Los Angeles/El Segundo Dunes

The Dunes occupy a 307 acre site and constitute one of the last remaining vestiges of the once extensive southern California coastal dune system. The 307 acres are composed of 202.8 acres designated as the Habitat Restoration Area pursuant to the 1992 City of Los Angeles Ordinance 167940, and an additional 104.3 acres of dunes and adjacent landforms to the north of the Habitat Restoration Area. The Habitat

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[34] As described in Section 4.6, Air Quality (subsection 4.6.3.1), of the Supplement to the Draft EIS/EIR, the South Coast Air Quality Management District (SCAQMD) expects that the South Coast Air Basin will exceed the new 8-hour ozone (O_3) and 24-hour hour and annual $PM_{2.5}$ NAAQS, although areas of non-attainment have not been designated by the United States Environmental Protection Agency (USEPA). Additionally, due to the regional nature of ozone, further discussion of future attainment of 1-hour and 8-hour ozone ambient air quality standards is beyond the scope of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. Until further guidance, the USEPA has recommended that non-attainment/attainment of PM_{10} standards be considered indicative of non-attainment/attainment of $PM_{2.5}$ standards.

[35] Historically, the plant communities formed a continuum in response to topography and proximity to the ocean, beginning with the beach, bordered by a bluff, followed by the foredune, then the backdune (i.e., that portion of the dune area that is most distant from the ocean), and then forming a transition into plant communities typical of the coastal plain.

Restoration Area is not used for recreational purposes because it is a preserve for a rare plant community, southern dune scrub, and the ESB, a federally-listed endangered species. The Habitat Restoration Area has been undergoing ecological restoration since 1987. Since 1995, Los Angeles World Airports (LAWA) has assigned two full time landscape personnel to perform landscape maintenance within the Habitat Restoration Area. From 1996 to 2000, volunteers visited the site on a monthly basis and conducted weed abatement activities. Subsequent to September 11, 2001, heightened security measures have been implemented for all of LAX. Volunteer events to date have not been considered by LAWA.

Survey and Population Estimate Methodology

The methodology used to estimate ESB population was developed by Dr. Andrew Huang using information presented by Dr. Rudi Mattoni and Dr. Richard Arnold. The Huang model uses well-documented assumptions based on many years of cited empirical evidence, and is developed from standard equations for expressing population decline over time. Although this methodology has not yet been published, it has been peer reviewed by insect population biologists at Yale University and the University of California, Davis, and a statistical ecologist at Stanford University.[36] Dr. Arnold, who possesses an M.S. and a Ph.D. in Entomology and has worked as an entomologist for over 25 years, participated in the ESB surveys and wrote a report each year from 1998-2002 with a description of the methodology and an estimation of the ESB population. This report was submitted each year to LAWA as well as to the U.S. Fish and Wildlife Service (USFWS). No comment has been received from the USFWS regarding the methodology used to estimate population size.

The methodology incorporates a historical transect, established by Dr. Rudi Mattoni in 1984, and block counts established in 1996. The block counts were established in order to capture information in areas that had been restored with coast buckwheat (*Eriogonum parvifolium),* the food plant for the ESB, which did not have the plant when the historical transect was developed. According to the annual report,[37] the historical transect was walked each year during the flight season of the ESB and the block counts were conducted at the peak of the flight season. It was not feasible to conduct the block counts throughout the season as each block needed to be counted at the same time to avoid counting the same butterfly more than once and the block counts cover the approximately 200-acre Habitat Restoration Area. Both the block count and the historical transect were used to estimate the population size. The transect count was used to establish the total seasonal ESB population number for the historical transect. The block count was then used to estimate the seasonal population for the entire Habitat Restoration Area.

Some commentors questioned the scientific validity of the Huang model as applied by Arnold to estimate ESB populations at the Dunes. First, the models discussed (Huang as discussed in Arnold 2002,[38] and Pollard, Watt, and Zonneveld as discussed in Mattoni et al 2001[39]) each use a slightly different set of parameters that give variable magnitudes in population size, as discussed in Mattoni et al. 2001. Hence, direct comparisons of population size obtained by running the same numbers through different models are not always possible. In the absence of true knowledge of the actual population size on a given day, estimates obtained from multiple models should be viewed as a range of options. Second, issues concerning the validity of the Huang model can be resolved by clarifying several assumptions made by the commentor.

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36 Arnold, Richard A., November 2002, Report of El Segundo Blue Monitoring Activities in 2002 at the Los Angeles International Airport, Prepared for Alfred W. Tong and Andrew Huang, PhD., Environmental Management Division, Los Angeles World Airports, 7301 World Way West, Los Angeles, CA 90045 and U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Ave. West, Carlsbad, CA 92008.

37 Arnold, Richard A., November 2002, Report of El Segundo Blue Monitoring Activities in 2002 at the Los Angeles International Airport, Prepared for Alfred W. Tong and Andrew Huang, PhD., Environmental Management Division, Los Angeles World Airports, 7301 World Way West, Los Angeles, CA 90045 and U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Ave. West, Carlsbad, CA 92008.

38 Arnold, Richard A., November 2002, Report of El Segundo Blue Monitoring Activities in 2002 at the Los Angeles International Airport, Prepared for Alfred W. Tong and Andrew Huang, PhD., Environmental Management Division, Los Angeles World Airports, 7301 World Way West, Los Angeles, CA 90045 and U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Ave. West, Carlsbad, CA 92008.

39 Mattoni, R., T. Longcore, C Zonneveld, and V. Novotny, 2001. "Analysis of transect count to monitor population size in endangered insects," Journal of Insect Conservation.

The Huang model is based upon empirical observations and mark-recapture efforts documenting the life span of adult butterflies, the beginning and end of the flight season, and the peak of the flight season. Plotting this information over the years as it has been collected generates a bell-shaped or normal curve. Knowing the peak and the ends of the curve allows for some extrapolation of the points in between without sacrificing accuracy. Complete surveys were done in 1995 and 1998, and partial surveys in 1996 and 1997. However, with knowledge of the shape of the actual population distribution, it is possible to work with partial seasonal data, even though it may not be possible to make direct comparisons between estimates made before and after 1994. The Huang model relies in part upon the assumption of a normal distribution, and also of a mortality rate that is proportional to the population size as expressed using a standard equation:[40] Both of these assumptions have been well-documented by Huang and the use of a standard mortality rate is similar in approach to the model developed by Watt.[41] However, because the Huang model incorporates a term for the rate of population decrease rather than longevity in days, the calculation is slightly different. The value 1.59 results from solving an equation for the sum of the population size each day of the season multiplied by a daily rate of decrease.[42] The figure 1.59 is close to the 1.66 number resulting from the Mark Release Recapture (MRR) field results. Both 1.59 and 1.66 were used when estimating population size resulting in a low and high estimation.

The longevity estimate of six days was made by Arnold using standard mark-recapture methods that are not reliant on knowing the precise age of the individuals in the population. Thus, longevity is incorporated in Huang's model but in a different way. This does not make the model incorrect any more than Zonneveld's approach to mortality estimates makes Watt's model incorrect.

The population size provided in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR is an estimate and will vary based on the methodology used. The estimated population size is used as a basis for understanding population trends and not exact numbers of butterfly on the Dunes. If the same methodology is applied each year, a generalization can be made, over time, regarding the population trend. Population size is not the only criteria for recovery. As stated by the El Segundo blue butterfly recovery plan.[43] The following are also criteria for recovery: at least one secure population in each Recovery Unit,[44] coastal dune habitat is managed for each population, each population must exhibit an upward trend, and a program is initiated to inform the public about the ESB and its habitat. However, sustaining high population densities at any one site increases opportunities for immigration among sites. This not only maintains genetic diversity within sites, but creates a network of subpopulations that better ensure the survival of the larger, regional population of butterflies.

Air Pollution and Population Trends

Based on the ESB population numbers and a one-year field investigation of air emissions and deposition undertaken at the Dunes, the Draft EIS/EIR concluded that the potential effects of jet exhaust emissions would not affect the ESB (subsection 4.11.6 of the Draft EIS/EIR). Although a population trend can not be determined with two years of data, the data collected between 1996 and 2002 from the historical transect and from the block counts show a stable population, generally increasing in years of abundant seasonal rain, which determines increased flower production of coast buckwheat. At this stage of collecting ESB data, no correlation can be seen between current airport activities and negative effects on the population of the ESB. Quite the opposite, the ESB continues to successfully complete its reproductive cycle each year. Any correlation between increased vanadium and effects on the ESB would be speculative at best.

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40 Ricklefs, R. E., Ecology, Third Edition, W. H. Freeman and Company, New York, 1990,. p. 326.

41 Matonni et al, 2001

42 Arnold, Richard A., November 2002, Report of El Segundo Blue Monitoring Activities in 2002 at the Los Angeles International Airport, Prepared for Alfred W. Tong and Andrew Huang, PhD., Environmental Management Division, Los Angeles World Airports, 7301 World Way West, Los Angeles, CA 90045 and U.S. Fish and Wildlife Service, Carlsbad Field Office, 2730 Loker Ave. West, Carlsbad, CA 92008.

43 U.S. Fish and Wildlife Service, September 1998, El Segundo Blue Butterfly (*Euphilotes batoides allyni*) Recovery Plan.

44 Areas known to be inhabited by the El Segundo blue butterfly or areas that contain restorable habitat for the animal have been grouped into four "Recovery Units" based on geographic proximity, similarity of habitat, and potential genetic exchange. Each Recovery Unit includes one or more existing populations of the El Segundo blue butterfly and/or restorable habitat for the management of at least one population.

Mitigation Ratios and Location

Installation of navigational aids in support of runway implementation located to the east of Pershing drive would result in the conversion of occupied ESB habitat. Mitigation measures for impacts to occupied ESB habitat would be mitigated at a ratio of 1:1 and implemented 3 years prior to the impact,, in conformance with the Draft Biological Opinion issued by the USFWS. Mitigation at a ratio of 1:1 is felt to be justified and appropriate based on the fact that the revegetation/restoration of compensatory ESB habitat would occur prior to loss of on-site habitat. Hence, there would be no temporal loss of habitat that might otherwise warrant a higher mitigation ratio. Subsite 23 has historically not had any ESB[45] and has few coast buckwheat plants; however it is surrounded by subsites that have been occupied and have a substantial number of coast buckwheat plants. Hence, subsite 23 is considered to be well-suited as a mitigation site by planting coast buckwheat plants within this "in-fill" area. LAWA feels that providing additional suitable habitat within the Habitat Restoration Area would be more beneficial for the ESB than revegetating in the highly disturbed areas to the north of the Habitat Restoration Area. Subsite 23 is large enough to fulfill the mitigation. Should additional areas be required, there are nearby subsites that have historically supported few coast buckwheat plants and no ESB that can be considered for mitigation. Any change in the mitigation area will be coordinated with the California Department of Fish and Game (CDFG) and the USFWS.

Mitigation Measure MM-ET-4 also requires the relocation of ESB pupae to subsite 23. Any pupae potentially impacted would be relocated in consultation with the USFWS by moving the entire coast buckwheat plant under which the pupae were found. Subsite 23, to which the pupae would be moved, is within occupied habitat and provides opportunity for the relocated pupae to obtain food, mate, and find locations to lay eggs upon maturity. Mitigation coast buckwheat plants to be planted in subsite 23 shall be planted a minimum of three years prior to the impact, not only to allow for establishment of the plants, but also to ensure that the plants are mature enough to bloom. All mitigation for the ESB would be conducted in conformance with the Draft Biological Opinion issued by the USFWS.

TR-ET-2: Definition and Evaluation of Wetlands/Vernal Pools

Introduction

This topical response has been prepared to address several comments to the Draft EIS/EIR concerning the analysis of wetland habitat present at LAX and development of the proposed mitigation measure for impacts to cysts of the Riverside fairy shrimp. Specifically, the following is a discussion of the results of the U.S. Army Corp of Engineers jurisdictional delineation of ephemerally wetted areas at LAX, the proposed rule for Riverside fairy shrimp designated critical habitat and how it relates to wetland habitat at LAX, and incorporation of the Draft Biological Opinion issued by the U.S. Fish and Wildlife Service pursuant to Section 7 of the Federal Endangered Species Act. As a result of extensive coordination and consultation undertaken with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, FAA and LAWA have incorporated the conservation measures specified in the Draft Biological Opinion including, identification of feasible sites for offsite relocation of cysts of the Riverside fairy shrimp, that can not feasibly be avoided, specifications and performance standards for offsite relocation, construction avoidance measures for sites that would be avoided by Alternative D, and protocols for monitoring and maintenance of relocation sites.

Discussion

Analysis of Wetlands/Vernal Pools at LAX

Analysis was undertaken of all areas within the Master Plan Boundary that fit the legal definition of wetlands. LAX is partially located within an area that historically consisted of a relatively flat plain containing a mix of native grasslands and coastal scrub habitats interspersed with vernal pools. Unlike the marshes, swamps, or bogs that are normally associated with wetland habitats, vernal pools are shallow pools that are seasonally inundated. Vernal pools consist of shallow depressions that form over

[45] Please see Appendix F-C, *Errata to the Draft EIS/EIR and the Supplement to the Draft EIS/EIR*, of this Final EIS/EIR, regarding the revised Figure 4.11-6, 1998 El Segundo Blue Butterfly Densities, of the Draft EIS/EIR.

impermeable clay or consolidated sandstones that inhibit percolation of water from seasonal storms. These ephemeral vernal pool habitats support a unique assemblage of aquatic resources that are adapted to these dynamic environments.

A total of 52 sites within the Airport Operation Area (AOA) were subject to a U.S. Army Corp of Engineers (USACOE) jurisdictional delineation consisting of an evaluation of soils, hydrology, and vegetation to determine the presence or absence of wetland habitat, which includes vernal pools. Of the 52 sites evaluated, none of the sites were characterized by hydric soils or wetland vegetation. Of the 52 sites evaluated, nine sites with a total area of 1.3 acres met the USACOE criteria for wetland hydrology and were thus determined to be atypical wetlands pursuant to Section 404 of the Clean Water Act.[46] The nine sites are not natural wetlands, but rather the result of construction activities, such as borrow and fill, in support of airport operations and expansion since 1950. These nine sites contain the cysts of the federally endangered Riverside fairy shrimp and are considered wetlands under federal law.

As described in the Final EIS/EIR, implementation of Alternatives A, B, and C would result in direct impacts to 1.3 acres (nine distinct sites) of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp. Impacts to these sites may be direct (e.g. wetlands are filled) or indirect (e.g. wetland hydrology is sites EW001, EW002, and EW006 that comprise 0.04 acre (1,853 square feet) of degraded wetland habitat containing embedded cysts of the Riverside fairy shrimp. These impacts would be reduced to below the level of significance through the salvage and relocation of the soils containing embedded cysts to an offsite location that would provide the opportunity for the cysts to complete their lifecycle. The remaining six sites, EW009, EW012, EW013, EW014, EW015 and EW016, would be subject to indirect impacts from construction activities that would be reduced to below the level of significance through the implementation of construction avoidance measures including Best Management Practices (BMPs) required pursuant to the Standard Urban Stormwater Mitigation Plan and the LAX Stormwater Pollution Prevention Plan.

Mitigation Measure MM-ET-1 of the Final EIS/EIR proposes the relocation of soils containing cysts of Riverside fairy shrimp from EW001, EW002, and EW006 to a suitable vernal pool conservation site on property owned by the FAA and designated a habitat preserve at the former Marine Corps Air Station at El Toro, or a comparable site approved by the USFWS. FAA and LAWA would undertake the relocation with specifications provided by the Draft Biological Opinion, including requirements for maintenance, monitoring, and public education. The six remaining sites within the AOA would be avoided through implementation of construction avoidance measures and the Standard Urban Water Mitigation Plan. It is important to note that relocation/mitigation of the Riverside fairy shrimp is an issue that must be resolved no matter what alternative is chosen for the LAX Master Plan, including the No Action/No Project Alternative. The existing operations and maintenance of the AOA (activities required by the FAA to ensure the safe and efficient use of navigable airspace) have been deemed to be incompatible with the known presence of the Riverside fairy shrimp cysts, and relocation of the cysts must be addressed even if none of the proposed build alternatives are approved.

Critical Habitat for the Riverside Fairy Shrimp

As described in Section 4.11, Endangered and Threatened Species of Flora and Fauna, of the Supplement to the Draft EIS/EIR, the U.S. Fish and Wildlife Service (USFWS) issued a final rule in May 2001 designating critical habitat for the Riverside fairy shrimp. Critical habitat for the Riverside fairy shrimp included the species' ranges within Ventura, Los Angeles, Orange, Riverside, and San Diego Counties. Within Los Angeles County, the USFWS designated the Cruzan Mesa and the Los Angeles coastal prairie unit, a 30-acre area within and adjacent to the Habitat Restoration Area, west of Pershing Drive. Areas east of Pershing Drive occupied by cysts of the Riverside fairy shrimp were not designated critical habitat because of the extensive alteration of habitat that has occurred at LAX as far back as 1950. In October 2002, the United States District Court for the District of Columbia vacated and remanded the final rule designating critical habitat for the Riverside fairy shrimp. Consequently, the Los Angeles/El Segundo Dunes do not currently contain designated critical habitat for the Riverside fairy shrimp. The court-ordered date for issuing the final rule designating critical habitat for the Riverside fairy shrimp is July 30, 2004.

[46] U.S. Army Corps of Engineers, October 17, 2001. Letter; Subject: Jurisdictional Determination of Wetlands at LAX, Addressed to Sapphos Environmental, Inc. (Dr. Irena Mendez).

Mitigation Ratio

LAWA or its designee shall undertake mitigation for direct impacts to 1,853 square feet of degraded wetland habitat containing cysts of the Riverside fairy shrimp at a mitigation ratio of 3:1, for a total of 5,559 square feet. The 5,559 square feet of vernal pool surface area will be created on property owned by the FAA and designated a habitat preserve at the former Marine Corps Air Station at El Toro, or a comparable site approved by the USFWS.

Identification of Potential Vernal Pool Restoration or Creation Sites

As a result of Section 7 consultation between LAWA, the FAA, and the USFWS, relocation of soils containing embedded cysts of the Riverside fairy shrimp has been determined to be feasible. The Draft Biological Opinion acknowledges the feasibility of relocation of soils containing cysts from three areas that would be unavoidably impacted as a result of Alternative D to property owned by the FAA and designated as a habitat preserve at the former Marine Corps Air Station at El Toro, or a comparable site approved by the USFWS, Extensive research was conducted to identify potentially suitable relocation sites for soils containing embedded cysts of the Riverside fairy shrimp from LAX. Information regarding sites that historically or currently support vernal pools or vernal pool associated species was gathered from the Vernal Pool Recovery Plan, the California Natural Diversity Database (CNDDB), and coordination with recognized experts in the field. This information was augmented through a review of geologic maps of the coastal portions of Los Angeles and topographic quadrangles for locations known to have historically supported vernal pools. As a result of this research, a total of 35 potential vernal pool mitigation sites were identified for further site characterization.

Each of the 35 sites was visited and inspected by teams of biologists and environmental analysts. Prior to visiting the site, analysis of site topography, historic or extant vernal pools, historic or extant vernal pool-associated species, drainage features, climate, and parent material (from regional geologic maps) was conducted. Hazardous materials databases were also consulted for information on known potential sources of contamination for those sites. During each site visit, in-field soil texture analysis was conducted, followed by laboratory analysis of collected soil samples; land use at the site and surrounding the site was characterized; plant communities were characterized; and the presence or absence of suitable hydrology was determined.

Prioritization of potential sites for the relocation of soils containing cysts of the Riverside fairy shrimp was based solely on the presence of physical and biological characteristics provided in the Recovery Plan for Vernal Pools of Southern California and did not reflect planning constraints indicated by current land uses. LAWA and FAA, in consultation with USFWS, have recommended the relocation of cysts to alternate locations within the Los Angeles Basin portion of the Los Angeles-Orange Management Area for vernal pools. However, LAWA has evaluated the feasibility of vernal pools or vernal pool complexes located in the Orange County portion of the Los Angeles Basin-Orange Management Area and the Ventura County portion of the Transverse Management Area upon encountering technical, engineering, or prohibitive acquisition issues that compromised the feasibility of potential sites within Los Angeles County. Potential sites within the Los Angeles County portion of the Los Angeles-Orange Management Area are depicted in Figure S4.11-1, Vernal Pool Restoration Opportunities Considered, in Section 4.11, Endangered and Threatened Species of Flora and Fauna, of the Supplement to the Draft EIS/EIR.

Given the mitigation ratio of 3:1 for occupied habitat, LAWA anticipated that no more than two potentially suitable sites for vernal pool restoration or creation would be considered to accommodate the soil containing embedded cysts of the Riverside fairy shrimp from LAX. The relocation site was identified through section 7 consultation between LAWA, FAA, and USFWS. The Draft Biological Opinion issued by the USFWS is included as Appendix F-E of this Final EIS/EIR.

Vernal Pool Creation

Vernal pool creation shall be undertaken by LAWA or its designee, in consultation with the USFWS. Currently, the Riverside Fairy Shrimp Conservation Package includes a conceptual plan for vernal pool construction and the relocation of soils containing cysts of the Riverside fairy shrimp. The Conservation Package was developed pursuant to Section 7 consultation between LAWA, FAA, and the USFWS. Ongoing coordination between LAWA, FAA, and the USFWS would guide the design, implementation, and monitoring of all vernal pool creation activities, and will be included in an updated Riverside Fairy Shrimp Conservation Package.

Vernal Pool Management and Monitoring Program

LAWA or its designee, in coordination with the USFWS and a qualified wildlife biologist, shall develop a management and monitoring program for the created vernal pool habitat and the Riverside fairy shrimp that conforms to the specifications provided in the Draft Biological Opinion. A memorandum of understanding between all stakeholders, including the entities receiving the cysts, resources agencies, and LAWA, would address both short-term and long-term management of the vernal pool sites.

TR-GEN-1: Environmental Baseline

Introduction

This topical response addresses the baseline year used in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR; the introduction of updated information in the Supplement to the Draft EIS/EIR; and the use of an adjusted environmental baseline for certain environmental disciplines. A discussion of the No Action/No Project Alternative is provided in Topical Response TR-GEN-2.

Discussion

The Environmental Baseline

As indicated in the Introduction to Chapter 4 of the Draft EIS/EIR, in accordance with Section 15125 of the State CEQA Guidelines, the affected environment constitutes the baseline physical conditions by which it was determined whether an impact would be significant. Two baseline conditions were used in the analysis of the LAX Master Plan alternatives. These include the Environmental Baseline, or the physical conditions that existed at the time the Notice of Preparation was published (in this case, physical conditions as of mid-1997 and aviation activities from the most recent, previous year, or 1996), and the Adjusted Environmental Baseline, which reflects environmental baseline conditions on the airport, and future conditions (allowing for regional growth) off-airport.

Under the 1998 revisions to the CEQA Guidelines, an EIR must describe the physical environmental conditions in the vicinity of a proposed project "as they exist at the time the notice of preparation is published…" Furthermore, Section 15125(a) of the 1998 revised State CEQA Guidelines states "[t]his environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

In accordance with these directives, the Draft EIS/EIR normally uses the date of July 1997, the date on which the notice of preparation (NOP) was published, as the baseline date for its environmental analysis. When a full year's worth of data is appropriate for describing the existing environmental setting, data is normally used from 1996 - the last full year before the date of the July 1997 NOP. Data for 1996 was used to provide information regarding the operational characteristics of the airport and were consistently applied in the comprehensive, interrelated modeling efforts for traffic, noise, and air quality.

In certain instances, data from earlier years was used in the Draft EIS/EIR when that was the only available data at the time the document was prepared. An example is the solid waste analysis, which relied upon a study of solid waste generation at LAX that was conducted in 1994.[47] In other instances, data from later years (e.g., 1999 or 2000) were used when it was considered to be appropriate to use more recent data. For example, known hazardous materials contamination at LAX is reported through 2002 in order to ensure that all potential environmental impacts of Master Plan implementation are disclosed. In some cases, data from 1997 or later are reported because of the timing of the analysis. For example, in 1997, a facility-wide tenant survey was conducted to identify air emissions sources at LAX. As a result, data from 1997 are reported in the Draft EIS/EIR as these are the only tenant data available. Similarly, surveys of flora and fauna were conducted over a number of years, as required by the regulatory agencies, and are reported accordingly in the Draft EIS/EIR.

[47] In the Supplement to the Draft EIS/EIR, the accuracy of these solid waste generation projections was evaluated using LAWA's updated report of solid waste generation and diversion at LAX in 2000.

In instances where data later than 1996/1997 are reported, these data have no bearing on the validity and appropriateness of the 1996 operational data used for the traffic, air quality, and noise analyses. Moreover, whenever calculations are required to determine a project impact (for example, increased noise levels, increased water consumption, etc.), calculations are performed using 1996 as the baseline.

The environmental baseline used for the impacts analysis in the Draft EIS/EIR was also used for the impacts analysis in the Supplement to the Draft EIS/EIR. In so doing, the basis for the CEQA analysis in the Supplement to the Draft EIS/EIR is consistent with that of the Draft EIS/EIR, and is in accordance with the CEQA Guidelines directive that the environmental setting as of when the NOP was published will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. Consequently, projected future changes anticipated to result from each of the LAX Master Plan alternatives are compared to uniform baseline data, allowing for consistency of comparison (i.e., 'apples' are compared to 'apples').

The baseline assumptions used in the Draft EIS/EIR are responsive to CEQA requirements, are designed to provide the most clear and meaningful basis from which to measure and evaluate impacts, and do not overstate the impacts of the No Action/No Project Alternative.

The NEPA environmental impact analysis focuses on comparing the impacts of the Master Plan alternatives to the impacts of the No Action/No Project Alternative. Comparison to the CEQA baseline or to the adjusted baseline is not required by NEPA, and no NEPA provisions or guidelines address these baseline issues.

Updated Conditions

For updated comparative purposes, the Supplement to the Draft EIS/EIR includes a description of the more current physical environmental conditions in the vicinity of the proposed project. The physical conditions occurring at, and around, the LAX Master Plan study area in the Year 2000 are considered to be the most current environmental conditions that are meaningful and relevant to the analysis of the LAX Master Plan. The Year 2000 conditions used within the Supplement to the Draft EIS/EIR provide for a full year's worth of data for environmental conditions, including as influenced by existing airport operations, as they existed prior to the terrorist attacks of September 11, 2001. Given that the events of September 11th substantially altered certain characteristics of operations at LAX, a description of existing environmental conditions in 2001 or 2002 is not considered to be representative of typical conditions.[48]

The use of Year 2000 conditions within the Supplement to the Draft EIS/EIR is, as noted above, for updated comparative purposes. The Environmental Baseline conditions described in the Draft EIS/EIR, which are referred to in the Supplement to the EIS/EIR as the "1996 Baseline" conditions to help more readily distinguish from references to Year 2000 conditions, constitute the primary basis by which all conclusions regarding the significance of impacts are determined for all build alternatives (Alternatives A, B, C, and D). For certain environmental disciplines, an "adjusted environmental baseline" serves as the basis for determining the significance of impacts, as described below.

In instances where the environmental setting under Year 2000 conditions are materially different from that of 1996 baseline conditions, such differences are described in the Supplement to the Draft EIS/EIR, as are any material differences in the impacts that would result by using the Year 2000 conditions compared to the 1996 Baseline conditions. Such disciplines include noise, air quality, human health risk, employment/socioeconomics, environmental justice, and others. To reiterate, however, conclusions regarding the significance of impacts for any, and all, build alternatives are based on the 1996 baseline or, for certain environmental disciplines, the adjusted environmental baseline.

The Adjusted Environmental Baseline

As described in Chapter 4 of the Draft EIS/EIR, the EIS/EIR uses an adjusted environmental baseline with respect to the evaluation of certain impacts, particularly relative to future traffic conditions and

[48] See the discussion of "system shocks" in Topical Response TR-RC-2. Also see Appendix S-B, Existing Baseline Comparison Issues - 1996 to 2000 (Section 1.2), of the Supplement to the Draft EIS/EIR, for a discussion of long-term air traffic at LAX. As indicated in that section, in the long term (i.e., by 2015, the horizon year evaluated in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR), air traffic at LAX is projected to fully recover from the effects of September 11, 2001.

associated air quality and noise impacts. The following describes the basis for, and importance of, addressing such impacts using an adjusted environmental baseline.

As described above, the environmental setting that normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is "significant" is defined under the CEQA Guidelines as normally that which exists at the time the NOP is published. There are, however, certain environmental impact analysis disciplines that have developed highly sophisticated methods by which to analyze potential future project-related impacts, including use of computer hardware and software models that analyze substantial amounts of data and information about the potential construction and operation impacts of a proposed project. The ability to successfully manage and properly understand substantial amounts of data can be especially challenging when a proposed project may have potential impacts that, in and of themselves, may be large, but that may still be dwarfed by potential changes in the background environment. Thus, in evaluating environmental impacts related to traffic, air quality and noise, the analysis necessarily focuses on the potential project's cumulative impacts, because the incremental impacts from the project itself are meaningful principally in the context of those cumulative impacts.

CEQA provides specific guidance for this type of cumulative impact analysis. Section 15130 of the CEQA Guidelines, for example, states that an EIR shall discuss a project's cumulative impacts when the project's incremental effects are "cumulatively considerable," meaning that those incremental effects are considerable "when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects." See Section 15065(c). In evaluating the pertinent cumulative impacts, the lead agency may consult either a "list of past, present and probable future projects producing related or cumulative impacts" or a "summary of projections" contained in adopted plans or certified environmental documents. Section 15130(b)(1). The lead agency must then determine whether a proposed project's "contribution" to a "significant cumulative impact" can be rendered "less than cumulatively considerable" and thus "not significant." Section 15130(a)(3). In making this determination, the project's incremental "contribution" is deemed "less than cumulatively considerable" if the lead agency requires the project to implement or fund its "fair share" of mitigation measures designed to alleviate the cumulative impact.[49]

Over time, certain environmental impact analysis disciplines have developed standardized approaches toward how they determine which "probable future projects" and background growth trends and projections should be taken into account and how the cumulative environmental impacts of the proposed project and this other growth should be evaluated. The traffic engineering profession, for example, has developed specific standards and criteria relating to how the capacity of an off-site intersection should be measured, now and in the future, in order to determine the "significance" of a project's added incremental traffic impacts. Any particular intersection in a proposed project's vicinity, of course, may be impacted in the future by the project's incremental impacts, by the cumulative impacts of other projects and background growth, or by a combination of both. In undertaking their analysis, traffic engineers typically use the time horizon for buildout of the proposed project as the appropriate date for determining what future traffic growth will be taken into account in measuring off-site traffic impacts. Thus, for example, where the time horizon for the LAX Master Plan is 2015, the traffic analysts use the same 2015 date in determining what non-project-related traffic growth will be considered in projecting the future cumulative impacts of any given intersection. Once these cumulative impacts are calculated, the traffic analysts quantify which portion of those total future cumulative impacts are due to the proposed project's incremental impacts. By then adjusting the off-site baseline for non-project-related traffic activity to this same projected 2015 background traffic activity level, the non-project-related cumulative traffic impacts are effectively cancelled out, so that only the project's incremental impacts remain to be mitigated and the project's "fair share" of proposed mitigation is thereby established. This analytical method of evaluating these cumulative environmental impacts is commonly referred to as using an "adjusted baseline" approach.

Notably, the "adjusted baseline" methodology is applicable only to off-site conditions, where the extensive cumulative impacts of other future projects are expected to occur. Because any on-site traffic would be

[49] See the discussion of "system shocks" in Topical Response TR-RC-2. Also see Appendix S-B, Existing Baseline Comparison Issues - 1996 to 2000 (Section 1.2), of the Supplement to the Draft EIS/EIR, for a discussion of long-term air traffic at LAX. As indicated in that section, in the long term (i.e., by 2015, the horizon year evaluated in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR), air traffic at LAX is projected to fully recover from the effects of September 11, 2001.

generated principally by project-related incremental growth, the "normal" current conditions baseline analysis is used to measure the "significant" on-site traffic impacts. This results in a highly conservative analysis because it assumes that all future on-site traffic activity levels and their impacts are project-caused impacts, even though a measurable portion of such on-site traffic growth over time would doubtless be caused by background growth and other non-project related factors. Because all such future impacts are effectively deemed to be incremental project-related growth, the LAX Master Plan must mitigate all such on-site traffic impacts, not just its arguable "fair share" of such cumulative impacts.

Similar procedures to isolate incremental traffic growth due to the project from all other traffic growth have been in use for many years. Traffic impact analysis policies and guidelines for both the City of Los Angeles and the County of Los Angeles require this "adjusted baseline" approach. Within both the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, the noise analysis (Section 4.1) and the air quality analysis (Section 4.6) build upon the cumulative impacts traffic analysis contained in the off-site surface traffic impacts analysis (Section 4.3.2). Consequently, those sections, too, are based on that "adjusted baseline" methodology.

TR-GEN-2: No Action/No Project Alternative Assumptions

Introduction

As required by NEPA and CEQA, the Draft EIS/EIR and Supplement to the Draft EIS/EIR evaluate impacts that would occur under the No Action/No Project Alternative. This topical response addresses the regulatory basis for this alternative, the components of the alternative, the relationship between the No Action/No Project Alternative and the build alternatives, and the inclusion of specific on-airport and collateral development projects in the definition of the alternative.

The adequacy of past environmental reviews of any projects already approved and/or undertaken at LAX that have been included in the No Action/No Project Alternative is not within the purview or scope of the LAX Master Plan EIS/EIR.

Discussion

Regulatory Basis for the No Action/No Project Alternative

The Council on Environmental Quality's (CEQ) regulations implementing NEPA requires an EIS to "include the alternative of no action."[50] The no action alternative analyzes the reasonably foreseeable environmental impacts likely in the absence of the proposed federal action. This alternative assumes the continuation of "the present course of action until that action is changed." Moreover, "where a choice of 'no action' by the agency would result in predictable actions by others, this consequence of the 'no action' alternative should be included in the analysis." (Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Guidelines). Section 15126.6(e) of the State CEQA Guidelines requires an EIR to evaluate "the specific alternative of 'no project'… along with its impact." For projects that consist of a revision to an existing use, plan, policy or ongoing operation, the State CEQA Guidelines direct that the no project alternative consist of the continuation of the existing plan, policy, or operation into the future. In such situations, "other projects initiated under the existing plan will typically continue while the new plan is developed" (Section 15126.6(e)(3)(A) of the State CEQA Guidelines). As indicated in Section 15126.6(e)(2) of the State CEQA Guidelines, the no project alternative should consist of "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

The No Action/No Project Alternative is Not Too Expansive

The LAX Master Plan is being developed to supersede the existing interim LAX Master Plan adopted in 1981. Accordingly, the No Action/No Project Alternative was defined to include additional projects and actions, consistent with the existing 1981 Master Plan, that would reasonably be expected to occur in the foreseeable future if the LAX Master Plan is not approved and/or that are predictable responses to increasing congestion at LAX that would be implemented in the absence of FAA action. Operational

[50] 40 C.F.F. § 1502.14(d).

changes that are reasonably foreseeable include remote parking of commuter aircraft, flight scheduling changes, and other measures to reduce curbside congestion, and to improve safety, efficiency, and passenger convenience. This scenario also evaluates the airlines' likely continued response to increasingly restrictive LAX capacity limitations through adjustments in their air service, such as introducing a greater proportion of wide-body aircraft.

The State CEQA Guidelines permit the no project alternative to include projects that are in the planning stages, as long as such projects are consistent with the existing plan. Such projects are not required, under NEPA or CEQA, to have been previously approved in order to be considered reasonably foreseeable, nor is the status of the environmental review of such projects a determinative factor. However, projects included in the No Action/No Project Alternative that have not yet been approved would be subject to environmental review prior to their implementation.

The No Action/No Project Alternative assumes land uses and the regional transportation infrastructure as forecast for future years, to ensure that the impacts of the Master Plan are not underestimated by adding project impacts to a lesser level of background activity such as would occur if only baseline conditions were considered.

The No Action/No Project Alternative is Not Too Limited

The No Action/No Project Alternative appropriately does not include projects that would require additional federal approval. Although it is not inconceivable that LAWA would pursue additional project approvals, beyond those identified in the No Action/No Project Alternative, in the absence of the Master Plan, the nature of such projects is purely speculative at this time. Rather than constituting a legitimate component of the No Action/No Project Alternative, such projects would be considered separate actions or projects in their own right and not, as noted above, a continuation of the existing plan.

Relationship Between No Action/No Project Alternative and LAX Master Plan Build Alternatives

As outlined in Section 15126.6(e)(1) of the State CEQA Guidelines, the purpose of the no project alternative is "to allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." As outlined in the Introduction to Chapter 4 of the Draft EIS/EIR, the No Action/No Project Alternative is not the baseline for analyzing the impacts of the build alternatives for CEQA purposes. Rather, for most issues, the baseline is the conditions that existed at the time the NOP was published (i.e., June 1997). In the case of impacts associated with traffic, the baseline has been adjusted to account for future background conditions in order to ensure that the impacts of the LAX Master Plan alternatives are not underestimated (see Topical Response TR-GEN-1).

Under both NEPA and CEQA, the purpose of the no action or no project alternative is to provide decisionmakers with information that will aid in their decisionmaking process. However, under CEQA, "the no project alternative is not the baseline for determining whether the project's environmental impacts may be significant" (Section 15126.6(e)(1) of the State CEQA Guidelines). Rather, the existing environmental setting is the baseline against which the significance of project impacts are measured. As a result, it is the difference between future conditions with the project and the environmental baseline, not the difference between future conditions with the project and future conditions without the project, that determine the obligation to mitigate project impacts under CEQA, and that serve as the basis for requiring Findings and a Statement of Overriding Considerations.

Inclusion of On-Airport Development Projects

As indicated above, the No Action/No Project Alternative was defined to include evaluation of additional projects that would reasonably be expected to occur in the foreseeable future if the LAX Master Plan is not approved and that could be implemented without any FAA action. The State CEQA Guidelines permit the no project alternative to include projects that are in the planning stages, as long as such projects are consistent with the existing plan. Neither CEQA nor NEPA require that such projects must have been previously approved in order to be included in the no project or no action alternative. Therefore, comments concerning the adequacy of the environmental review of projects included in the No Action/No Project Alternative are not relevant to the LAX Master Plan project.

As stated above, the No Action/No Project Alternative does not serve as the environmental baseline for the EIR, and is not the basis of comparisons to the build alternatives for the purposes of determining significance or mitigation pursuant to CEQA, or requiring Findings or a Statement of Overriding Consideration. As a result, inclusion of the on-airport development projects in the No Action/No Project Alternative does not serve to minimize the impacts of the build alternatives, as they are appropriately compared to the environmental baseline for the determination of significance and other matters, as noted above.

If the LAX Master Plan is not approved, LAWA will be required to respond increasing congestion at LAX. Projects that could be implemented without any FAA action would reasonably be expected to occur in the foreseeable future. Thus, on-airport development projects not requiring FAA approval that maximize the use of airport property and improve airfield access, efficiency and security--including the Century Cargo Complex, remote aircraft parking of commuter aircraft, cargo development along Imperial Boulevard, renovation of the Tom Bradley International Terminal, and the Taxiway EE project--are reasonably foreseeable projects appropriate for inclusion in the No Action/No Project Alternative.

Inclusion of Collateral Development in the No Action/No Project Alternative

The No Action/No Project Alternative includes the build-out of the LAX Northside and Continental City projects. Both of these projects have previously received approvals from the Los Angeles City Council. Final tract maps have been recorded for LAX Northside. The Continental City project has an approved subdivision entitlement, Development Agreement, and Final EIR. The Development Agreement is in effect until 2006. The appropriateness of including these projects in the definition of the No Action/No Project Alternative is discussed below.

LAX Northside

The No Action/No Project Alternative Appropriately Included the LAX Northside Development

LAWA received approval for the LAX Northside development in 1983. Shortly thereafter, LAWA initiated an EIR addressing improvements to LAX to accommodate projected growth. Prior to its completion, LAWA decided to engage in the LAX Master Plan to address projected growth in a broader context. LAWA appropriately chose to reconsider the LAX Northside project in this broader context. During the planning stages for the LAX Master Plan, it became apparent that the LAX Northside project should be reconsidered for a variety of reasons. Under some of the concepts under consideration, some of the land area originally included in the Northside development was needed for airfield uses and ground access facilities. LAWA also elected to modify the land uses associated with the original LAX Northside project in order to provide a location for retail, commercial, industrial, and other uses displaced under the LAX Master Plan. The planning LAWA has undertaken for the Westchester Southside project is evidence of its commitment to develop the LAX Northside property, not its abandonment of the previously-approved project. LAWA's pursuit of an administration facility within LAX Northside is also not an abandonment of the original project, as an administration facility would not be inconsistent with the previously-approved land uses.

Unlike Alternatives A, B, and C, Alternative D would not require the use of a portion of the Northside development for airfield uses or ground access facilities. Moreover, Alternative D would displace a fraction of the businesses that would be displaced under the other build alternatives (38 businesses under Alternative D compared to 239 under Alternative C and 330 under Alternative A). For these reasons, Alternative D does not include the Westchester Southside development. Rather, under Alternative D, LAX Northside would be implemented, but at a lower intensity than under the No Action/No Project Alternative. Under Alternative D, the existing vehicle trip cap for LAX Northside would be reduced to limit vehicle trips to a level comparable to that of the Westchester Southside project. As such, full development of the 4.5 million square feet of uses currently entitled for LAX Northside would not occur under Alternative D.

Disapproval of the LAX Master Plan or, more specifically, disapproval of Alternatives A, B, or C, would eliminate the need to redesign the LAX Northside project. If the Master Plan were not approved, it is reasonably expected that LAWA would pursue its original plan for the development of LAX Northside. Therefore, inclusion of the original LAX Northside project in the No Action/No Project Alternative was reasonable and appropriate.

Inclusion of LAX Northside Does Not Undermine Environmental Analysis of Build Alternatives

As stated above, the No Action/No Project Alternative does not serve as the environmental baseline for the EIR, and is not the basis of comparisons to the build alternatives for the purposes of determining significance or mitigation pursuant to CEQA, or requiring Findings or a Statement of Overriding Consideration. As a result, inclusion of the LAX Northside project in the No Action/No Project Alternative does not serve to minimize the impacts of the build alternatives, as they are appropriately compared to the environmental baseline for the determination of significance and other matters, as noted above.

Need for Additional Environmental Analysis of LAX Northside Development

The LAX Northside project was subject to environmental review pursuant to CEQA prior to its approval in 1983. For the LAX Master Plan EIS/EIR, the impacts of the LAX Northside were reevaluated using current analytical procedures and assumptions. This ensured that the impacts of the LAX Northside project were not underestimated, and provides an "apples-to-apples" comparison with the build alternatives.

Whether or not the LAX Northside project would require additional environmental approvals prior to its implementation is not material to its inclusion in the No Action/No Project Alternative. CEQA does not require that the no project alternative be limited to those projects with CEQA approval. On the contrary, the Guidelines state that "if disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed…. Where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." Similarly, as noted previously, the CEQ states that "[w]here a choice of 'no action' by the agency would result in predictable actions by others, this consequence of the 'no action' alternative should be included in the analysis." It is reasonably expected that a practical result of the Master Plan's disapproval would be the implementation of the existing LAX Northside project in accordance with its current entitlements. The issue of whether or not the project could proceed without additional environmental review is immaterial to its inclusion in the No Action/No Project Alternative and, therefore, the need for additional environmental analysis need not be determined.

Continental City

The No Action/No Project Alternative Appropriately Included the Continental City Development

LAWA purchased the Continental City property with the intention of using it for future airport development. As stated in its Airport Improvement Program grant application, it was LAWA's intent to define the future uses of the Continental City property during the Master Plan process. LAWA has fulfilled this commitment. The Draft Master Plan and Master Plan Addendum fully describe the facilities associated with the four Master Plan build alternatives under consideration, including proposed uses for the Continental City property. As stated in these documents, under Alternative A, the Continental City property would be used to expand air cargo facilities and to provide ancillary facilities. Under Alternative B, it would be used for air cargo, employee parking, and ancillary facilities. The site would be used for aircraft aprons, maintenance facilities, and ancillary facilities under Alternative C, and for an Intermodal Transportation Center and Automated People Mover Maintenance Service Facility under Alternative D.

Notwithstanding these intentions, if the Master Plan were not approved, it is reasonably expected that LAWA would pursue development of the Continental City property in accordance with its approved land uses and entitlements in order to gain a return on its investment. As indicated in Section 4.2, *Land Use*, of the Draft EIS/EIR (page 4-93), the Continental City project has an approved subdivision entitlement, Development Agreement, and Final EIR to permit construction of the Continental City project with 3 million square feet (MSF) of office space and 100 MSF of retail uses. These land uses are compatible with the airport uses at LAX. It should be noted that the Tentative Tract Map for Continental City was recorded as Final Tract Map #36729 on September 29, 1988, and the City Council approved a Development Agreement for Continental City under Contract C-65716 signed by Mayor Bradley on October 29, 1986.

Inclusion of Continental City Does Not Undermine Environmental Analysis of Build Alternatives

As stated above, the No Action/No Project Alternative does not serve as the environmental baseline for the EIR. As a result, inclusion of the Continental City development in the No Action/No Project Alternative does not minimize the impacts of the build alternatives, as they are appropriately compared to the environmental baseline for the determination of significance and mitigation pursuant to CEQA, and for the Findings and Statement of Overriding Consideration.

Need for Additional Environmental Analysis of Continental City Development

As with LAX Northside, the Continental City project was subject to environmental review pursuant to CEQA prior to its approval in 1985. For the LAX Master Plan EIS/EIR, the impacts of the Continental City project were reevaluated using current analytical procedures and assumptions. This ensured that the impacts of the Continental City project were not underestimated, and provides an "apples-to-apples" comparison with the build alternatives.

As noted above, neither NEPA nor CEQA require that the no project alternative be limited to those projects with NEPA or CEQA approval. It is reasonably expected that a practical result of the Master Plan's disapproval would be the implementation of the existing Continental City project in accordance with its current entitlements. The issue of whether or not the project could proceed without additional environmental review is immaterial to its inclusion in the No Action/No Project Alternative and, therefore, the need for additional environmental analysis need not be determined.

Whether or not LAWA has obtained the rights to use the architectural and other plans developed for the Continental City project is also immaterial. The Development Agreement provides for development of 3 million square feet of office and hotel space and 100,000 square feet of retail space in 12 lots containing 10 or more low-, mid-, and high-rise structures, ranging from 3 to 17 stories and varying in size from 30,000 SF to approximately 300,000 SF. The project does not need to conform to the architectural plans previously developed in order to be consistent with the Development Agreement and subdivision entitlements.

TR-GEN-3: Actual Versus Projected Activity Levels

Introduction

A number of comments were submitted on the Draft EIS/EIR questioning the validity of the projected activity levels for each of the Master Plan alternatives, based on the difference between the 40 million annual passenger (MAP) level projected in the 1978 EIR for LAX and the substantially higher MAP level that has actually occurred (i.e., 58 MAP in 1996 and 67 MAP in 2000). Many of the comments also called for the establishment of a "cap" at LAX to ensure that the projected activity levels assumed within the planning effort for, and environmental analysis of, the proposed Master Plan alternatives, are not exceeded in the future. This Topical Response addresses those concerns.

Discussion

Plans and Provisions Related to Projected Versus Actual Activity Levels at LAX

In 1974, the Los Angeles City Planning Commission approved the *Airport Plan* for LAX, which included an Airport Development Plan and policy framework for future improvements to, and expansion of, LAX. At the time, the *Airport Plan* provided a general concept for the future of LAX, but did not include any specific improvement projects. Adoption of the Airport Development Plan, as an element of the City General Plan, by the City Council established 40 MAP as the future growth level of activity at LAX.

In August 1978, the Los Angeles Department of Airports (now Los Angeles World Airports - LAWA) completed a Final EIR addressing several major improvement projects and actions identified as being necessary for LAX to accommodate the future growth level of 40 MAP. Based on regional aviation demand forecasts projected at the time, such growth was anticipated to occur by 1985. The 1978 EIR specifically recognized that the 40 MAP activity level for LAX was anticipated to be reached by 1985, and growth beyond 40 MAP would require an additional EIR to quantify potential impacts.

In January 1981, the Los Angeles City Council adopted the *Los Angeles International Airport Interim Plan* as the Community Plan for LAX. As described in Section 4.2, Land Use, of the Draft EIS/EIR for the LAX Master Plan, the *Interim Plan* was intended as a short-term, general guide for coordinating the development of airport facilities with that of the surrounding communities. The *Interim Plan* indicates that major policy issues regarding airport capacity, roadway access, adjacent land use compatibility, and environmental impacts will be addressed in a new plan, to be initiated following adoption of the *Interim Plan.* The *Interim Plan* airport land use designations for LAX, as presented in Figure 4.2.2 of the Draft EIS/EIR, are comparable to those of the Airport Development Plan from the 1974 *Airport Plan*, as addressed in the 1978 EIR. It should be noted that several of the airport development features of that land use plan were completed in conjunction with citywide improvements for the 1984 Olympics. Such improvements include, but are not limited to, construction of the Tom Bradley International Terminal and Terminal 1, the extension of Arbor Vitae (now called Westchester Parkway), and construction of the second level World Way Loop Street in the Central Terminal Area.

In late 1986, LAX reached a capacity level of approximately 40 MAP. At that time the Los Angeles Department of Airports initiated preparation of the LAX 2000 EIR to identify, and address the impacts of, additional improvements, new facilities and operations needed to accommodate increased incremental levels of activity at 50 MAP, 55 MAP, 60 MAP, and 65 MAP.

In March 1988, based on continued growth in air service demand, the Mayor and City Council instructed the General Plan Advisory Board to provide a technical review of the Draft LAX 2000 EIR. Based on Board's review and analysis, the Planning Director recommended that airport growth and related capacity issues could be better resolved in a revision of the LAX Interim Plan, through a Master Plan document, rather than through the Draft LAX 2000 EIR.

In March 1989, the City Council instructed the Director of Planning to initiate preparation of a Master Plan for LAX, in relation to its regional and subregional context. The history of that effort, as related to the currently proposed LAX Master Plan, is described in Chapter 3, Alternatives, and Section 4.1, Land Use, of the Draft EIS/EIR.

Based on the above, it is clear that the 40 MAP activity level anticipated in the 1974 *Airport Plan* was not a design capacity for LAX, but rather was an acknowledgement of the growth in demand anticipated to occur at LAX over the coming years. As articulated in the 1978 EIR, this level of growth - 40 MAP - was anticipated to occur by 1985 and the Department of Airports determined, within the context of the *Airport Plan*, the specific improvements necessary to enable LAX to accommodate that projected growth. As time passed and such growth was realized, the City continued to look ahead and update the long-term plans for LAX in light of new projections for future aviation demands in the region and at LAX. In 1981 it was recognized that a new long-term plan for LAX, in the form of a master plan, would be needed to properly manage the ongoing growth anticipated to occur at LAX. The LAX 2000 EIR was initiated in the mid-1980's as the growth in activity to 40 MAP occurred, to identify and analyze the improvements necessary to accommodate the growth in passenger activity at LAX to approximately 65 MAP by 2000. Unlike the scenario described above for the 1970's and 1980's where the specific improvements necessary to accommodate the projected growth to 40 MAP were identified, evaluated, and implemented, improvements necessary to accommodate the projected growth to 65 MAP at LAX by 2000 did not occur. Given that the projected growth to 65 MAP did occur, and was actually slightly exceeded at 67 MAP in 2000, the existing facilities and infrastructure at LAX are not adequate to effectively manage the existing level of activity. As described in Chapter 1, Regional Context, of the Draft EIS/EIR, passenger activity levels at LAX are projected to reach approximately 98 MAP in 2015, and the proposed LAX Master Plan is intended and designed to manage the activity levels anticipated to occur by then. The use of 2015 for the LAX Master Plan is not a regulatory mandate, but represents a reasonably foreseeable planning horizon that takes into account the available forecasts for regional aviation demands and provides a timeframe within which the City can define the necessary improvements for LAX and integrate those improvements into the long-term capital facilities planning and funding programs for the airport.

The LAX Master Plan includes several alternatives that were formulated within the regional context of aviation demand forecasts for southern California to control the future levels of activity at LAX and help direct some of the future regional demand to other major commercial airports in the region. The following describes some of the key considerations in how control of activity levels at LAX can occur.

Control of Activity Levels at LAX

Local Controls

Up until the late 1970's airport operators and local jurisdictions generally had the ability to establish capacity limits and other direct controls regarding the nature and level of activities at commercial airports. Such was the case in 1974 when the City of Los Angeles established a capacity limit of 40 MAP at LAX, and commercial airline services at LAX were planned accordingly; however, the ability of a commercial airport operator, such as the City of Los Angeles, to implement such a capacity limit was subsequently eliminated through airline deregulation and other associated federal legislation. As described in the Executive Summary of the Draft EIS/EIR, airlines, rather than the government, now decide which airports will be served. This has been true since 1978 when the Civil Aeronautics Board was disbanded with the passage of the federal Airline Deregulation Act. The practical effect of this regulatory environment is that airlines, freed to follow market forces, generally give priority to serving airports located in the highest concentrations of conveniently located potential customers.

Economies of scale also drive airlines to concentrate service at one large airport because staff and facilities can serve many flights, and connecting service can efficiently feed passengers and cargo into an airline's global flight network. Airlines add service at secondary regional airports only when they have optimized service at the primary airport and only when the secondary airport offers a sufficient market or some other competitive advantage.

In addition to the effects of airline deregulation in 1978, relative to the ability of airport operators and local jurisdictions to limit or control airline activities, the Airport Noise and Capacity Act (ANCA) of 1990 further defined and limited the ability of airport operators to limit airline activities due to noise compatibility reasons. Prior to the passage of ANCA, certain airport operators had established specific aircraft flight procedures or ground restrictions, including nighttime operation curfews, to reduce aircraft noise impacts on nearby local communities. The passage of ANCA included broad restrictions on aircraft operators (i.e., airline carriers), specifically, the phaseout of noisier aircraft, referred to as "Stage 2" aircraft by December 31, 1999, in favor of quieter Stage 3 aircraft. As such, ANCA prohibited airport operators from establishing aircraft flight procedures or ground restrictions without first obtaining public comment and the approval of the Federal Aviation Administration (FAA) through what is referred to as a "Part 161 Study." The Part 161 Study is intended to confirm that, among other things, the proposed restrictions are not discriminatory, unreasonable, nor unduly burdensome to interstate commerce, nor will they impede the FAA's execution of the national Stage 3 transition. LAWA recently initiated a Part 161 Study to seek federal approval of a locally imposed restriction on departures to and approaches from the east when over-ocean procedures are in effect. The requested restriction is very specific to a certain situation and is not, and cannot be, an overall limitation or capacity control at LAX.

Design Controls

As indicated above, airlines make strategic decisions regarding which airports to serve based on market considerations, including existing and projected commercial aviation demands in a particular region and the nature and location of commercial airports serving that region. Chapter 1, Regional Context, of the Draft EIS/EIR, describes the regional context in which LAX operates and the roles that LAX and other airports serve within the region. Chapter 1 describes the region's air transportation system, the nature of demand for air transportation, and various means for meeting the demand for transportation in the region. Based on careful review and evaluation of an extensive amount of information, including trends and characteristics of aviation activities occurring over the past 20+ years in a deregulated market environment, projections regarding the level and types of aviation activity in 2015 were developed for LAX. The passenger demand forecast for LAX was determined to be approximately 98 MAP in 2015 with an accompanying cargo activity level of 4.2 MAT.

As described in Chapter 3 of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, the ability for LAX to accommodate the projected future demand can be "constrained" by certain design and operational characteristics of the airport. The practical capacity of an entire airport is defined by the most constraining component of an airport. An airport is a complex system made up of components through which passengers and aircraft flow in a sequential order. Aircraft arriving at the airport pass through the airspace, land on the runways, travel on the taxiways and proceed to the terminal gates to unload and reload passengers. Once loaded and ready for departure, the aircraft pass through these same components in reverse order.

Passengers move through the system in a similar set of sequential steps. Departing passengers travel on local roadways and on-airport roads, arrive at the terminal from the curbfront, parking, or other shuttle facility, are processed in the terminal and proceed to the designated aircraft gate for boarding. Arriving passengers generally proceed through these steps in reverse order upon arrival at an airport. Exceptions for arriving passengers include domestic connecting passengers who board other flights, international arrivals who move through FIS facilities and baggage claim before they connect to other flights or use ground transportation facilities.

Each component of the airport system, the airfield, terminal passenger facilities and the curbfront, has an operational or passenger capacity that is a function of the physical characteristics of the component. The annual passenger level served by the overall airport system is related to the hourly capacity of its weakest component. The relationship between hourly aircraft operations, design day operations and annual operations is based on fluctuations in passenger market service patterns throughout the design day and in seasonal market fluctuations throughout the year. These market fluctuations are driven by passenger travel needs and by airport facility limitations when these limitations are present in the system.

Each of the Master Plan alternatives has facility constraints that would influence its ability to accommodate the forecast of unconstrained passenger and cargo demand to varying degrees. Even Alternatives A and B that accommodate the forecast for both passengers and cargo nonetheless require adjustments in airline schedules to do so because of airfield limitations. When an airport system component is operating at "capacity," -- meaning that it is processing a maximum level of hourly operations given its characteristics and procedures -- increasing the capacity of other components does not increase the capacity of the system. For example, if a runway is operating at its throughput operational capacity and, by definition, accepting the maximum number of hourly arriving and/or departing flights without regard for delay, increasing the number of gates will not improve the airport's ability to accept more arriving flights. The runway system would have to be expanded to increase the throughput operational rate.

It is important to note that these design constraints are not absolute limits on airport activity levels, but rather are market-related thresholds that, if exceeded, would result in delays, inefficiencies, and reduced levels of customer service. Given the highly competitive commercial aviation market and the presence of several other major commercial airports both within the region and outside the region, it is anticipated that the additional increment of activity at LAX that cannot be satisfactorily served by the proposed airport design would move to, and be met by, other airports in the region or would be lost from the region completely.

It is also important to note that the level of design constraint associated with each alternative was developed in light of the regional context and current efforts to establish a regional plan for meeting future aviation demand. The design characteristics of Alternative D are intended to provide for a future level of activity comparable to that of the No Action/No Project Alternative, which is consistent with the policy framework of the Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan (RTP) Regional Aviation Plan. The 2001 RTP calls for no expansion of LAX, and focusing efforts for accommodating future increases in regional aviation demand at other airports in the region where the greatest growth in population and jobs is anticipated to occur in the next two decades. In addition to adding Alternative D as the LAWA staff-preferred alternative for the LAX Master Plan, LAWA is currently developing master plans for Palmdale Airport and Ontario Airport, consistent with the 2001 SCAG RTP calling for expansion of other airports in the region. This overall regional policy framework provides a basis for influencing future growth at LAX, both in terms of constraining future activity at LAX to levels substantially less than the 98 MAP unconstrained demand currently projected for 2015 and in terms of redirecting growth to airport expansions/improvements elsewhere in the region. By focusing on the expansion and improvement of the regional commercial airport infrastructure at areas other than LAX, there is a greater potential for accommodating any continued increases in regional aviation demands beyond 2015 at airports other than LAX. The design of Alternative D is consistent with the policy framework of SCAG's Regional Aviation Plan, approach to accommodating future aviation demands.

Mitigating the Environmental Impacts Associated with Increases in Activity Levels

A number of comments were received on the Draft EIS/EIR calling for the mitigation of impacts occurring from existing operations at LAX, based on the position that LAX was designed and approved for only 40

MAP but is operating at a much higher activity levels, resulting in unacceptable impacts to the surrounding communities. As indicated above, however, LAX was not designed for 40 MAP, but rather a number of specific improvements were identified in the 1978 EIR in order to *enable* LAX to accommodate the growth that was anticipated to occur by 1985. The improvements and mitigation measures identified in the 1978 EIR provided the basis for addressing impacts to the environment and the nearby communities from the operation of LAX at 40 MAP. Additional growth beyond 40 MAP was projected in 1981 to occur and the preparation of a master plan to address such growth was proposed; however, several years have since elapsed and the anticipated growth has occurred without the benefit of a master plan and accompanying EIR or EIS.

There is not a requirement or means under CEQA or NEPA to mitigate environmental conditions that are not the result of a "project" or "action" as defined by those laws. The currently proposed Master Plan meets those definitions and, as a result of the EIS/EIR completed for the proposed Master Plan, numerous mitigation measures are recommended to address the impacts of the improvements and activities associated with the new Master Plan. Those mitigation measures address impacts both within the limits of the airport as well as in the affected communities around the airport. In conjunction with approval of the Master Plan, LAWA and FAA will be required to implement those measures, again, both on the airport and in the surrounding communities.

Without the Master Plan and the EIS/EIR mitigation measures, LAWA and FAA are restricted by federal law in the expenditure of airport funds within off-airport areas for addressing existing environmental impacts. One notable exception, however, is the ongoing implementation of the residential soundproofing program as part of the Aircraft Noise Mitigation Program (ANMP) for areas exposed to aircraft noise levels of 65 CNEL or greater. Aside from that, LAWA's ability to mitigate impacts to the surrounding communities is more indirect, through the control of on-airport facilities or activities in a manner that reduces impacts to surrounding areas. LAWA has implemented a number of programs to reduce the environmental impacts of existing operations, such as carpool and vanpool programs to reduce traffic and air quality impacts, conversion of ground service equipment and LAWA fleet vehicles to alternative fuels to reduce air quality impacts, and electrification of aircraft gates to reduce air pollutant emissions associated with aircraft auxiliary power units.

Summary

LAX is not designed or legally limited to serve only 40 MAP. Various plans and planning efforts have been set forth over the past 30 years to enable LAX to respond to projected increases passenger activity; however, the last time substantial improvements were actually made to the airport in order to accommodate the projected growth was in the early 1980's, in preparation for the 1984 Olympics. Continued growth in activity that has occurred at LAX over the past two decades without the benefit of any substantial, airport-wide improvements has resulted in inefficiencies and impacts to the surrounding communities. Passenger activity levels at LAX in 2000 were approximately 67 MAP. LAWA and FAA are substantially limited in the nature and location that off-airport improvements and actions can occur to reduce the impacts of existing operations, and are effectively precluded from establishing a "cap" in activity or other such restriction at LAX. LAWA is proposing the LAX Master Plan to provide extensive improvements to LAX to improve the safety, security, and efficiency of the airport relative to existing and projected activity levels. The nature and characteristics of the improvements proposed under each of the Master Plan alternatives are designed to provide certain constraints on the future activity levels at LAX.

TR-GEN-4: Impacts on Other Airports and Environs

Several comments were submitted on the Draft EIS/EIR expressing concern that implementation of the proposed Master Plan would result in, or otherwise assumes, increased activity at other airports nearby or in the region, and the environmental impacts of that increased activity on the environs of those other airports have not been addressed in the Draft EIS/EIR. There were three basic variations of this concern:

1. Increased activity at LAX will result in increased activity at other "reliever" airports nearby;
2. The proposed reduction of general aviation space at LAX from 14 acres to approximately 6 to 8 acres will result in displaced general aviation activity going to other GA airports nearby such as Santa Monica Airport or Torrance Airport; and

3. To the extent that the unconstrained forecast demand in passenger service at LAX in 2015 (i.e., approximately 98 MAP) is not met at LAX, the unmet demand will go to other commercial airports nearby such as at Burbank.

The following addresses those variations of the concern.

Increased Activity At LAX Will Result In Increased Activity At Other "Reliever" Airports Nearby

As described in Chapter 1, Regional Context, of the Draft EIS/EIR, allocation of air service among regional airports is market-driven, based on airlines' strategic decisions regarding what airports to serve. As a general rule, airlines will choose to serve the airports near the highest concentrations of conveniently located customers, and generally prefer to concentrate their air service at a single, well-located primary airport for reasons of economic efficiency. Airlines will establish additional service at secondary airports in the region only if the local market generates sufficient demand.

The projected increase in activity at LAX is based on regional aviation demand forecasts described in Chapter 1 of the Draft EIS/EIR. The increased activity at LAX would be in response to projected market demands, and is not driven by the proposed Master Plan improvements. It is not expected that increased activity at LAX would result in increased activity at other airports nearby that would not otherwise occur based on market demands.

Reduction in General Aviation Area At LAX Will Result In Increased Activity At Other General Aviation Airports Nearby

As indicated in Section 6.2.1, General Aviation, of the Draft Master Plan, LAX's two fixed based operators (FBOs) currently encompass approximately 14 acres. Considering the insignificant increase of projected GA activity (i.e., 0.22 percent between 2000 and 2010, and 0.26 percent between 2010 and 2015) and comparisons of similar facilities at other airports, it was recommended that no additional acreage be reserved in the Master Plan for general aviation purposes. The existing area is proposed to be improved to accommodate a small terminal area including auto parking, apron for transient aircraft, and hangars for maintenance aircraft. These facilities are intended to remain small, but modern and efficient to serve corporate users and aircraft using LAX to connect to commercial service. As such, the proposed reduction in acreage would be offset by increased efficiency of new consolidated general aviation facilities, and it is not expected to result in any significant reduction in, or displacement of, existing general aviation activity at LAX.

Unmet Demand At LAX Will Result In Increased Activity At Other Airports Such As Burbank

As described in Chapter 3, Alternatives, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, each of the four build alternatives currently being considered for the LAX Master Plan have some element of "constraint" incorporated into the long-term design and operation of the airport. While Alternatives A and B are anticipated to meet the forecast demand of approximately 98 MAP in 2015, Alternative C is designed for approximately 89 MAP, and Alternative D is designed for approximately 78.9 MAP, which is comparable to that of the No Action/No Project Alternative. As such, a certain amount of the forecast demand for LAX in 2015 would not be met under Alternatives C and D, and would need to be accommodated by other commercial airports in the region or would be lost from the region.

Chapter 1, Regional Context, of the Draft EIS/EIR provides an analysis of regional aviation demand and allocation of that demand to the commercial airports in the region. Topical Response TR-RC-1 provides additional information and updates to that regional context discussion, including the Southern California Association of Governments (SCAG) 2001 Regional Transportation Plan's (RTP's) estimates of future passenger activity levels at various airports in the region. In accordance with the policy framework of the 2001 RTP, which calls for no expansion of LAX, but rather shifting the focus of airport expansions and improvements to other airports in the region where substantial growth in population and jobs are expected to occur, the future activity level at LAX is estimated to be 78 MAP (i.e., comparable to No Action/No Project) and is 30 MAP at Ontario International Airport (i.e., substantial increase over the existing 6.5 MAP). Only minimal growth is anticipated for the major airports located in proximity to LAX, based on various growth constraints such as those at John Wayne Airport (i.e., terms of an existing settlement agreement), Burbank Airport (i.e., physical constraints on the airport's infrastructure and policy constraints

of the governing body that owns the airport), and Long Beach Airport (i.e., existing city policy allowing only 41 carrier flights per day). It is anticipated that the greatest amount of growth will occur at Ontario International Airport. A Master Plan and accompanying EIS/EIR is currently being prepared to provide for the improvements necessary for Ontario International Airport to accommodate future growth. Based on those projections, which account for allocation of future demand among the regional airports, considering those that are least constrained and those that are most constrained, it is not expected that implementation of any of the four proposed build alternatives for the LAX Master Plan would substantially affect future growth at Burbank Airport, John Wayne Airport, or Long Beach Airport. As such, it is not expected that the environs around those airports would be directly or indirectly affected by implementation of the LAX Master Plan, regardless of which alternative is selected.

TR-HA-1: Centinela Adobe and Randy's Donuts

Introduction

A number of comments were received on the Draft EIS/EIR regarding the significance of, and potential impacts to, the Centinela Adobe and Randy's Donuts, specifically as related to the LAX Expressway proposed under Alternatives A, B, and C. This topical response describes where and how the Draft EIS/EIR addressed these two historic resources.

Discussion

The Draft EIS/EIR and Supplement to the Draft EIS/EIR addressed Historic/Architectural and Archaeological/Cultural Resources in Section 4.9.1. Historic resources were also addressed in Section 4.8, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR as they relate to requirements under Section 4(f) of the Department of Transportation Act of 1966. Supporting data and analysis on historic resources with a full presentation of information on the Centinela Adobe and Randy's Donuts is provided in the Supplemental Section 106 Report for LAX Expressway Improvements dated January 2001. This document was available for review at the LAX Master Plan Public Reading Room throughout the 295-day public review period for the Draft EIS/EIR and throughout the 120-day public review period for the Supplement to the Draft EIS/EIR. Potential impacts on the Centinela Adobe and Randy's Donuts are associated with two of the alternatives (Alternatives A and C) proposed for the LAX Expressway. While the impacts of the LAX Expressway were summarized in the main body of the Draft EIS/EIR in Section 4.9.1 and Section 4.8, the LAX Expressway is fully described and evaluated in Appendix K of the Draft EIS/EIR.

As indicated in Appendix K on page 1, the evaluation of impacts associated with proposals for the LAX Expressway are based on preliminary design concepts. As a result, impacts from the LAX Expressway proposals on resources such as the Centinela Adobe and Randy's Donuts, are generally defined. If one of the LAX Expressway alternatives were to be approved by LAWA and the FAA, more detailed analysis with a greater understanding of potential impacts would be required under CEQA based on more specific engineering designs.

With regard to the Centinela Adobe and Randy's Donuts, it is important to note that LAWA Staff's new preferred alternative, Alternative D, does not include the LAX Expressway and would not have either a direct or indirect impact on these historic resources. Furthermore, at the time the Draft EIS/EIR was published, Alternative C was LAWA Staff's preferred alternative. While two options for the LAX Expressway were considered in the Draft EIS/EIR for Alternative C, the "Single Viaduct" option for the roadway was LAWA's preferred option. This option locates the LAX Expressway on the east side of I-405, which avoids any potential for impacts to the Centinela Adobe and Randy's Donuts. A more specific summary of the Draft EIS/EIR's findings related to the Centinela Adobe and Randy's Donuts is provided below.

As described in the Draft EIS/EIR on page 4-592, the Centinela Ranch House (Ygnacio Machado Adobe), now commonly referred to as the Centinela Adobe, is believed to have been built in 1844, and was placed on the National Register of Historic Places in 1974 (NR No. 19740502). The discussion on page 4-592 also indicates that Randy's Donuts was designed in 1953, and, as an excellent example of Programmatic/Mimetic Architecture, is eligible for listing in the National Register of Historic Places at the local level of significance. As described in the Draft EIS/EIR on pages 4-596 and 4-598, construction of

improvements along the westside of I-405 under the Split Viaduct alternative for the LAX Expressway would have direct and indirect impacts on the Centinela Adobe and Randy's Donuts due to encroachment of the roadway onto these properties. And as further described in Appendix K of the Draft EIS/EIR on page 106, the roadway would also compromise the visual integrity of areas associated with these properties and heavy equipment and machinery could result in further indirect impacts due to vibration and, ultimately, possible structural damage. However, as stated in the Draft EIS/EIR on page 4-604, "…LAWA's Preferred Alternative, Alternative C, with selection of the Single Viaduct LAX Expressway proposal, will have no effect on the historic properties identified within the APE, with the implementation of the Mitigation Measures given." The historic properties within the APE include the Centinela Adobe and Randy's Donuts.

LAWA is mandated by CEQA to evaluate alternatives to a project that can avoid or reduce its impacts on the environment. In identifying and analyzing alternatives, LAWA has to consider a range of alternatives which ultimately leads to certain trade-offs regarding what impacts might be avoided or reduced among 27 competing environmental issues. Although LAWA Staff's currently preferred Alternative D, and previously preferred Alternative C with the Single Viaduct option, do not include proposals for the Split Viaduct Alternative, in the event that the Split Viaduct option for the LAX Expressway was selected as a component of an approved Alternative A or C, more detailed planning and project specific environmental review of the roadway would be required as would consideration of all feasible alternatives and means of avoiding or mitigating impacts on the Centinela Adobe and Randy's Donuts.

TR-HRA-1: Human Health Risk Assessment Baseline

Introduction

Many comments were received regarding baseline issues as related to air toxic emissions. Those commenting thought that the EIS/EIR did not have a proper baseline for air toxics emissions associated with LAX operations and as a result the effects of air toxics pollutants on human health were not adequately addressed. This topical response addresses concerns regarding baseline conditions and the estimation of incremental health risk associated with LAX Master Plan build alternatives. Specifically, this response discusses:

- Use of 1996 rather than a more recent year as the baseline against which impacts of alternatives are evaluated.
- Baseline conditions used for evaluation of cumulative impacts for potential cancer risks and non-cancer hazards.
- Sources of information used in estimation of baseline emissions.

Discussion

Use of 1996 as the Baseline Year

In response to comments by the public and public agencies, human health risks and hazards associated with potential exposure to toxic air pollutants (TAP) were evaluated using recent data representative of LAX operations in the Supplement to the Draft EIR/EIS. Risks were evaluated under Year 2000 conditions as a basis for comparison to risks presented in the Draft EIS/EIR measured against the 1996 baseline. Due to the decrease in air travel following terrorist actions in September 2001, the data for 2001 was not representative of typical or expected conditions; therefore, data from Year 2000 was used.

This approach allowed direct comparison of the relative impacts of the build alternatives and the No Action/No Project Alternative to 1996 baseline conditions and Year 2000 conditions. Airport activity in the Year 2000 included about 9 million additional annual passengers above activity observed in 1996. The difference in TAP emissions between Year 2000 conditions and the alternatives was therefore less than the difference between 1996 baseline and the alternatives. As a consequence, incremental cancer risk and non-cancer hazard estimates are less when Year 2000 conditions are used as the reference for almost all receptors and locations within the study area. Thus, while evaluation of incremental impacts using Year 2000 conditions as a basis did not identify any new significant impacts, several significant impacts identified when measured against 1996 baseline would be reduced to less than significant and

some less than significant impacts would change to beneficial impacts, if Year 2000 conditions were to be used to determine significance.

For a discussion of significant, non-significant and beneficial impacts for Alternatives A, B, C and D measured against the 1996 baseline and for estimates of incremental impacts using Year 2000 conditions please refer to Section 4.24.1.6, *Environmental Consequences*, presented in the Human Health Risk Assessment of the Supplement to the Draft EIS/EIR. Please refer to Section 4.24.1.9, *Level of Significance after Mitigation*, presented in the Human Health Risk Assessment of the Supplement to the Draft EIS/EIR for a discussion of the level of significance for the four build alternatives after mitigation. For further discussion of baseline conditions associated with LAX operations please refer to Section 4.6, *Air Quality* of the Supplement to the Draft EIS/EIR, Section 3.3*, Emissions Estimates for TAP*, of Technical Report 14a. Human Health Technical Report and the Air Quality Modeling Protocol for Toxic Air Pollutants, LAX Master Plan EIS/EIR (Attachment F).

Baseline Conditions Used for Cumulative Impacts Analysis

Baseline conditions for evaluation of cumulative impacts used existing ambient air quality data collected at SCAQMD toxic air pollutant monitoring stations near LAX. Toxic air pollutant data collected during the MATES-II study from monitoring stations closest to LAX was used to estimate background concentrations of TAP, and to estimate cumulative effects of airport releases on local air quality. As part of the MATES II study, microscale monitoring was conducted at the Hawthorne station located approximately 2.4 miles southeast of the LAX Theme Building (SCAQMD Monitoring Station No. 094, Southwest Coastal Los Angeles County). MATES-II data from this station were used as the primary source for describing existing toxic air pollutant air quality around LAX.

The MATES-II study only examined possible cumulative cancer risks in the Los Angeles basin. Thus, data from US EPA's National Air Toxics Assessment from 2002 was used in the Supplement to the Draft EIS/EIR to evaluate cumulative non-cancer health effects. This assessment estimated impacts on air quality using various sources for emissions estimates and air dispersion modeling. Impacts were taken as a general indication of baseline air quality against which incremental non-cancer hazards, due mainly to acrolein in jet engine exhaust, could be evaluated.

Sources of Information

Data gathered for estimation of baseline conditions did not include any direct measurement of LAX contribution to total TAP in the air. A Source Apportionment Study was and is still contemplated for the area near LAX at the time the Supplement was published. This study was significantly delayed by the events of 9/11/01, and still has not begun. No date is available at this time as to when the study will start or when data will be available. As currently designed, the study will seek to assess the current contribution of airport-related emissions to total emissions from all sources in the area, and has no health risk assessment component.

Data for environmental baseline conditions used in the HHRA were obtained from an air toxic emission inventory developed for airport sources through tenant and traffic surveys as well as data from reference sources including FAA operations summaries. Important TAP sources associated with LAX operations evaluated include: aircraft, APU/GSE, on-airport motor vehicles, and stationary sources such as on-site power plants and heating facilities and fuel storage tanks. TAP of concern for implementation of the LAX Master Plan were selected based on a comprehensive review of TAP potentially emitted from these various airport sources. Baseline concentrations for TAP of concern were then modeled based on emissions estimates and local meteorology. This approach provides the best available estimates of possible baseline impacts to air quality in neighborhoods surrounding LAX, and thus provides the best available basis for examining possible future impacts of the No Action/No Project Alternative and the four build alternatives in the LAX Master Plan. Details of the process of source identification, selection of TAP of concern, and estimation of baseline air quality impacts are defined the Attached B, Screening Human Health Risk Assessment to Technical Report 14a, Human Health Risk Assessment prepared in support of the Draft EIS/EIR. Additional and summary information on these issues is provided in Section 4.24.1, Human Health Risk Assessment (CEQA).

TR-HRA-2: Airport Emissions and Link with Adverse Health Effects

Introduction

Many comments were submitted expressing concern that studies have shown a link between airport chemical emissions and human health impacts. Those commenting felt that the Draft EIS/EIR did not consider this information. This response to such comments is divided into two parts. First, the approach to evaluation of possible human health impacts is briefly summarized to explain how human health risks and hazards were evaluated. Second, a description and evaluation of possible health impacts from past studies at other airports is provided.

Discussion

The Draft EIS/EIR performed the following evaluations for chemical emissions potentially resulting from implementation of the Master Plan. These evaluations are recognized by federal and state agencies as appropriate for assessment of potential human health impacts from releases of toxic air pollutants (TAP).

1. Emissions were estimated for five criteria pollutants, consisting of sulfur dioxide (SO_2), carbon monoxide (CO), fine particulate matter (PM_{10}), nitrogen dioxide (NO2), and ozone (O_3). Estimated criteria pollutant emissions were evaluated for significance by comparing maximum predicted concentrations for each build alternative to ambient air quality standards (AAQS). The criteria pollutant evaluation is presented in Section 4.6, *Air Quality*, of the Draft EIS/EIR and in Section 4.6, *Air Quality*, of the Supplement to the Draft EIS/EIR. AAQS define clean air and are established by the Federal Government under the Clean Air Act (CAA) to protect the public's health, including the health of sensitive populations such as asthmatics, children, and the elderly. State agencies have either adopted the National AAQS or have set more stringent standards. AAQS define the maximum amount of a pollutant that can be present in outdoor air without harm to even the most sensitive individuals. Federal and state AAQS are reviewed to ensure that they remain protective of public health. For example, the Children's Environmental Health Protection Act (Senate Bill 25), passed by the California legislature in 1999, requires the California Air Resources Board (CARB) to review all existing AAQS to determine whether they adequately protect the health of the public, including infants and children.

   Criteria pollutant concentrations that exceed AAQS may indicate a potential health hazard. Such impacts are governed under the CAA. California has a State Implementation Plan (SIP) that provides an attainment strategy to reduce criteria pollutant concentrations to acceptable levels. Federal actions are required to conform to the applicable SIP under Section 176 of the CAA. Master Plan impacts associated with criteria pollutants are addressed through mitigation strategies that are intended to meet attainment within the air quality management district, as defined in the SIP. The preferred alternative will be evaluated to determine whether it complies with the SIP.

   Health impacts potentially resulting from airport emissions of criteria pollutants associated with the Master Plan are sufficiently addressed given that AAQS are health-protective of sensitive populations, the preferred alternative must conform to the SIP, and that mitigation measures will be identified to address impacts associated with criteria pollutants.

2. A human health risk assessment was performed to evaluate potential health risks and hazards associated with estimated emissions of TAP for each Master Plan alternative. TAP are air pollutants that may pose a potential hazard to human health; however, AAQS and emission control standards have not been established for most of these chemicals. TAP are evaluated through the risk assessment process and regulated through California's air toxics program. Potential health risks to populations in the vicinity of LAX are documented in Section 4.24.1, *Human Health Risk Assessment*, and Technical Report 14a, *Human Health Risk Assessment*, of the Draft EIS/EIR. Section 4.24.1 of the Supplement to the Draft EIS/EIR provides an evaluation of human health risks and adverse effects for Alternative D. Supplemental analyses address

several issues including: baseline year, possible acute impacts from acrolein emissions, cumulative impacts of airport emissions on human health for effects other than cancer, and impacts of revised mitigation measures on conclusions reached in the Draft EIS/EIR.

The above assessments are adequate for evaluation of possible impacts of implementation of any of the LAX Master Plan Alternatives. These evaluations are different from studies of health effects in populations. These differences and the results of past studies of health impacts near large airports are described below.

The term "health risk assessment" is sometimes misinterpreted. A health risk assessment does not indicate whether a specific, observed health problem or symptom was caused by chemical exposure. Epidemiological studies are used to evaluate whether past chemical exposures may be responsible for actual health problems observed in real populations. Health risk assessments are used to estimate potential health impacts resulting from current or future chemical exposures in a population. In order to avoid underestimating chemical exposure, the health risk assessment prepared for the Draft EIS/EIR estimated risks for the maximally exposed individual (MEI), a hypothetical individual that lives, works, or goes to school at a location with the highest predicted concentrations of TAP in air, and who has other characteristics, such as inhalation rate and years of exposure, that result in maximum intake of TAP. In addition, toxicity criteria used in all health risk assessments are developed to be protective of groups that may be exceptionally sensitive to a chemical, such as children and the elderly. The result is a conservative estimate of potential health impacts associated with Master Plan build alternatives. Health risk assessment is the appropriate tool to evaluate whether estimated future emissions associated with Master Plan alternatives may potentially result in human health impacts.

Health risk assessment cannot be used to link individual illnesses to past chemical exposures, nor can health risk assessments and epidemiological studies prove that a specific toxic substance caused an individual's illness (California EPA, 2001). It would be difficult to substantiate potential health risks estimated by risk assessment for an airport through epidemiological studies because of the typical lack of exposure information about the study population. It is necessary to understand all of the factors that may lead to an adverse effect. The population evaluated in the epidemiological study may have lived in the area for many years or just a few years. They may have had exposure to chemicals from other sources, such as work or emissions from other sources (i.e., automobile exhaust). They may have engaged in behavior such as smoking, drinking, overeating, or other lifestyle habits that increased their risk of adverse health effect. An observation of adverse effect would not necessarily correlate with exposure to airport emissions.

Although subject to a number of uncertainties common to epidemiological studies, these types of studies have been performed at other airports in large metropolitan areas to determine whether individuals living near airports have a greater incidence of disease than populations living in other areas. For example, the Illinois Department of Public Health (IDPH, 2001) examined actual cancer incidence observed in communities near Chicago's O'Hare and Midway airports between 1987 and 1997. Results of the study showed no elevation in cancer incidence for all cancers combined among whites, non-whites, males and females living near the airports. Trend analysis did not indicate a higher cancer burden for populations near the airports as compared to populations living farther away. This observation held true for all cancers combined as well as site-specific cancers. A study conducted by the Washington State Department of Health (1999) provided an examination of actual cancer cases near Washington State's SeaTac airport. Results of the study indicated that incidence of cancer was not statistically significantly higher for the SeaTac area.

One of the limitations to airport epidemiological studies is that they treat living adjacent to an airport as an approximation for increased likelihood of exposure to carcinogens. This approximation would be invalid if people living near airports have a shorter duration of residence than people living further away. This lack of knowledge about the length of residence as well as the inability to assess actual exposure of individuals renders the use of distance a crude and unreliable measure of exposure. Other factors likely to impact the studies include population migration patterns, occupational exposures, and personal and lifestyle habits (IDPH, 2001).

Health risk assessment is the best method to evaluate potential health impacts for Master Plan alternatives. Epidemiological studies cannot predict future impacts associated with estimated future emissions and inherent uncertainties, as discussed above, exist for the performance and use of

epidemiological studies to determine potential health impacts of living near an airport. Health risk assessments performed in the Draft EIS/EIR and Supplement to the Draft EIS/EIR used up to date risk assessment methodologies and modeling as well as conservative measures of exposure and toxicity to provide conservative estimates of potential risk and impact associated with Master Plan alternatives.

California EPA. 2001. A Guide to Health Risk Assessment. Office of Environmental Health Hazard Assessment.

Illinois Department of Public Health. 2001. Cancer Incidence in Populations Living Near Chicago O'Hare and Midway Airports, Illinois. 1987 - 1997. Office of Epidemiology and Health Systems Development. November.

Washington State Department of Health. 1999. Cancer Rates in the Proximity of SeaTac International Airport (Questions 1 and 2 of the August 1998 Work Plan). Office of Epidemiology. February.

TR-HRA-3: Human Health Impacts

Introduction

Many comments received indicated concern about the potential for emissions during LAX operations to cause a variety of health problems in people living near the airport. In response to public comment, additional analyses are presented in Section 4.24.1, Human Health Risk Assessment of the Supplement to the Draft EIS/EIR and are summarized in the Executive Summary of the Supplement to the Draft EIS/EIR. The Supplement was prepared to integrate a new alternative, Alternative D, into the existing environmental review process and to incorporate supplemental information and analysis for the LAX Master Plan. Such information and analysis are based upon the availability of new or updated information since publication of the Draft EIS/EIR in January 2001.

This Topical Response addresses the following categories of concerns expressed:

- General concerns about current health issues
- Concerns that an increase in pollution could affect the respiratory system and cause cancer
- General concerns that implementation of any of the LAX Master build Alternatives will cause increased asthma, allergies, or other respiratory illnesses and/or other health problems
- The potential for jet fuel exposure to impact human health

The response includes a general description of air quality and possible associated health risks, followed by more specific discussion of potential impacts in neighborhoods near LAX as were addressed in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.

Discussions of acute and chronic hazards for all build alternatives and the No Action/No Project Alternative are described in Section 4.24.1.6, Environmental Consequences, and Section 4.24.1.9, Level of Significance After Mitigation, in the Human Health Risk Assessment of the LAX Master Plan Supplement to the Draft EIS/EIR. Additional detail concerning acute hazards is provided in Technical Report S-9a, Section 4.1.2 Assessment of Acute Hazards, of the LAX Master Plan Supplement to the Draft EIS/EIR. As described in these sections, health risks (cancer, non-cancer chronic and non-cancer acute) for the majority of nearby residents would be lower for Alternative D than for 1996 baseline, Year 2000 conditions and the No Action /No Project Alternative. Alternative D provides for airfield improvements that would enable aircraft to move more efficiently, thereby reducing air pollutant emissions from aircraft operating in taxi/idle mode. This alternative also provides substantial improvements to the on-airport and off-airport surface transportation systems, thereby reducing air pollutant emissions from motor vehicles. Additionally, Alternative D, unlike the No Action/No Project Alternative, includes Master Plan commitments and mitigation measures to reduce air pollutant emissions.

Discussion

Air Quality Regulation

Depending upon the type and concentration of chemicals, air pollution may pose a threat to the health of people who breath chemical-containing air. The California Air Resources Board (ARB) was formed in 1967 to protect the public's health, the economy, and the state's ecological resources through the cost-effective reduction of air pollution. As a result, air pollution in California has been substantially reduced. For example, in the Los Angeles area, the highest levels of pollution have dropped by 25 percent since 1980. Further, annual exposure to smog has decreased by 50 percent. These reductions have been accomplished through such measures as car and truck emission standards that reduce the release of toxic air pollutants (TAP) into the air. Today's new cars pollute about 90 percent less than cars in the early 1970s. However, motor vehicles and their fuels remain the largest and most important source of toxic air emissions in the state, and air quality in the Los Angeles basin remains a concern. The three TAP that contribute the most to the overall statewide cancer risk (87 to 91 percent of risk for cities evaluated) are particulate matter from diesel-fueled engines, 1,3-butadiene, and benzene. These TAP come primarily from motor vehicles. Diesel particulates contribute over 70 percent of the known cancer risk from air toxics today (ARB, 2001). The Multiple Air Toxics Exposure Study (MATES-II) evaluated air pollution in the South Coast Air Basin (much of the greater Los Angeles area); sites with some of the highest measured risk levels in the MATES-II study, Huntington Park, Pico Rivera, Los Angeles, and Burbank, are indicative of the urban core area surrounding downtown Los Angeles (SCAQMD, 1999). Other sites where risks are high, Riverside and Pomona, show that proximity to the LAX does not determine air quality in the basin.

The ARB has several programs in place to reduce emissions from motor vehicles and fuels. These include the diesel risk reduction plan, which targets a 75% reduction in diesel particulate matter by 2010 through the use of cleaner diesel fuel and cleaner diesel engines and vehicles. In addition, cleaner burning gasoline will get even cleaner, which will reduce emissions of benzene and 1,3 butadiene (ARB, 2001).

The ARB has proposed an airborne toxic control measure (ATCM) that would limit school bus idling as well as idling at or near schools to only when necessary for safety or operational concerns. This approach is intended to reduce diesel particulate matter and other TAP from heavy-duty motor vehicle exhaust. The proposed ATCM is a high priority because children riding in and playing near school buses and other heavy-duty vehicles are disproportionately exposed to pollutants from these sources (ARB 2002a). In addition, the Carl Moyer and School Bus Programs will provide funds to replace some of the dirtiest diesel engines, including those in school buses (ARB, 2002b).

Despite continuing improvement, California, including the South Coast Air basin, continues to face an air quality challenge. The state's climate, terrain, and population all contribute to the problem. As a result, the ARB adopted the State Implementation Plan (SIP) in 1994, a detailed plan to clean up air pollution by region over a 15-year time span. Areas such as Los Angeles must reduce smog-forming air pollution by 70 percent (ARB, 2001).

The South Coast Air Quality Management District (SCAQMD) was created by the 1977 Lewis Air Quality Management Act. The SCAQMD assists the ARB in improving air quality in Southern California on a regional basis. The SCAQMD is responsible for a district that covers four counties, consisting of parts of Los Angeles, Orange, Riverside, and San Bernardino counties. This area of 10,743 square miles is home to more than 15 million people - about half the population of the state of California. It is the second most populous urban area in the United States (http://www.aqmd.gov/news1/Background.htm). The SCAQMD developed the 1997 Air Quality Management Plan (AQMP) to clean up air pollution on a regional basis by providing control measures to reduce emissions.

Air Quality and Human Health

Many comments were received regarding current health problems. Determining the cause of a current health problem or symptom is difficult. Many factors may influence if and how severely air pollution effects human health. For example, respiratory problems and cancer may be a result of workplace exposure, environmental exposure, or some other factor (e.g., personal habits such as smoking cigarettes). Further, air quality in the South Coast Air basin is degraded by many TAP from a variety of sources, of which traffic is the largest and most important.

Epidemiological studies have been performed for populations living near other airports. As described in Topical Response TR-HRA-2, these studies have found no evidence of increased cancer incidence in areas near Chicago's O'Hare field or Seattle's SeaTac airport. Thus, no evidence is available to corroborate general concerns about of cancer risk at or near major airports.

Epidemiological studies differ from risk assessments in that they describe actual incidence of cancer or other adverse health effects observed in real populations, and attempt to relate health effects to specific sources or causes. Risk assessments estimate potential health impacts using environmental data and exposure assumptions (e.g., lifetime exposure). Substantiating potential health risks estimated by risk assessment for an airport through epidemiological studies is very difficult because of the typical lack of exposure information about the study population. Further, understanding all of the factors that may lead to an adverse effect is necessary to related health effects to specific causes. The population evaluated in the epidemiological study may have lived in the area for many years or just a few years. They may have had exposure to chemicals from other sources, such as at work. They may have engaged in behavior such as smoking, drinking, overeating, or other lifestyle habits that increased their risk of adverse health effect. Simple observations of adverse effects cannot be used to establish a link between these effects and any source, including airport emissions. Given inherent uncertainties associated with epidemiological studies and the subsequent difficulties posed in trying to tie observed effects to a cause, use of approved risk assessment methodologies is the most appropriate way to evaluate potential health impacts associated with LAX emissions.

Some reports, including ones from studies conducted in the Los Angeles area, do suggest some association between some respiratory illnesses, such as asthma and allergies, and levels of some criteria pollutants and/or TAP. Some people may be more sensitive than the majority of the population to the effects of TAP. These people are considered "sensitive" receptors, and may include children, the elderly, people in poor health and/or those suffering from illness, such as chronic bronchitis. Sensitive individuals may form a subpopulation of people living in the Los Angeles basin that do suffer some health impacts due to poor air quality. Possible associations between illness and air quality, and the existence of sensitive individuals suggest that common sources of air pollutants could cause some health impacts at the concentrations in air found in the Los Angeles basin. However, concentrations of TAP in the vicinity of LAX do not appear to be greater than those in other parts of the basin, according to SCAQMD studies. In fact, some of the higher pollution levels are found in areas such as Pomona and Riverside, at substantial distances from LAX. This observation suggests that any health impacts are due to general air pollution due mainly to car and truck traffic, not single sources, such as LAX, that would have locally greater impacts within the immediate area.

Many TAP could, in theory, cause impacts to human health, particularly in sensitive individuals. However, not all TAP in air in the Los Angeles basin have been studied using epidemiological approaches. Possible emissions for all sources were, however, examined in the assessment of possible human health impacts prepared for the Draft EIS/EIR and its Supplement. In particular, jet fuel emissions were included in the evaluation in as much as tank farm emissions and emissions during fueling and aircraft operation were accounted for in the emissions inventory conducted to support the EIR/EIS. Jet fuel is composed of many compounds, and potential health effects associated with exposure to jet fuel emissions were evaluated in terms of the toxic components of jet fuel.

As discussed in Topical Response TR-HRA-2, the best available means to assess the potential for impacts to human health is a health risk assessment as performed for the Draft LAX Master Plan EIS/EIR and its Supplement. Results of the health risk assessment presented in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR indicate that human health risk and hazards estimated for each build alternative would be less than CEQA thresholds of significance with implementation of mitigation options. In some areas near the airport and for some Alternatives, implementation of the Master Plan is likely to reduce the impact of the airport over that for current operations, and could result in slightly less exposure to TAP.

ARB. 2001. http://www.arb.ca.gov/html/brochure/arb.htm

ARB. 2002a. Staff Report: Initial Statement of Reasons for Proposed Rulemaking. Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools. October. Stationary Source Division, Project Assessment Branch.

ARB. 2002b. Reducing Toxic Air Pollutants in California's Communities.

SCAQMD. 1999. Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES-II).

TR-HRA-4: Human Health Mitigation Strategies

Introduction

Many comments received expressed concerns that the proposed mitigation program for the LAX Master Plan was inadequate or unrealistic. As a result of comments by the public and public agencies including USEPA, CARB, SCAQMD, and other implementing agencies the list of proposed mitigation measures was refined since publication of the Draft EIS/EIR. Several comments on mitigation measures are therefore no longer relevant. This topical response addresses concerns about mitigation measures relating to reduction of human health impacts from toxic air pollutants (TAP) and criteria pollutants.

Discussion

New risk analyses in the Supplement to the Draft EIR, which supercede and replace those in the draft EIS/EIR, are based on revised mitigation measures. These revised mitigation measures do not include measures that would substantially reduce aircraft emissions from those estimated for unmitigated conditions. As a result, because cancer risks and noncancer hazards are due primarily to toxic air pollutants (TAP) in aircraft engine exhaust, cancer risks and noncancer hazards following mitigation show only small changes from unmitigated conditions.

Mitigation measures included in the Draft EIS/EIR for aircraft operations, such as single/reduced engine taxiing and incentives to replace older aircraft engines with cleaner ones, would have reduced both TAP and criteria pollutant emissions from aircraft and made substantial reductions in overall risks and hazards associated with airport activity. Such measures, in theory, could be considered outside of the Master Plan as part of operations at the airport. However, these mitigation measures are no longer part of the Master Plan, and are not considered in the risk analysis in the Supplement to the Draft EIS/EIR.

Recommended mitigation measures are identified in Section 4.6, *Air Quality*, of the Supplement to the Draft EIS/EIR to reduce impacts from airport operations and construction as well as from regional vehicular traffic under Alternatives A, B, C, and D. These recommended mitigation measures would also reduce somewhat emissions of TAP from the airport. The following mitigation measures considered in the analysis are the same as identified in Section 4.6, Air Quality, of the Draft EIS/EIR and include:

- Continued conversion of GSE to alternative fuels
- Multiple construction-related measures including use of alternative fuels and add-on emission control devices on construction equipment
- Expansion of flyaway bus service between LAX and other locations in the South Coast Air Basin using alternative-fueled buses

These measures, in combination with other proposed mitigation measures, would reduce emissions of TAP during LAX operations and construction primarily by reducing exhaust emissions from mobile sources and reducing traffic congestion near the airport. Since these mobile sources are not the major contributors to possible risks and hazards associated with airport alternatives, they do not result in substantial changes in risk estimates for unmitigated and post-mitigated conditions. Details of the mitigation measures are provided in Section 4.6, Air Quality of the Supplement to the Draft EIS/EIR.

Criteria pollutants and TAP are evaluated separately in the Supplement to the Draft EIS/EIR. In many instances, measures which reduce criteria pollutant emissions also cause a reduction in TAP emissions. However, these reductions are not necessarily proportional and the separate analyses are necessary to identify overall effects of mitigation.

Evaluation of criteria pollutants is presented in Section 4.6, *Air Quality*, of the Draft EIS/EIR and in Section 4.6, *Air Quality*, of the Supplement to the Draft EIS/EIR. Estimated criteria pollutant emissions were evaluated for significance by comparing maximum predicted concentrations for each build alternative to ambient air quality standards (AAQS). AAQS define clean air standards and are established by the Federal Government under the Clean Air Act.

A human health risk assessment was performed to evaluate potential health risk and hazards associated with TAP for each Master Plan alternative. TAP are air pollutants that may pose a potential hazard to human health; however, AAQS and emission control standards have not been established for most of these chemicals. TAP are evaluated through the risk assessment process and regulated through California's air toxics program. Potential incremental health risks to populations in the vicinity of LAX associated with each Master Plan alternative after mitigation are discussed in Section 4.24.1.9, *Level of Significance After Mitigation*, in the *Human Health Risk Assessment* of the Supplement to the Draft EIS/EIR. Please refer to Section 7, *Uncertainties,* in Technical Report 9a, Supplemental Human Health Risk Assessment Technical Report, of the Supplement to the Draft EIS/EIR for a qualitative discussion of potential interactions among TAP and criteria pollutants.

TR-HWQ-1: Storm Water Pollutant Load Modeling

Introduction

This topical response addresses comments received regarding storm water pollutant load modeling performed for the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Specifically, the following are discussed:

Model Constituents

- Selection of model constituents
- Event mean concentration source data
- Storm water toxicity

Storm Water Pollutant Load Estimation Method

- Appropriateness of method
- Land use intensification
- Model parameters

Discussion

Model Constituents

Selection of Model Constituents

The Draft EIS/EIR evaluated a number of constituents to determine if implementation of any of the alternatives would increase storm water pollutant loading to receiving waters within the Hydrology and Water Quality Study Area (HWQSA). The following constituents, identified in the *Characterization Study of the Santa Monica Bay Restoration Plan - State of the Bay 1993*, prepared by the Santa Monica Bay Restoration Project, as pollutants to Santa Monica Bay, were initially evaluated for use in modeling pollutant loading within the HWQSA.

DDT	Silver
PCBs	Zinc
PAHs	Pathogenic Bacteria and viruses
Chlordane	Total suspended solids
Tri-butyl Tin (TBT)	Nutrients (total phosphorus, total Kjeldahl nitrogen)
Cadmium	Trash and debris
Chromium	Chlorine
Copper	Biochemical Oxygen Demand and Chemical Oxygen Demand
Lead	Oil and Grease
Nickel	

A discussion is included in Technical Report 6, *Hydrology and Water Quality Technical Report*, to the Draft EIS/EIR of the expected occurrence of each of these constituents in storm water from LAX. Based on their probable occurrence in storm water at LAX and the availability of Event Mean Concentration (EMC) data, nine of the constituents of concern listed above were selected for which annual average pollutant loads in storm water from LAX were calculated.

For the Supplement to the Draft EIS/EIR, an expanded list of modeled constituents was considered. The expanded list included constituents identified by commentors to the Draft EIS/EIR, as well as constituents listed on the State of California's 303(d) list for non-attainment of water quality standards in receiving water bodies to which the project discharges (Santa Monica Bay, Ballona Creek, Ballona Creek Watershed, Dominguez Channel Above Vermont). Constituents cited by commentors are:

Ammonia
Arsenic
Cadmium
Chlordane
Chlorine
Chloropyrifos
Chromium (unspecified species)
DDT
Deicing agents
Diazinon
Dioxins
Fecal Coliform Bacteria
Furans
Hexavalent Chromium
Mercury
Nickel
Other pathogenic bacteria
PAHs
PCBs
Selenium
Silver
Total Coliform Bacteria
Total Recoverable Petroleum Hydrocarbons
Viruses

Constituents on the 1998 303(d) list as well as the 2002 proposed additions to the list included the following:

Debris
Sediment toxicity
Chem A
Dieldrin
Enteric viruses
Trash
Dissolved copper
Dissolved lead
Dissolved zinc
Aldrin
Ammonia

For a pollutant loading of a particular constituent to be calculated for a quantitative impact analysis, valid EMC data must be available. EMCs are defined as a representative concentration of a constituent calculated from a flow-weighted composite storm water sample collected over an entire storm event or from the first three hours of the storm event discharge. Although EMCs were not available for all of the constituents suggested by commentors to the Draft EIS/EIR or those constituents on the 303(d) list, EMCs had been developed by the Los Angeles County Department of Public Works (LACDPW) for the some constituents or for closely related constituents. The EMCs are based on LACDPW storm water samples collected over the period 1994-2000. They include the following:

Ammonia
Total Arsenic
Total Cadmium
Chloride
Chloropyrifos
Total Chromium
Diazinon
Fecal Coliform Bacteria
Total Hexavalent Chromium
Total Mercury
Total Nickel
Fecal Streptococcus
Oraganochlorine, Pesticides, and PCBs
Total Selenium
Total Silver
Total Coliform Bacteria
Total Petroleum Hydrocarbons

For each of these constituents, LACDPW had also assessed the strength/validity of the data used to calculate the representative EMCs, based on number of samples collected, the frequency of detections and number of non-detects, and the number of data flags indicating problems with the sample data associated with each constituent. LAWA reviewed the LACDPW findings. This evaluation indicated that most of the data for the constituents listed above were inadequate for developing EMCs due to either a small number of samples, high frequency of non-detects, or data upon which the EMC was based was annotated as statistically invalid.

One exception was the LACDPW EMC for ammonia, which was based on a sufficient number of samples, had a high frequency of detections and had no samples flagged as having data problems. Ammonia was therefore added to the previous list of nine constituents for which average annual pollutant loadings were calculated. While the EMCs for fecal coliform bacteria, total coliform bacteria, and fecal streptococcus for most land uses except for vacant were based on a relatively small number of samples, pollutant loads for these constituents were also calculated in the Supplement to the Draft EIS/EIR due to the high frequency of detections and due to regulatory and public interest in bacteria levels in water bodies to which LAX storm water discharges.

Event Mean Concentration Source Data

For the Supplement to the Draft EIS/EIR, EMC data used to model total average annual storm water pollutant loading for all land uses except airport operations and open space were updated to include LACDPW EMCs (see above discussion on valid EMC data) that were generated from storm water data collected over the period from 1994-2000, versus the EMCs used in the Draft EIS/EIR that were based on data collected between 1994-1999.

In the Supplement to the Draft EIS/EIR, pollutant loading for airport land uses continued to be modeled using a combination of American Association of Airport Executives (AAAE) and LACDPW EMC data. While some comments were received on the Draft EIS/EIR suggesting the use of EMCs from storm water data collected at LAX as part of its National Pollutant Discharge Elimination System (NPDES) storm water permit, the constituents, sampling frequency, and detection limits of data collected to date are not sufficient to calculate EMCs.

Comments were also received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR suggesting use of LACDPW EMC data for airport operations and airport land uses. While the LACDPW data set includes EMCs generated for what is termed a transportation land use, storm water samples from which these EMCs are derived are collected from highways and other roadways. Highways and roadways within Los Angeles County are generally associated with intense or highly concentrated activity within the highway or roadway corridor. Applying EMCs from this land use to the much more disperse acreage of an airport would not accurately represent an EMC generated from airport land uses. Therefore, the AAAE data is considered more representative. However, in the absence of AAAE data for total copper, total lead, and total zinc, as well as ammonia, total coliform bacteria, fecal coliform bacteria, and fecal enterococcus, the local LACDPW transportation EMC data were used for modeling pollutant loading of

these constituents from airport land uses, even though they may or may not be representative of the more dispersed land use activities associated with airports.

In order to respond to comments on the Draft EIS/EIR, inquiries were made to AAAE and other sources during preparation of the Supplement to the Draft EIS/EIR, to obtain the original AAAE raw data used in preparation of the 1992 U.S. Environmental Protection Agency (USEPA) NPDES storm water permit application for airports.[51,52] The intent of these inquiries was to isolate the EMCs collected from four airports located in the 1994 study, *Predicting Pollutant Loads in Airport Storm Water Runoff - Advanced Spatial Statistics,* by Brenda Ostrom, as Rainfall Region 5, which includes portions of southwestern Colorado, southern Utah, southern Nevada, western New Mexico, Arizona, and southern California. However, the raw data could not be obtained from AAAE or from other sources to which inquiries were made.

Storm Water Toxicity

Through implementation of the structural and non-structural controls that will be identified in the detailed drainage plan for the selected alternative generated as a result of Master Plan Commitment HWQ-1, no net increase in pollutant loading will occur in storm water runoff from LAX that discharges to receiving waters. The combination of source control and treatment control BMPs that are currently implemented and those to be implemented through Master Plan Commitment HWQ-1 will address a wide range of potential pollutants, including those pollutants considered toxic to humans, commercial fisheries, and other aquatic organisms. LAWA will continue to be subject to compliance with regulations, among which include the City of Los Angeles Municipal Permit, the General Industrial Stormwater permit, and TMDLs for receiving waters to which stormwater discharges, that are developed and required by the LARWQCB to protect receiving water quality. Compliance with these regulations, as well as implementation of the CEQA-mandated mitigation monitoring and reporting program, will ensure compliance with the performance standard of no net increase in pollutant loading to receiving waters and consequently will result in no increase in toxicity levels/problems that may currently exist.

Storm Water Pollutant Load Estimation Method

Appropriateness of Method

In the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, drainage area, average annual rainfall, runoff factors based on the percent imperviousness area, and land use based EMC data were used to estimate average annual storm water pollutant loads to receiving waters to which LAX discharges. This method is considered appropriate for the LAX Master Plan based on the following:

- This method is accepted by the USEPA and is used by numerous cities throughout the U.S. to estimate annual storm water pollutant loads within their jurisdictions as required for compliance with NPDES storm water permits.
- This method is commonly used in water quality master plans where relative differences between design scenarios are evaluated.

Land Use Intensification

The selected method for estimation of storm water pollutant loading quantifies changes in loading due to changes in land use acreage rather than due to changes in the level of intensity of the same land use. Comments were received on the Draft EIS/EIR stating that the EMCs used in the pollutant load model underestimated the potential pollutant loads generated from the Master Plan alternatives in which the frequency of industrial activities in the vicinity of and within the HWQSA would increase to a greater extent than increases in impervious area, as measured by the model.

As defined previously in this topical response, EMCs are the representative concentration of a constituent calculated from a flow-weighted composite storm water sample. Depending upon the site or drainage area history and upon the length of time over which sampling occurred at a particular monitoring station, it is possible that pollutant concentrations from increased land use activity might already be incorporated in

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[51] Morris, Carter, AAAE, Personal Communication, July 19, 2002.

[52] Doerfer, John, Denver Urban Drainage and Flood Control District, Personal Communication, July 3, 2002; Roesner, Larry, Colorado State University, Personal Communication, July 9, 2002.

the EMC data collected by the AAAE and LACDPW that was used in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. If it is assumed, however, that the EMC data do not account for a potential impact from intensification of land use activities, and consequently an intensification of an existing land use/activity would result in an associated increase in pollutant load, a potential next step would be to define whether the resultant pollutant loading is directly proportional, proportional by some fractional relationship, or not significantly different from the "average" loading measured by the EMC. This type of characterization of storm water samples is typically not done.

However, for the Supplement to the Draft EIS/EIR, inquiries were made to the Los Angeles Regional Water Quality Control Board (LARWQCB), the LACDPW, AAAE, and to several water quality national experts to identify a method of quantifying the effect of land use/activity intensification on pollutant loads.[53,54,55,56] No such methods were identified. Because neither methods nor EMCs are available to correlate changes in land use intensity with resultant pollutant loads, the method used in the Draft EIS/EIR and Supplement to the Draft EIS/EIR for quantification of estimated annual storm water pollutant loading within the HWQSA related to alternatives with changes in land use, but not from changes in land use intensity, is considered appropriate for this analysis. The same conclusion would apply to the estimation of pollutant loading due to changes in off-airport activities. This approach is consistent with CEQA Section 15145 that allows termination of discussion of a potential impact due to speculation of an impact and to CEQA precedence establishing reasonable limitations on agencies obligations in preparing EIRs. See *Society for California Archeology v. County of Butte* (3d Dist. 1977) 65 Cal.App.3d 832 [135 Cal.Rptr. 679]; *Sacramento Old City Association v. City Council of Sacramento* (3d Dist. 1991) 229 Cal.App.3d 1011 [280 Cal.Rptr. 478].

Without a method to assess or quantify the potential impact of intensification of land use activity on pollutant loading in storm water leaving LAX, LAWA intends to, as was stated in Section 4.7.5, Master Plan Commitments, of the Supplement to the Draft EIS/EIR, increase the frequency of non-structural source control BMPs, such as good housekeeping procedures, equipment maintenance, and routine inspections. Furthermore, when an alternative is selected and a detailed drainage plan developed, the structural controls to be implemented will be sized and located to reduce potential pollutant loads from increased industrial activities to levels equal to or below baseline conditions.

Model Parameters

Average Annual Rainfall

The Draft EIS/EIR and the Supplement to the Draft EIS/EIR used average annual rainfall data to model stormwater pollutant loadings. Use of the long term rainfall record accounts for pollutant loading in runoff from all durations and intensities of rain events over characteristically wet, dry, and average years. Use of a specific storm event, such as the 90th percentile or less return frequency storm events, is more appropriate for drainage analyses and design of flood control structures rather than for the purpose of comparing relative impacts, as is the goal of the EIS/EIR. It should be noted that, as part of the detailed drainage plan to be developed for Master Plan Commitment HWQ-1, LAWA will utilize the 85th percentile storm or equivalent methods for sizing treatment control BMPs in all new development as required by the Standard Urban Stormwater Master Plan (SUSMP) standards that are incorporated into the Los Angeles NPDES Municipal permit.

Runoff Coefficients

The Draft EIS/EIR and the Supplement to the Draft EIS/EIR used the Federal Highways Administration (FHWA) method for calculating runoff coefficients. The LACDPW uses a different equation for calculating runoff coefficients. The FHWA generated runoff coefficients are considered to be more appropriate for the analysis performed in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR in that the FHWA methods more accurately represent airport conditions rather than the urban environment represented in the LACDPW equation.

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53 Urrunaga, Carlos, LARWQCB, Personal Communication, September 26, 2002; Amah, Ginachi, LARWQCB, Personal Communication, November 4, 2002.

54 Jordan, Stacy, LACDPW (Watershed Management Group), Personal Communication, April 24, 2003.

55 Morris, Carter, AAAE, Personal Communication, July 19, 2002.

56 Doerfer, John, Denver Urban Drainage and Flood Control District, Personal Communication, July 3, 2002: Roesner, Larry, Colorado State University, Personal Communication, July 9, 2002.

Regardless of the runoff coefficient in the equation used, as long as the same method for calculating runoff coefficients is used consistently for baseline conditions and all alternatives, relative impacts can be compared equally. To illustrate this, runoff volumes within the HWQSA under baseline conditions and 2015 Alternative A conditions were calculated using the two different equations. The findings are indicated below in Table 1. While total runoff volumes calculated using LACDPW are all approximately 15 percent greater than those produced using the FHWA runoff coefficients, the percent difference between baseline and Alternative A runoff volumes calculated from the two equations is equal. Thus, consistent use of either method will enable comparison of alternatives and comparison with baseline conditions, which is the focus of this master planning process.

Table 1

Comparison of FHWA and LACDPW Methods for Calculating Runoff Coefficients

Region within Hydrology and Water Quality Study Area	Baseline Runoff [ft^3] FHWA Method	Alternative A - 2015 [ft^3] FHWA Method	% Difference between Alt. A and Baseline	Baseline Runoff [ft^3] LACDPW Method	Alternative A - 2015 [ft^3] LACDPW Method	% Difference between Alt. A and Baseline
Santa Monica Bay Watershed						
Total Runoff	6,486,668,570	7,145,672,851	110	7,411,579,338	8,164,728,377	110
Dominguez Channel Watershed						
Total Runoff	4,616,538,115	4,337,808,268	94	5,275,077,651	4,956,528,609	94
Total HWQSA Runoff						
Total Runoff	11,103,206,685	11,483,481,118	103	12,686,656,989	13,121,256,986	103

Source: Camp Dresser & McKee Inc., 2004

TR-HWQ-2: Drainage Plan

Introduction

This topical response addresses comments received regarding Hydrology and Water Quality Master Plan Commitment HWQ-1 and the need for monitoring to ensure protection of receiving waters to which storm water from LAX discharges. Specifically, it discusses the following:

- Master Plan Commitment HWQ-1: Purpose, Development and Best Management Practices
- Performance Standards
- Compliance with Regulations
- Commitments Related to the No Action/No Project Alternative

Discussion

Master Plan Commitment HWQ-1: Purpose, Development and Best Management Practices

Comments were received on the Draft EIS/EIR requesting that flood control and water quality Best Management Practices (BMPs) for baseline, the No Action/No Project Alternative and the four build alternatives be specified in the EIS/EIR. In the absence of a selected alternative as well as on-site and regional drainage studies of existing conditions, presentation of substantial level of detail related to the drainage and water quality improvements for baseline conditions and the alternatives evaluated in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR was not feasible. Instead, the anticipated impacts associated with baseline conditions and each alternative were identified and a range of facilities/BMPs that would mitigate those impacts was developed. These BMPs were then included in Master Plan Commitment HWQ-1, whose purpose is to mitigate potential impacts to a level that is less than significant.

This approach is consistent with the State CEQA Guidelines, which state that the purpose of a program-level EIR is to provide information necessary to compare the relative impacts of a number of conceptual alternatives and, based upon this comparison, select an alternative to move forward to the detailed planning stage.

Section 15152 states that "the level of detail contained in a first tier EIR need not be greater than that of the …plan… being analyzed" and "the development of detailed, site-specific information may not be feasible but can be deferred, in many instances… as long as deferral does not prevent adequate identification of significant effects of the planning approval at hand." Section 15126.4 of the State CEQA Guidelines provides that "[mitigation] measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." In this context, Master Plan Commitment HWQ-1 is a general measure containing a level of detail that is commensurate with the current stage of planning.

Following development of a detailed site plan for the selected alternative, a detailed drainage plan will be prepared for the area within the boundaries of the selected Master Plan alternative. The purpose of the detailed drainage plan called for in Master Plan Commitment HWQ-1 is to assess site-specific drainage flows at a design level of detail in order to analyze and identify drainage improvements and storm water BMPs that will prevent flooding and downstream erosion, and prevent a net increase in pollutant loads to surface waters under the selected alternative. For facilities moved off-site which will not be included in the area covered by the detailed drainage plan as described below under Commitments Related to the No Action/No Project Alternative, LAWA will comply with current LADPW drainage criteria in the design of drainage facilities and will comply with storm water pollutant control measures mandated under SUSMP requirements for redevelopment and new development.

Within the Draft EIS/EIR, a range of measures were identified that will be considered for reducing storm water runoff volume and peak flows, among which include decreasing directly-connected impervious areas, constructing storm water detention structures, and redirecting storm water flows to increase the time of concentration. Through MM-HWQ-1, Upgrade Regional Drainage Facilities (Alternative A, B, C and D), LAWA has committed to pay a portion of the construction costs for upgraded regional flood control and drainage facilities as well as water quality enhancements to those facilities, if such improvements are found to be necessary to mitigate project-related contributions to a cumulative impact.

Also presented in the Draft EIS/EIR was a list of BMPs that will be considered for treating storm water runoff to achieve the performance standard of no net increase in pollutant loading to all receiving waters to which storm water from LAX discharges. Some of these BMPs, such as media filtration, catch basin inserts and screens, and bioretention, can be used to retrofit existing flood control structures. All BMPs will be consistent with the SUSMP program that requires the use of BMPs to minimize or eliminate storm water pollution in new and re-development areas and to reduce peak storm water discharge rates to estimated pre-development levels to eliminate downstream erosion. When selecting BMPs, consideration will be given to load reductions that may be required as a result of future Total Maximum Daily Load allocations (TMDLs) or changes to in-stream water quality standards. A calculation was included in Section 5.3 of Technical Report S-5 of the Supplement to the Draft EIS/EIR that demonstrates potential BMP effectiveness of pollutant removal within the Hydrology and Water Quality Study Area (HWQSA) assuming a specific BMP type and a specified pollutant. Master Plan Commitment HWQ-1 was amended in the Supplement to the Draft EIS/EIR to clarify that BMPs to be included in the detailed drainage plan for the selected alternative will address dry weather flows in addition to wet weather flows. Consequently, another class of BMPs, hydrodynamic devices, was added to the list of possible BMPs to be incorporated into the detailed drainage plan for the selected alternative.

It should be noted that, since publication of the Draft EIS/EIR, two hydrologic studies have been conducted by LAWA, the results of which were presented in Section 4.7 (subsection 4.7.3), of the Supplement to the Draft EIS/EIR. The studies indicated that the Argo Ditch and the Imperial sub-basins would experience no flooding due to the City of Los Angeles Department of Public Works (LADPW) 50-year design storm under existing conditions, whereas the Dominguez Channel watershed would experience flooding under existing conditions for the 50-year design storm. It was also found that the drainage capacity of the Argo Ditch subbasin would be sufficient under an Alternative A scenario; that flooding would not occur in the Imperial subbasin under Alternative D conditions for the 50-year design storm; and that flooding would occur in the Dominguez Channel watershed under Alternative D conditions using the LADPW 50-year design storm. This information pertaining to existing site drainage conditions

will augment the data to be collected as part of the detailed drainage plan. Updates and additions to the data upon which hydrology and water quality impacts were assessed were made in Section 4.7 (subsection 4.7.2), of the Supplement to the Draft EIS/EIR.

Performance Standards

Regarding concerns that were raised in comments on the Draft EIS/EIR related to the perceived absence of performance standards by which the effectiveness of mitigation measures would be assessed, LAWA has made the binding commitment in Master Plan Commitment HWQ-1 to design drainage facilities that ensure conveyance of storm water runoff that prevents flooding and downstream erosion, and that generate no net increase in pollutant loads to either receiving water body as a result of the selected Master Plan alternative. These are definitive performance standards required by CEQA. Subsequent environmental documents will address specific monitoring methods, locations, and frequencies as necessary and appropriate. This approach conforms with the State CEQA Guidelines, Section 15126.4 (a)(1)(B), which states that an EIR may include measures that specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way. This aspect of CEQA was confirmed by the Court of Appeals in *Sacramento Old City Association v. City Council of Sacramento* (3d Dist. 1991) 229 Cal.App.3d 1011, 1028-1030 [280 Cal.Rptr. 478] in which an agency was allowed to rely "on mitigation measures consisting of realistic performance standards or criteria as a basis for concluding that significant impacts will be mitigated to less than significant levels."

Compliance with Regulations

As per State of California National Pollutant Discharge Elimination System (NPDES) regulations, LAWA must adhere to requirements associated with the City of Los Angeles Municipal Permit, which requires the incorporation of permanent BMPs for any new development or redevelopment. LAWA is also required to obtain coverage under the General Storm Water Construction Permit for all development within the selected alternative to prevent downstream erosion and impacts to receiving water quality during construction. LAWA must adhere to the guidelines outlined in the Storm Water Pollution Prevention Plans (SWPPPs) for these permits as well as to the Wet Weather Erosion Control Plan (WWECP), which must be developed for all construction that occurs during the wet season defined by the City of Los Angeles as extending from October 1 through April 14. In addition, under existing and future operations, LAWA must comply with the General Industrial Storm Water Permit for discharge of runoff from any areas with airport-related activities, which include installation and operation of BMPs, and conducting monitoring consistent with the Best Available Technology/Best Conventional Technology (BAT/BCT) requirements in the General Permit. In the event that TMDLs are adopted for receiving waters to which LAX discharges, such as the bacteria TMDL established for Santa Monica Bay, LAWA must comply with the terms established for their implementation.

Compliance with these regulatory requirements, as well as conformance to the performance standards identified in Master Plan Commitment HWQ-1 will mitigate impacts associated with the selected alternative. CEQA precedence for this approach is found in the case *Sundstrom v. County of Mendocino* (1st Dist. 1988) 202 Cal.App.3d 296 [248 Cal.Rptr. 352] in which the court upheld permit conditions requiring compliance with air and water quality standards because the approving agency possessed 'meaningful information' reasonably justifying an expectation of compliance.

Commitments Related to the No Action/No Project Alternative

Several comments were received questioning why the drainage and water quality control commitments identified in Master Plan Commitment HWQ-1 were not applied to the No Action/No Project Alternative. The response to this comment must address both the drainage and water quality aspects of the conclusions regarding the potential impacts of this alternative.

Under the No Action/No Project Alternative, improvements planned on airport property related to airport activities are limited to minor taxiway improvements, new cargo building space, construction of at least one off-airport parking structure, and reconstruction of an on-airport parking structure. The No Action/No Project Alternative also assumes continued land acquisition and demolition at the Belford and Manchester Square residential areas under the existing ANMP and, in accordance with prior approved plans, the development by 2015 of two collateral developments, LAX Northside with approximately 4.5 million

square feet of entitled improvements (i.e., office, hotel, and retail uses) and Continental City with approximately 3.1 million square feet of office, hotel, and retail uses.

Drainage - The improvements associated with the No Action/No Project Alternative would be required to be designed in accordance with current LADPW drainage criteria. However, in the absence of a discretionary action by FAA or the City of Los Angeles, such as would occur under the No Action/No Project Alternative, there is no mechanism that would trigger the need to adopt or implement mitigation measures. Therefore, the airport-wide detailed drainage plan required for the build alternatives pursuant to Master Plan Commitment HWQ-1 would not occur under the No Action/No Project Alternative. As a result, flooding impacts associated with the No Action/No Project Alternative would be greater than under the four build alternatives.

Water Quality - As stated above, under the No Action/No Project Alternative, there is no mechanism that would trigger the need to adopt or implement measures such as Master Plan Commitment HWQ-1, which only applies to the four build alternatives. Nevertheless, improvements associated with the No Action/No Project Alternative would be required to comply with the storm water pollutant control measures mandated under the SUSMP requirements. In the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, it was assumed that compliance with SUSMP requirements in the implementation of the collateral developments (i.e., LAX Northside and Continental City) under the No Action/No Project Alternative would not sufficiently reduce storm water pollutant loading to baseline levels. Upon further evaluation, it has been determined that pollutant loading for some pollutants under the No Action/No Project Alternative could be reduced to baseline levels or below through treatment of the total runoff generated from the LAX Northside and Continental City developments. This conclusion is based on a comparison of baseline pollutant loads to pollutant loads associated with the collateral development under the No Action/No Project Alternative in compliance with the SUSMP regulations. For this analysis, pollutant loads under the No Action/No Project Alternative collateral developments were calculated assuming the implementation of a storm water treatment BMP that would meet the SUSMP numerical design standards. (Because other projects associated with the No Action/No Project Alternative would not necessitate major drainage facility modifications, nor would such modifications be required under the Los Angeles County Municipal NPDES Stormwater Permit, BMPs were not applied to these projects in this calculation.)

For purposes of this evaluation, total suspended solids and total lead were evaluated, as these constituents are considered to be representative of the types of pollutants that would be present in runoff from the collateral developments. The same methodology used in Section 5.3 of Technical Report S-5 of the Supplement to the Draft EIS/EIR was used for this analysis. The calculations were based on the following assumptions:

- One or more structural BMPs, such as a detention basin designed with a water quality outlet structure, would receive runoff from the entire LAX Northside and Continental City developments.
- The BMP(s) is designed to capture and treat 80 percent of total runoff volume.
- The BMP is capable of removing from 30 percent to 70 percent of the total suspended solids and from 30 percent to 70 percent of the total lead from runoff from these developments.

As indicated in the table below, between 39,785 lbs and 92,833 lbs of total suspended solids and 2 lbs to 5 lbs of total lead could be removed from runoff from the LAX Northside and Continental City developments through application of a BMP whose efficiency ranges between 30 percent and 70 percent.

For total suspended solids, when these loads are subtracted from the total pollutant load discharged to Santa Monica Bay from the entire HWQSA under the No Action/No Project Alternative as identified in Table S4.7-5 of the Supplement to the Draft EIS/EIR in which no BMPs are applied to the two developments, the resultant pollutant loads are less than baseline levels, indicating that no net impact would occur from the No Action/No Project Alternative. The same is true for total lead in the case where the BMP is 70 percent efficient. In the case where the BMP efficiency is only 30 percent, total lead loads from the No Action/No Project Alternative would remain greater than baseline. In this case, implementation of the No Action/No Project Alternative would result in an impact to water quality compared to baseline conditions.

These calculations indicate that runoff associated with collateral development under the No Action/No Project Alternative could result in impacts to receiving waters for some pollutants even after implementation of treatment, depending on the control efficiency of the treatment method used.

Table 1

Summary of Pollutant Loading Calculations Assuming a BMP is Applied to LAX Northside and Continental City under the No Action/No Project Alternative

Pollutant	Baseline Loads for HWQSA (lbs) [1]	NA/NP Alt. Loads without BMPs (lbs) [1]	Load Removed by BMP Applied to LAX Northside and Continental City (lbs)		Revised Total NA/NP Load with BMP Applied to LAX Northside and Continental City (lbs)		Is Revised NA/NP Alternative Load above Baseline Load	
			30% Efficiency	70% Efficiency	30% Efficiency	70% Efficiency	30% Efficiency	70% Efficiency
Total Suspended Solids	469,887	499,473	39,785	92,833	459,688	406,640	No	No
Total Lead	81	86	2	5	84	81	Yes	No

[1] Values from Table S4.7-5 from Supplement to the Draft EIS/EIR

Source: Camp Dresser & McKee Inc., 2004

TR-LU-1: Impacts on Quality of Life

Introduction

This topical response has been prepared to address concerns that implementation of the proposed LAX Master Plan would have an overall adverse effect on the quality of life within the communities surrounding LAX. While the impacts on the proposed LAX Master Plan build alternatives were fully addressed under the various topical sections of Chapter 4, Affected Environment, Consequences, and Mitigation Measures of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, this response presents a summary of impacts from a broader view. Where individual sections of the document often concentrate on specific and individual impacts, such as those that may apply to a given roadway, property, or facility, this response focuses on overall and combined effects and their potential to influence the quality of life in surrounding communities with emphasis on the following issues:

- Aircraft Noise
- Acquisition Effects on Communities
- Off-Airport Surface Transportation
- Air Quality
- Safety

The discussion that follows is based on information contained in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR and on other responses prepared to address public comments on these documents. Other responses particularly relevant to quality of life concerns include: TR-N-6, TR-LU-2, TR-LU-3, TR-LU-4, TR-ES-1, TR-AQ-1, TR-AQ-2, TR-HRA-2, and TR-HRA-3.

Discussion

Aircraft Noise

As further described in Section 4.1, *Noise* and Section 4.2, *Land Use* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, significant impacts due to aircraft noise are defined as those sensitive uses which would be newly exposed to high noise levels or subject to a substantial increase in noise levels. While the analyses disclose the overall change in noise exposure compared to the 1996 baseline

and Year 2000 conditions, significant impacts are identified solely as those noise sensitive uses that are newly exposed to high noise levels or are exposed to a substantial increase in noise levels compared to 1996 baseline conditions. A summary of aircraft noise exposure was provided in Section 4.1, *Noise*, on page 4-68 of the Supplement to the Draft EIS/EIR in Table 4.1-30, Total Aircraft Noise Exposure Effects Within 65 CNEL - All Alternatives in 2015 and Table 4.1-31, Significant Increase of 1.5 CNEL Within 65 CNEL of Build Alternatives Over 1996 Baseline Conditions. Significant unavoidable impacts were described in the above referenced sections under the heading "Level of Significance After Mitigation" (page 4-80).

As described in detail in Section 4.1, *Noise,* and Section 4.2, *Land Use,* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, certain areas and uses that are not exposed to high noise levels under baseline conditions or Year 2000 conditions would be newly exposed to high noise levels or to substantial increases in high noise levels with implementation of the build alternatives by 2015. Nonetheless, as further described in TR-LU-4, for most comparisons with the 1996 baseline and Year 2000 conditions, the overall area and residential area exposed to 65 CNEL noise levels under future conditions with the LAX Master Plan build alternatives decreases. Additionally, as presented in Technical Report S-1, *Supplemental Land Use Technical Report*, in the Supplement to the Draft EIS/EIR, the overall area and residential area exposed to high single event noise levels (defined by the 94 dBA SEL noise contour) would decrease compared to the 1996 baseline, Year 2000 conditions, and future conditions that would exist if the LAX Master Plan was not approved, as described under the No Action/No Project Alternative.

For Alternative D, LAWA Staff's new preferred alternative, the overall area and residential area within surrounding communities that would be exposed to high noise levels in the future would be less than under 1996 baseline conditions, Year 2000 conditions, and the No Action/No Project Alternative. As a result, even though the number of jets would increase over time, for most areas aircraft noise exposure would be reduced or remain similar to existing conditions and there would not be an adverse effect on quality of life. This reduction in noise exposure over time, even with implementation of the LAX Master Plan, is largely attributable to the mandatory phase out of noisier (stage 2) aircraft.

Acquisition Effects on Communities

Acquisition was addressed in Section 4.4.2, *Relocation of Residences or Businesses,* and in Section 4.2, *Land Use* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. As further described in these sections, Alternatives A, B and C, would involve acquisition of 84 dwelling units within the Westchester-Playa del Rey Community Plan Area, along with other office, hotel and retail and light industrial uses nearly all of which are located within areas of the City of Los Angeles. As stated in the Supplement to the Draft EIS/EIR, the new LAWA Staff preferred alternative, Alternative D, does not propose residential acquisition and involves the least overall acquisition of the build alternatives.

As further described in Section 4.4.4, *Community Disruption and Alteration of Surface Transportation Patterns*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, for all of the LAX Master Plan build alternatives the pattern of acquisition would primarily occur along the existing airport boundaries and would not divide or substantially disrupt existing land uses or planned development. As further described in TR-LU-2, for the community of Westchester, which would be most affected, the vast majority of acquisition would be comprised of industrial uses that are related to the airport and incorporation of the land into the airport boundary would not change the basic industrial nature of the uses. Although there would be acquisition within the Westchester Business District under Alternatives A, B, and C, the majority of properties that would be affected are not considered community serving uses (i.e., rental car offices, a freight forwarding office, a tire store); and for those properties that are (such as a bank, an office supply store, bar, and beauty shop) these services would still be available in close proximity within the District. LAWA Staff's new preferred alternative, Alternative D, does not propose any acquisition within the Westchester Business District. Additionally, Alterative D does not propose any residential acquisition, and as shown on Table S4.2-21 of the Supplement to the Draft EIS/EIR, the majority of the 77 acres being acquired are light industrial or office uses. The land acquired would only represent about .83 percent of the 9,281-acre Westchester - Playa del Rey Community Plan area. For all of the build alternatives no acquisition of parks, public schools, libraries or other essential public service facilities is proposed. All of the alternatives would increase the amount of park and recreational land in the area through a combination of increased acreage at Westchester Golf Course, Carl E. Neilson Youth Park, and amenities provided within LAX Northside/Westchester Southside.

In consideration of the above, and particularly when considering the limited acquisition under Alternative D, the acquisition proposed under the LAX Master Plan is not expected to divide, disrupt or otherwise degrade the overall quality of life within the communities surrounding LAX.

See Section 4.4.2, Relocation of Residences or Businesses, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR regarding how relocation would be handled for those properties that would be acquired.

Off-Airport Surface Transportation

Traffic effects were described in Section 4.3, *Surface Transportation* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR with supporting technical data and analyses provided in Technical Reports 2 and 3 of the Draft EIS/EIR and Technical Reports S-2a and S-2b of the Supplement to the Draft EIS/EIR.

Much of the area around LAX experiences high levels of traffic congestion today, and it is generally accepted that the level of congestion will get worse in the future for many area roadways with or without implementation of the LAX Master Plan. These conditions not only affect surrounding neighborhoods, but also the ability of the airport to function and serve the area and region's needs for air service. Recognition of these concerns, expressed as "Principles for Ground Access," were established early in the Master Plan process and were implemented through the design of the LAX Master Plan alternatives. The Principles for Ground Access are to:

- Maximize use of the regional transportation system
- Explore opportunities to connect to regional transit systems
- Minimize impacts to local streets
- Protect Neighborhoods
- Keep Historical Perspective (or Preserve Historic Values)

LAWA's ability to address traffic congestion is tied to federal funding restrictions that prohibit the use of airport revenues for purposes not directly related to the airport. Implementation of the LAX Master Plan would allow for transportation improvements that would not otherwise be possible and that would afford benefits that go beyond mitigating the impacts of the proposed project. With the basic objectives of separating regional airport traffic from local traffic, and seeking to improve the functioning of the roadway systems in the vicinity of LAX, implementation of the LAX Master Plan would allow for investment in the following improvements that would benefit Westchester and surrounding areas:

- A new expressway, which would reduce traffic on I-405 by 850 to 2,800 peak hour/peak direction vehicles (generally between Howard Hughes Parkway and the I-105) and reduce traffic on surrounding arterial streets (Alternatives A, B, and C)
- Improved connections to the Metro Green Line, including a rail line extension (Alternatives A, B, and C) or a pedestrian connection (Alternative D)
- Improvements to 25-27 individual intersections, substantially improving levels of service and reducing travel times
- Several neighborhood traffic mitigation programs, each designed to address the specific concerns of the affected community

A Neighborhood Traffic Management Plan is proposed as an element of the ground access plan for the LAX Master Plan. Please see Section 5.1 of Technical Report S-2b of the Supplement to the Draft EIS/EIR for further details.

Although individual intersections or roadway links would be significantly impacted under the build alternatives and construction related traffic would result in significant impacts as further described in Section 4.3.2, *Off-Airport Surface Transportation* (subsection 4.3.2.6) of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, the improvements identified above in combination with proposed mitigation measures would still benefit overall conditions for residents in the area compared to future conditions if the project were not implemented. Additionally, as shown in Section 4.3.2, *Off-Airport Surface Transportation* (subsection 4.3.2.6) and Table S4.3.2-2 of the Supplement to the Draft EIS/EIR, under all of the build alternatives the number of roadway lane miles that are at LOS F for both the a.m. and p.m. peak hours of travel would be reduced.

Air Quality

Air quality was addressed in Section 4.6, *Air Quality*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Air pollutant emissions from airport operations (specifically from aircraft, ground support equipment, and traffic traveling to or from the airport) are among several sources that impact the air quality of neighborhoods surrounding LAX. Additionally, air pollutant emissions associated with Master Plan construction activities would temporarily add to air quality impacts in the area.

In the air quality impact analysis, ambient concentrations of all criteria pollutants from airport operations prior to mitigation, when combined with background (non-airport) concentrations indicated that the National Ambient Air Quality Standards would not be exceeded in areas immediately surrounding LAX and California Ambient Air Quality Standards would be met for all criteria pollutants except for particulate matter which currently exceeds the California standards.

As described in Section 4.6.3.1 of the Supplement to the Draft EIS/EIR, the South Coast Air Quality Management District (SCAQMD) expects that the South Coast Air Basin would exceed the new national standards for 8-hour ozone and 24-hour hour and annual $PM_{2.5}$ particulate matter although the data needed to evaluate compliance with these standards is not yet available from the United States Environmental Protect Agency. See also Topical Response TR-AQ-3 for additional discussion of air pollutant increases as a result of Master Plan development. As further noted in Section 4.6.6, Air Quality, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, a number of mitigation measures are proposed that will reduce significant adverse air quality impacts associated with construction and operation of the LAX Master Plan build alternatives.

Safety

Safety, as related to aviation incidents and accidents was addressed in Section 4.24.3, *Safety (CEQA),* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. As further described in these sections, airport improvements would be designed in compliance with FAA standards and strict adherence to FAA rules and regulations pertaining to aircraft safety would ensure that aviation safety is not compromised. Under the build alternatives all new and redesigned runways and taxiways would meet FAA Airport Design Standards and would increase the operational efficiency and safety of the airfield. While additional air traffic control personnel would be required over time, increases in aircraft operations would not have an adverse impact with respect to aviation incidents or accidents.

Other Issues

In addition to the specific and extensive mitigation measures in the Draft EIS/EIR and Supplement to the Draft EIS/EIR, compatibility of uses adjacent to LAX would be supported through implementation of Master Plan Commitment LU-4, Neighborhood Compatibility Program (Alternatives A, B, C, D), as presented in Section 4.2, *Land Use* (subsection 4.2.5), of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. This commitment specifies that ongoing coordination and planning be undertaken by LAWA to ensure that the airport is as compatible as possible with all properties and neighborhoods surrounding LAX, particularly residential uses. It provides for the maintenance of landscaped buffers and setbacks along the boundaries of the airport to screen views, ensure privacy, shield lighting and avoid other land use conflicts. With emphasis on Alternative D, LAWA Staff's preferred alternative, certain amenities or improvements would be provided that are expected to have a beneficial effect on surrounding communities, these include but are not limited to improved connections to the Metro Green Line with a pedestrian connection to the Green Line Station in El Segundo, roadway improvements that would not be realized without the project, and an overall upgrade, modernization and enhancement of airport property which would improve the aesthetic and visual quality of surrounding areas.

Summary of Effects on Quality of Life

In recognition of the environmental effects that the LAX Master Plan would have on surrounding communities, LAWA has developed a comprehensive set of Master Plan Commitments and Mitigation Measures to address potential impacts to the maximum extent feasible, as set forth in Chapter 5, *Environmental Action Plan* of the Supplement to the Draft EIS/EIR. LAWA accepts that even with these commitments and mitigation measures, there would still be impacts that remain significant, as described in Chapter 6, *Other NEPA/CEQA Topics* (section 6.2), of the Supplement to the Draft EIS/EIR.

Nonetheless, taken as whole, operation of the airport with implementation of the LAX Master Plan is not expected to significantly change or degrade the quality of life in surrounding communities. Concerning aircraft noise, contrary to the perceptions of many who commented on the Draft EIS/EIR, exposure to high noise levels overtime with the LAX Master Plan build alternatives decreases for most comparisons with the 1996 baseline and Year 2000 conditions. And under Alternative D, LAWA Staff's new preferred alternative, exposure to high noise levels in the future would be less than under 1996 baseline conditions, Year 2000 conditions, and future conditions that would exist if the LAX Master Plan were not approved. Regarding traffic, the LAX Master Plan would allow for transportation improvements that would otherwise not be possible, improvements aimed at separating regional airport traffic from local traffic and improving the functioning of the roadway systems in the vicinity of LAX. These improvements would reduce impacts in the area surrounding the airport compared to future conditions without the LAX Master Plan. Although acquisition would occur under the LAX Master Plan, it would be mostly along the airport boundaries and it would not divide or significantly disrupt surrounding communities. And, for Alternative D, no residential acquisition is proposed and the mostly industrial uses that would be acquired represent only a small portion of the land uses within the effected communities. Furthermore, the project would improve safety and for air quality, while particulate matter and 8-hour ozone concentrations would most likely continue to exceed standards, ambient concentrations from airport operations for all other criteria pollutants would not exceed national and California standards in the areas surrounding LAX.

TR-LU-2: Potential Effects of Master Plan Alternatives on the Community of Westchester

Introduction

This topical response has been prepared to address a large number of comments received on the Draft EIS/EIR that center on how the LAX Master Plan alternatives would specifically affect the community of Westchester. The objective of this response is to draw from the analyses in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR in order to specifically address issues of interest to the community of Westchester. A review of comments received on the Draft EIS/EIR from residents and others interested in impacts on Westchester highlighted the following as key areas of concern:

- Effects on the Westchester Business District
- Acquisition
- Aircraft Noise
- Surface Transportation
- Air Quality
- Safety
- Westchester Southside/LAX Northside
- Effects on the Centinela Adobe
- Overall Neighborhood Effects

A description of the proposed LAX Master Plan alternatives' potential effects associated with each of these issues as they apply to the community of Westchester is presented below.

Discussion

Effects on the Westchester Business District

The Westchester - Playa del Rey Community Plan identifies the Manchester/West Sepulveda Business District and Manchester/East Sepulveda Business District as generally bounded by Manchester Avenue to the north, Sepulveda Westway to the west, Sepulveda Eastway to the east, and Lincoln Boulevard to the south. This area is generally referred to by the local community as the Westchester Business District. The area of the Westchester Business District is approximately 50 acres. The Community Plan land use designation for the Westchester Business District is Community Commercial. Community Commercial land use comprises approximately 187 gross acres (or 150 net acres) within the Community Plan area.

The Westchester Business District comprises approximately one-third of Community Commercial land use designations within the Westchester - Playa del Rey Community Plan.

The Westchester Business District includes a variety of office and retail uses, including a Ralph's Grocery Store, Longs Drugstore, Mervyns Department Store, and Office Depot. The majority of recent construction has occurred generally north of 89th Street and west of Sepulveda Boulevard in the Westchester Center. Convenient access (i.e., within walking distance) to community services, such as grocery stores, banks, restaurants, medical offices, beauty shops, dry cleaners, and a library are available to residential areas located north of Westchester Parkway, east of Sepulveda Eastway, and west of Sepulveda Westway. Not all the buildings within the Westchester Business District are fully occupied, particularly along Sepulveda Boulevard north of 88th Street.

The Supplement to the Draft EIS/EIR provided additional discussion beyond that presented in the Draft EIS/EIR of potential acquisition effects on the Westchester Business District. As described in Section 4.2, *Land Use* (subsections 4.2.6.2 through 4.2.6.4), and as presented below in Table 1, acquisition within the Westchester Business District would represent about 16 acres or 31 percent of the District under Alternative A, about 11 acres or 21 percent under Alternative B, or approximately 13 acres or 26 percent of the District under Alternative C. With focus on larger community serving uses, Alternative A would include acquisition of Longs Drugstore, Office Depot, and the Mayfair Square Shopping area. None of these larger uses would be acquired under Alternative B; Alternative C would involve acquisition of Office Depot. Ralph's Supermarket is not proposed for acquisition under any of the build alternatives. Also, as described in Section 4.2, *Land Use* (subsection 4.2.6.5) of the Supplement to the Draft EIS/EIR, in contrast to the other build alternatives, Alternative D (LAWA Staff's new preferred alternative), does not include any acquisition within the Westchester Business District.

Table 1

Acquisition Within Westchester Business District
(Acreage Comparison)

	Alternative A	Alternative B	Alternative C	Alternative D[1]
Westchester-Playa del Rey Community Commercial Land Use Designation	150	150	150	150
Westchester Business District	51.08	51.08	51.08	51.08
Acquisition Area[2] (% of WBD)	16.03 (31%)	10.95 (21%)	13.35 (26%)	N/A
Westchester Businesses (Area Acquired)	6.74	3.93	4.64	N/A
Remaining Westchester-Playa del Rey Community Commercial Land Use Designation After Acquisition (%)	133.97 (89%)	138.21 (92%)	136.44 (91%)	N/A
Remaining Westchester Business District After Acquisition (%)	35.05 (69%)	39.29 (77%)	37.52 (73%)	N/A

1 Under Alternative D, no acquisition would occur within the Westchester Business District.
2 Includes rental car, airport parking, public parking, and other miscellaneous uses.

Source: PCR Services Corporation, 2002.

The Westchester Southside proposal under Alternatives A, B, and C, and LAX Northside under Alternative D, include a community commercial "village" which would provide a pedestrian oriented environment for the residents of Westchester as well as an opportunity for relocation of displaced retail, office and educational uses. As detailed in Section 4.2, *Land Use* (subsection 4.2.6.2), and as shown in Chapter 3, *Alternatives (including the Proposed Action)* of the Draft EIS/EIR on Figures 3-7, 3-11, and 3-15, Westchester Southside would provide 2.62 MSF of mixed use, business park/light industrial, and hotel/recreation use on 210 acres by 2015. At full buildout, Westchester Southside will provide a total of 110,000 sq. ft. of retail and 650,000 sq. ft. of office use on 31.70 acres of commercially-zoned property. Additionally, Westchester Southside will provide a total of 850,000 sq. ft. of hotel use. Most of the businesses within the Westchester Business District that are proposed for acquisition under Alternatives A, B, and C, are targeted for and could be relocated in proximity to the residential areas they serve within the nearby Westchester Southside project. The exception would be under Alternative A, where 18,565 square feet of retail uses, or about 5 percent of the square footage acquired within the District, could not

be accommodated within Westchester Southside. Based on current vacancies it is expected that this unaccommodated retail space would be absorbed in the nearby area or within the regional market.

As indicated in Section 4.4.2, *Relocation of Residences or Businesses* (subsection 4.4.2.6) of the Draft EIS/EIR, acquired businesses would be relocated in compliance with the Uniform Relocation Act and pursuant to Master Plan Commitment RBR-1. As a result, and based on the availability of ample retail and office space to absorb unaccommodated businesses, impacts associated with acquisition of these uses are identified as less than significant. Relative to land use, a similar conclusion was made in Section 4.2, *Land Use* (subsection 4.2.6) of the Supplement to the Draft EIS/EIR, since the acquired community commercial uses represent a small percentage of this use within the Westchester-Playa del Rey Community Plan (see Table 1), and the majority of the acquired uses could be relocated within Westchester Southside or within the Community Plan area. It is also stated that the majority of the uses that would be acquired in the Westchester Business District under Alternatives A, B, and C, are not considered community serving uses (i.e., rental car offices, a freight forwarding office, a tire store); and those that are (such as a bank, an office supply store, bar, and beauty shop) would still be available in close proximity within the District.

Business and residential acquisition that may occur in other areas of Westchester due to the LAX Expressway and SR-1 Improvements is described in Appendix K of the Draft EIS/EIR and Topical Response TR-APPK-2.

Acquisition Effects

Acquisition was addressed in Section 4.4.2, *Relocation of Residences or Businesses,* and in Section 4.2, *Land Use,* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. As further described in those sections, Alternatives A, B and C, would involve acquisition of 84 dwelling units within the Westchester-Playa del Rey Community Plan Area, along with other office, retail and light industrial uses. As stated in the Supplement to the Draft EIS/EIR, the new LAWA Staff preferred alternative, Alternative D, does not propose residential acquisition.

As discussed in Section 4.4.2, *Relocation of Residences or Businesses* of the Draft EIS/EIR, Master Plan Alternatives A, B, and C each involve the acquisition of 84 dwelling units, including 57 single-family and 27 multi-family units located along the northern boundary of the airport east of Sepulveda Boulevard and north of Will Rogers Street. The affected properties, which would be used primarily for right-of-way, open space and berms associated a proposed ring-road, are illustrated in Figure 3-8, Alternative A, Proposed Property Acquisition Areas; Figure 3-12, Alternative B, Proposed Property Acquisition Areas; and Figure 3-16, Alternative C, Proposed Property Acquisition Areas, within Chapter 3, *Alternatives*, of the Draft EIS/EIR. The 84 dwelling units are estimated to house approximately 172 residents, based on an average of 2.54 persons per single-family unit per 1990 U.S. Census of Population and Housing (Census) data for census tract (CT) 2780 (in which the affected units are located), and assuming 1 person per multi-family unit within the former motel to be acquired.

As discussed within Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, acquisition of property and relocation of residents and businesses by federally funded airports such as LAX is governed by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (codified as amended at 42 USC 4601-4655), its implementing regulations (49 CFR Part 24), FAA Order 5100.37A, and Acquisition and Relocation Assistance for Airport Projects (April 4, 1994, P.L. 91-646), collectively referred to as the Uniform Act. The purpose of the Uniform Act is to ensure fair and equitable treatment for individuals who are displaced or whose real property is acquired as a result of a federally funded project. Procedural requirements regarding notification to affected owners, appraisals, compensation at fair market value, relocation payments, and advisory assistance are specified in the Uniform Act. Relative to residential relocation, the Uniform Act requires that assistance be provided to find comparable, decent, safe, and sanitary housing units within a reasonable time prior to relocation, and that the unique needs of minority and low-income persons be addressed.

In compliance with the Uniform Act, state and local regulations, and FAA Advisory Circular 150/5100-17, LAWA has proposed Master Plan Commitment RBR-1. This commitment was revised since publication of the Draft EIS/EIR to clarify the timing of the commitment, to conform to statutory language, and to address a recent LAWA program related to relocation issues (the Move On Housing Program). The text of this commitment was provided in its entirety in Section 4.4.2, *Relocation of Residences or Businesses*,

of the Supplement to the Draft EIS/EIR. The proposed relocation program builds upon the existing program currently in place as part of the Voluntary Residential Acquisition/Relocation Program for the Belford and Manchester Square areas. Although it is expected that comparable replacement housing resources would be available for all displaced residents, Master Plan Commitment RBR-1 includes provisions to further ensure the availability of sufficient resources, such as programs to move and rehabilitate acquired structures (e.g., through LAWA's Move On Housing Program), and funding possibilities for replacement housing.

Acquisition within Westchester would vary by alternative with most of the acreage to be acquired designated for and occupied by Light Industrial uses. Although the industrial acreage would be removed from the Community Plan area, it would stay within the City of Los Angeles and the use of the land would remain industrial. As indicated above in the discussion of the Westchester Business District, and as described in Section 4.4.2, *Relocation of Residences or Businesses* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, relocation opportunities for compatible retail, office, hotel and light industrial uses would be provided on airport property, including areas within the Westchester Southside (Alternatives A, B, and C), or LAX Northside (Alternative D) project areas. As with the residential uses, acquisition and relocation of businesses would be undertaken pursuant to the Uniform Act, state and local regulations, FAA Advisory Circular 150/5100-17, and LAWA Master Plan Commitment RBR-1. As presented in Tables 4.2-9, 4.2-17, and 4.2-23 of the Draft EIS/EIR and Table S4.2-21 of the Supplement to the Draft EIS/EIR, the respective acquisition associated with the LAX Master Plan alternatives within the 9,281-acre Westchester-Playa del Rey Community Plan area would be as follows:

- Alternative A, 250 acres or about 2.7 percent of the Community Plan area
- Alternative B, 310 acres or about 3.3 percent of the Community Plan area
- Alternative C, 179 acres or about 1.9 percent of the Community Plan area
- Alternative D, 77 acres or about .83 percent of the Community Plan area

The 84 dwelling units proposed for acquisition under Alternatives A, B, and C, represent less than one percent of the 22,794 dwelling units located with the Community Plan area as estimated in the 2000 U.S. Census. With most of the proposed acquisition comprised of industrial uses that are related to the airport, and with many of the commercial uses targeted for relocation within Westchester Southside or LAX Northside, the removal of these uses from the Community Plan area is not expected to significantly affect the balance of land uses within the Westchester-Playa del Rey Community Plan area. For additional discussion of residential acquisition and relocation, see Topical Response TR-RBR-1.

Aircraft Noise

As further described in Section 4.1, *Noise*, and Section 4.2, *Land Use*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, significant impacts due to aircraft noise are defined as those sensitive uses which would be newly exposed to high noise levels or subject to a substantial increase in noise levels. While the analyses disclose the overall change in noise exposure compared to the 1996 baseline and Year 2000 conditions, significant impacts are identified solely as those noise sensitive uses that are newly exposed to high noise levels or are exposed to a substantial increase in noise levels compared to 1996 baseline conditions. A summary of aircraft noise exposure was provided in Section 4.1, *Noise*, on page 4-62 of the Supplement to the Draft EIS/EIR in Table 4.1-30, Total Aircraft Noise Exposure Effects Within 65 CNEL - All Alternatives in 2015 and Table 4.1-31, Significant Increase of 1.5 CNEL Within 65 CNEL of Build Alternatives Over 1996 Baseline Conditions. Significant unavoidable impacts are described in the above referenced sections under the heading "Level of Significance After Mitigation."

As described in detail in Section 4.1, *Noise*, and Section 4.2, *Land Use*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, certain areas and uses that are not exposed to high noise levels under baseline conditions or Year 2000 conditions would be newly exposed to high noise levels or to substantial increases in high noise levels with implementation of the build alternatives by 2015. Nonetheless, for Westchester as a whole, the number of dwelling units that would be exposed to 65 CNEL or greater noise levels in 2015 would decrease under all of the build alternatives when compared to 1996 baseline or Year 2000 conditions. The greatest reduction in dwelling units exposed to 65 CNEL or greater noise levels within the Westchester community would occur under Alternative D, LAWA Staff's preferred alternative, with 4,431 fewer units exposed compared to the 1996 baseline and 2,589 fewer units exposed compared to Year 2000 conditions. Alternative A would have 4,025 fewer units exposed compared to the 1996

baseline and 2,183 fewer units exposed compared to Year 2000 conditions. Alternative B would have 2,754 fewer units exposed compared to the 1996 baseline and 912 fewer units exposed compared to Year 2000 conditions. Alternative C would have 3,186 fewer units exposed compared to the 1996 baseline and 1,344 fewer units exposed compared to Year 2000 conditions.

New analysis of single event noise levels that could result in nighttime awakenings or classroom disruption was undertaken in the Supplement to the Draft EIS/EIR, Section 4.1, *Noise*, and Section 4.2, *Land Use*. Exposure of residential uses to 94 dBA SEL or greater noise levels is considered a significant impact. For the Westchester community, compared to 1996 baseline and Year 2000 conditions, there would be a reduction in the number of dwelling units exposed to 94 SEL under all of the build alternatives in 2015. The greatest reduction in nighttime awakenings would occur under Alternative D, LAWA Staff's preferred alternative, with 5,957 fewer units exposed compared to the 1996 baseline and 1,753 fewer units exposed compared to Year 2000 conditions. This reduction in noise exposure over time within Westchester, even with implementation of the LAX Master Plan alternatives, is largely attributable to the mandatory phase out of noisier (stage 2) aircraft. Even though the number of jets would increase overtime, noise levels for the community are expected to be reduced when compared to 1996 baseline or Year 2000 conditions.

Surface Transportation

Traffic effects were described in Section 4.3, *Surface Transportation*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR with supporting technical data and analyses provided in Technical Reports 2 and 3 of the Draft EIS/EIR and Technical Reports S-2a and S-2b of the Supplement to the Draft EIS/EIR.

Much of the area around LAX experiences high levels of traffic congestion today, and it is generally accepted that the level of congestion will get worse in the future for many area roadways with or without implementation of the LAX Master Plan. These conditions not only affect surrounding neighborhoods, but also the ability of the airport to function and serve the area and region's needs for air service. Recognition of these concerns, expressed as "Principles for Ground Access," were established early in the Master Plan process and were implemented through the design of the LAX Master Plan alternatives. The Principles for Ground Access are to:

- Maximize use of the regional transportation system
- Explore opportunities to connect to regional transit systems
- Minimize impacts to local streets
- Protect Neighborhoods
- Keep Historical Perspective (or Preserve Historic Values)

LAWA's ability to address traffic congestion is tied to federal funding restrictions that prohibit the use of airport revenues for purposes not directly related to the airport. Implementation of the LAX Master Plan would allow for transportation improvements that would not otherwise be possible and that would afford benefits that go beyond mitigating the impacts of the proposed project. With the basic objectives of separating regional airport traffic from local traffic, and seeking to improve the functioning of the roadway systems in the vicinity of LAX, implementation of the LAX Master Plan would allow for investment in the following improvements that would benefit Westchester and surrounding areas:

- A new expressway, which would reduce traffic on I-405 by 850 to 2,800 peak hour/peak direction vehicles (generally between Howard Hughes Parkway and the I-105) and reduce traffic on surrounding arterial streets (Alternatives A, B, and C)
- Improved connections to the Metro Green Line, including a rail line extension (Alternatives A, B, and C) or a pedestrian connection (Alternative D)
- Improvements to 25-27 individual intersections, substantially improving levels of service and reducing travel times
- Several neighborhood traffic mitigation programs, each designed to address the specific concerns of the affected community

A Neighborhood Traffic Management Plan is proposed as an element of the ground access plan for the LAX Master Plan. Please see Section 5.1 of Technical Report S-2b of the Supplement to the Draft EIS/EIR for further details.

Although individual intersections or roadway links would be significantly impacted under the build alternatives as further described in Section 4.3, *Surface Transportation* (subsection 4.3.2.6), these improvements in combination with proposed mitigation measures would still benefit overall conditions for residents in the area and travelers to and from the airport compared to future conditions if the project were not implemented. Additionally, as shown in Section 4.3.2, *Off-Airport Surface Transportation* (subsection 4.3.2.6), Table S4.3.2-4 of the Supplement to the Draft EIS/EIR, under all of the build alternatives the number of roadway lane miles that are at LOS F for both the a.m. and p.m. peak hours of travel would be reduced.

Accepting the above described benefits associated with transportation improvements proposed under the LAX Master Plan, there would be certain areas and facilities that remain significantly impacted following implementation of mitigation measures when compared to the adjusted environmental baseline. Under Alternative D, LAWA Staff's preferred alternative, after mitigation two intersections likely to serve the community of Westchester would remain significantly impacted: Lincoln Boulevard at Jefferson Boulevard, and Century Boulevard at La Cienega Boulevard. In addition, under all of the build alternatives construction-related traffic would, at times, result in significant unavoidable impacts

Air Quality

Air quality was addressed in Section 4.6, *Air Quality*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. Air pollutant emissions from airport operations (specifically from aircraft, ground support equipment, and traffic traveling to or from the airport) are among several sources that impact the air quality of Westchester. Several other sources that contribute to air pollutant concentrations in the community include non-airport traffic in the vicinity, commercial and residential heating and cooling equipment, and various area sources such as retail gasoline stations and lawn/garden maintenance equipment.

In the air quality impact analysis, ambient concentrations of all criteria pollutants from airport operations prior to mitigation, when combined with background (non-airport) concentrations indicated that the National Ambient Air Quality Standards would not be exceeded in the Westchester area. California Ambient Air Quality Standards would also be met for all criteria pollutants except particulate matter, which currently exceeds California standards.

Construction emissions associated with the Master Plan may potentially impact air quality in Westchester. The national and California standards for nitrogen dioxide and particulate matter would be exceeded during construction for Alternatives A, B and C. However, the national standards for all pollutants, as well as the California standards for all pollutants except particulate matter, would be met during construction for Alternative D.

As described in Section 4.6.3.1 of the Supplement to the Draft EIS/EIR, the South Coast Air Quality Management District (SCAQMD) expects that the South Coast Air Basin would exceed the new NAAQS for 8-hour ozone and particulate matter although the data needed to evaluate compliance with these standards is not yet available from the United States Environmental Protection Agency. See also Topical Response TR-AQ-3 regarding air pollution increase.

Safety

Safety, as related to aviation incidents and accidents was addressed in Section 4.24.3, *Safety (CEQA)* of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. As further described in these sections, airport improvements would be designed in compliance with FAA standards and strict adherence to FAA rules and regulations pertaining to aircraft safety would ensure that aviation safety is not compromised. Under the build alternatives all new and redesigned runways and taxiways would meet FAA Airport Design Standards and increase the operational efficiency of the airfield. Additional air traffic control personnel would be required, however, as a result of these design improvements, increases in aircraft operations would not have an adverse impact with respect to aviation incidents or accidents.

Safety, in regard to increased traffic incidents, are not expected to be compounded since airport traffic would be routed off of local streets as described in Section 4.3.2, *Off-Airport Surface Transportation*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR.

Safety, related to crime incidents was analyzed in Section 4.26.2, *Law Enforcement*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. As stated on page 4-1189 of the Draft EIS/EIR, crime incidents have not increased as passenger levels at LAX have risen, based on an evaluation of crime statistics between 1996 and 1999. Nonetheless, development of the build alternatives would result in the need for additional staffing and facility needs for law enforcement personnel in order to maintain present levels of service. As stated in Section 4.26.2.8.1 of the Supplement to the Draft EIS/EIR, with the provision of additional staffing and facilities for the various alternatives for the various alternatives as specified under Master Plan Commitments LE-1, LE-2, PS-1, PS-2 and implementation of Master Plan Commitments LU-1, C-1, and ST-9 through ST-22 and mitigation measures identified in Section 4.3, *Surface Transportation*, impacts on law enforcement services under Alternatives A, B, C, and D would be less than significant.

Westchester Southside/LAX Northside

As stated in Section 4.2, *Land Use* (subsection 4.2.3), of the Draft EIS/EIR, LAX Northside is an approved development for about 340 acres of commercial, recreational, and business park uses totaling 4.5 million square feet (MSF). As stated on page 4-90 through 4-94, Ordinance 159,526, which currently applies to LAX Northside, includes [Q] conditions that limit building heights, require building and landscaped buffer setbacks along the property line, and restrict certain uses along the projects northern boundary. Additionally, the [Q] conditions limit traffic generation from LAX Northside and prohibit vehicular driveway ingress and egress from certain streets. The [Q] conditions associated with Ordinance No. 159,526 are included in Technical Report 1, *Land Use Technical Report*.

As described in Section 4.2, *Land Use* (subsection 4.2.6), of the Draft EIS/EIR, the previously approved LAX Northside project would be reconfigured under Alternatives A, B, and C, as the Westchester Southside project, providing 2.62 MSF of mixed use, business park/light industrial, and hotel/recreational use on 210 acres. This would include a pedestrian-oriented community commercial area to serve the residents of Westchester while also providing relocation sites for a number of businesses displaced by land acquisition proposed under the alternatives. Additionally, as stated in Section 4.26.3, *Parks and Recreation (CEQA)* (subsection 4.26.3.6.2), of the Draft EIS/EIR, the Westchester Southside project would expand the existing Westchester Golf Course by 6 acres and would include bike paths, greenbelts and a potential new park within the development area. As stated in Section 4.2, *Land Use* (subsection 4.2.5), of the Supplement to the Draft EIS/EIR, the compatibility of the Westchester Southside project with adjacent residential and other uses located in Westchester - Playa del Rey would be ensured through Master Plan Commitment LU-1 (Alternatives A, B, C, and D). This commitment provides for the incorporation of the [Q] conditions set forth in Ordinance 159,526 to the maximum extent feasible into the Westchester Southside Project in order to maintain the same level of environmental protection that would be provided under the current ordinance.

As described in Section 4.2, *Land Use*, of the Supplement to the Draft EIS/EIR, Alternative D would develop the LAX Northside project generally consistent with its current entitlements, but with the total amount of development subject to a vehicle trip cap that would limit daily vehicle trips to the same level established under the Westchester Southside project. The trip cap is further described in Section 4.3, *Surface Transportation* (subsection 4.3.2.6), of the Supplement to the Draft EIS/EIR. Similar to the other build alternatives, development of LAX Northside under Alternative D would include: a pedestrian-oriented community commercial area to serve Westchester; a 6-acre expansion of Westchester Golf Course; and, bike paths, greenbelts and other recreational amenities. As with the other build alternatives, the compatibility of the LAX Northside project with adjacent residential and other uses located in Westchester - Playa del Rey would be ensured through incorporation of setbacks, landscape buffers and other controls established by the [Q] conditions set forth in Ordinance 159,526. These conditions would be incorporated into the project in a manner that would achieve the same level of environmental protection afforded under Ordinance 159,526.

Compatibility of the Westchester Southside or LAX Northside project would be further supported through implementation of Master Plan Commitment LU-4, Neighborhood Compatibility Program (Alternatives A, B, C, D), as presented in Section 4.2, *Land Use* (subsection 4.2.5), of the Draft EIS/EIR and Supplement

to the Draft EIS/EIR. This commitment specifies that ongoing coordination and planning be undertaken by LAWA to ensure that the airport is as compatible as possible with all properties and neighborhoods surrounding LAX, particularly residential uses. It provides for the maintenance of landscaped buffers and setbacks along the boundaries of the airport to screen views, ensure privacy, shield lighting, and avoid other land use conflicts.

Effects on the Centinela Adobe

The Draft EIS/EIR addressed potential effects on the Centinela Adobe in Section 4.9.1, *Historic/Architectural and Archaeological/Cultural Resources*. A more specific summary of the Draft EIS/EIR's findings related to the Centinela Adobe is provided in Topical Response TR-HA-1. Historic resources were also addressed in Section 4.8, *Department of Transportation Act, Section 4(f)*, of the Draft EIS/EIR as related to requirements under Section 4(f) of the Department of Transportation Act of 1966. Supporting data and analysis on historic resources with a full presentation of information on the Centinela Adobe is provided in the Supplemental Section 106 Report for LAX Expressway Improvements dated January 2001, which was available for public review at the LAX Master Plan Public Reading Room during the 295-day review period for the Draft EIS/EIR and the 120-day review period for the Supplement to the Draft EIS/EIR. Potential impacts on the Centinela Adobe are associated with one of the alternatives proposed for the LAX Expressway. While the impacts of the LAX Expressway were summarized in the main body of the Draft EIS/EIR in Section 4.9.1 and Section 4.8, the LAX Expressway is fully described and evaluated in Appendix K.

With regard to the Centinela Adobe, it is important to note that LAWA Staff's preferred alternative, Alternative D, does not include the LAX Expressway and would not have an impact on the historic resource. Furthermore, at the time the Draft EIS/EIR was published, Alternative C was LAWA Staff's preferred alternative. While two options for the LAX Expressway were considered in the Draft EIS/EIR for Alternative C, the "Single Viaduct" option for the roadway was LAWA's preferred option. This option locates the LAX Expressway on the east side of I-405, avoiding any potential for impacts on the Centinela Adobe.

Although LAWA Staff's currently preferred Alternative D, does not include the LAX Expressway or the potential for impacts on the Centinela Adobe, in the event that Alternatives A or C were adopted and the Split Viaduct option for the LAX Expressway was selected as a component of the alternatives, more detailed planning and project specific environmental review of the roadway would be required as would consideration of all feasible alternatives and means of avoiding or mitigating impacts on the Centinela Adobe.

Overall Neighborhood Effects

As documented in the discussions above, and as presented in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, LAWA has made every effort to identify and thoroughly evaluate the potential impacts of the LAX Master Plan. LAWA has also conducted community outreach and has refined and modified its proposals in response to public comments and concerns as evidenced by Alternative D, LAWA Staff's new preferred alternative. While implementation of the LAX Master Plan would have impacts on surrounding communities, LAWA has developed a comprehensive set of Master Plan Commitments and Mitigation Measures to address potential impacts to the maximum extent feasible, as presented in Chapter 5, *Environmental Action Plan* of the Supplement to the Draft EIS/EIR. LAWA accepts that even with these commitments and mitigation measures, there would still be impacts that remain significant, as described in Chapter 6, *Other NEPA/CEQA Topics* (section 6.2), of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.

Nonetheless, taken as whole, operation of the airport with implementation of the LAX Master Plan is not expected to significantly change or degrade the quality of life in nearby neighborhoods. Concerning the key issue of aircraft noise, contrary to the perceptions of many who commented on the Draft EIS/EIR, exposure to high noise levels over time within the community of Westchester would not increase with implementation of the LAX Master Plan, but would actually decrease compared to both 1996 baseline and Year 2000 conditions. Concerns expressed about changes along the airport boundary with the community are understandable, however, years of planning and community input are evidenced in the conditions established for building height limits, building setbacks, landscaped buffer setbacks, and use restrictions under LAX Northside Ordinance No. 159,526. These conditions, which support a compatible

interface with existing Westchester neighborhoods, would be incorporated with development of this area. The Westchester Southside or the LAX Northside project would also provide benefits through provision of a pedestrian-oriented community commercial area to serve Westchester; a 6-acre expansion of Westchester Golf Course, as well as bike paths, greenbelts and other recreational amenities. Regarding traffic, the LAX Master Plan would allow for transportation improvements that would not otherwise be possible, improvements aimed at separating regional airport traffic from local traffic and improving the functioning of the roadway systems in the vicinity of LAX. These improvements would reduce impacts in the area surrounding the airport compared to future conditions without the LAX Master Plan. Although acquisition within the Westchester Business District is no longer proposed under Alternative D, LAWA Staff's preferred alternative, the analyses of Alternatives A, B, and C, provided in the Supplement to the Draft EIS/EIR, clearly demonstrates that the viability of community commercial uses necessary to serve Westchester would not be significantly affected, particularly in light of new uses proposed within Westchester Southside that would serve as relocation sites for acquired businesses.

TR-LU-3: Aircraft Noise Mitigation Program

Introduction

A number of comments were received on the Draft EIS/EIR, as well as during Environmental Justice Workshops, regarding the nature and characteristics of the Aircraft Noise Mitigation Program (ANMP). This topical response describes where in the Draft EIS/EIR the ANMP for LAX is described, and how the program operates.

Discussion

The Draft EIS/EIR Section 4.2, *Land Use* (subsection 4.2.3, pages 4-93 through 4-96) described key aspects of the ANMP including administrative responsibility, applicable land use compatibility requirements, LAWA's variance to California Airport Noise Standards, participating jurisdictions, the noise impact area, implementation approaches, eligibility requirements, program background, and the implementation progress. The ANMP is also described in a more comprehensive fashion in Draft EIS/EIR Technical Report 1, *Land Use Technical Report*. The following description of the ANMP program summarizes and builds on this information in an effort to address multiple related comments on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. In addition to the content or analyses of the ANMP presented in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, other relevant information regarding the existing sound insulation program is provided due to the numerous related comments received during the public circulation periods.

Subtopical Response TR-LU-3.1: Regulatory Basis for the ANMP

California Airport Noise Standards (California Code of Regulations, Title 21, Subchapter 6) require that airport proprietors mitigate noise impacts by providing sound insulation for incompatible land uses (residential uses, schools, hospitals, and churches) exposed to 65 CNEL or greater noise levels or by eliminating incompatible land uses through acquisition of property and conversion to compatible land uses. Within the ANMP program boundaries, over 90 percent of the noise mitigation proposed focuses on sound insulation. (See page 4-93 through 4-95 of the Draft EIS/EIR.)

Subtopical Response TR-LU-3.2: Responsibility for the ANMP

LAWA, as the airport proprietor has primary responsibility for mitigating noise impacts or eliminating incompatible land use within the communities surrounding LAX. LAWA requests that each jurisdiction affected by aircraft noise (65 CNEL or greater) prepare its own ANMP. With this input LAWA then prepares a composite ANMP for the entire noise impact area as a basis for setting funding levels and as a yardstick for measuring each jurisdictions implementation performance. (See page 4-93 of the Draft EIS/EIR.)

Subtopical Response TR-LU-3.3: Jurisdictions Included in the ANMP

Jurisdictions within the composite ANMP include unincorporated areas of Los Angeles County, City of Los Angeles, City of Inglewood, and City of El Segundo. Each of these jurisdictions implements its own

soundproofing and/or acquisition program to address their own noise impact area. (See page 4-93 of the Draft EIS/EIR.)

Subtopical Response TR-LU-3.4: Eligibility to Participate in the ANMP

Although the area significantly impacted by noise has been reduced since 1992, due in large part to the phase out of noisier aircraft, all incompatible land uses within the 1992 fourth quarter 65 CNEL noise contour or within 65 CNEL areas extending beyond the 1992 contour are eligible for participation in the ANMP (see page 4-95 of the Draft EIS/EIR). The boundary of the noise impact area is validated through continuous noise monitoring at 25 sites in the area surrounding LAX in compliance with California Department of Transpiration (Caltrans) and County of Los Angeles requirements. The data collected is used to develop contour maps which are presented in quarterly reports submitted to Caltrans and the County of Los Angeles. These maps are reviewed annually by LAWA along with other data to determine any need for adjustments to the ANMP boundaries.

For purposes of receiving sound insulation, certain properties may not be eligible due to structural deficiencies, building or zoning code violations, possession of a valid existing avigation easement, conformance with interior noise levels of 45 dB CNEL, or prior receipt of monetary compensation as a settlement of litigation against the airport.

Subtopical Response TR-LU-3.5: ANMP Provisions for Sound Insulation

Sound insulation is the primary means used by jurisdictions within the noise impact area to mitigate high levels of aircraft noise. Sound insulation improves an existing buildings resistance to infiltration of exterior noise thereby decreasing noise levels within habitable areas of a buildings interior. Typical examples of sound insulation include: replacement of loose-fitting doors and windows with acoustically rated doors and windows, adding insulation to attics, and fitting chimneys and vents with dampers and/or acoustic louvers. The benefits of sound insulation require that windows and doors be closed. As a result when sound insulation is provided it often includes alterations to existing ventilation systems or a new system to maintain fresh air circulation.

Subtopical Response TR-LU-3.6: Effectiveness of Sound Insulation

Sensitive sound level meters are used to measure noise levels in selected control areas in typical building types before and after sound insulation. This data is used to certify that the improvements made have achieved an acceptable reduction in interior noise levels.

Subtopical Response TR-LU-3.7: Installation of Sound Insulation

Once the airport has determined that a property is eligible for sound insulation the property owner is notified and must take the following steps:

- Attend a group meeting to sign up for the program
- Permit contractors and workers to access your home to take measurements, perform work, and make quality inspections and noise audits.
- Secure and protect all valuables at your home
- Protect dust-sensitive equipment
- Secure or remove pets during construction
- Remove all window coverings and breakable or valuable items from the work area

Subtopical Response TR-LU-3.8: Timeframe for Completion of Sound Insulation

As indicated in Section 4.2, *Land Use* (subsection 4.2.3, page 4-88) of the Supplement to the Draft EIS/EIR, according to the 2001 Noise Variance the estimated timeframe for completion of acoustical treatment or acquisition of residential units identified under the current ANMP is 7 years, or by March 21, 2008, funding and capabilities of the affected jurisdictions permitting. While the City of Los Angeles may achieve soundproofing by this time, other jurisdictions will most likely complete sound insulation by 2015 and land acquisition by 2021, the dates referenced in the 2001 ANMP. Priority is typically given to those homes within the noise impact area that are experiencing the highest noise levels. Generally, this area is located directly east of LAX on the landing approach to the north runways. Sound insulation is prioritized for residential properties within the highest CNEL measurement band above the 65 CNEL noise contour

(as shown on the ANMP) first. These are identified either by block by block or 1 dB CNEL bands. After sound insulation is completed within each band, a flexible end group is formed, consisting of properties whose owners had previously declined to participate but have reconsidered, and new owners who wish to participate where the previous owner had declined. Property owners in this group will be given the opportunity to participate after all the initially selected properties in the same project band have been insulated, but before the next project band is started. More specific information relative to timetables for individual properties is available through individual jurisdictions.

Subtopical Response TR-LU-3.9: Sound Insulation Cost

The program is voluntary and does not incur any cost to the property owner. However, funding is strictly limited to work that is directly related to sound insulation. The cost of any related remodeling or improvements required to address structural deficiencies or building code violations are borne by the homeowner.

Subtopical Response TR-LU-3.10: ANMP Progress

As further described in Section 4.2, *Land Use* (subsection 4.2.3, page 4-88) of the Supplement to the Draft EIS/EIR, as of June 2002 it is estimated that of the 33,099 residential units within the current ANMP boundaries, 6,685 previously incompatible dwelling units are now compatible with 3,845 residential units having become compatible since publication of the Draft EIS/EIR in January 2001. Additionally LAWA has notified all property owners within the City of Los Angeles ANMP boundaries of their eligibility to participate in the program. Meetings to explain the concepts of soundproofing and the process for participation in the program have also been held in these areas. While progress in implementing the ANMP has been substantial over the past few years, there have been challenges to implementation over time. Some jurisdictions have pursued an acquisition approach instead of sound insulation, where acquisition involves higher costs per unit in initial investment and a longer timetable for implementation. Implementation has also been slowed due to the existence of substandard or non-code compliant housing stock in heavily noise-impacted areas and in areas where residential properties are zoned or designated for non-residential use. Under ANMP criteria, substandard or non-code compliant housing does not qualify for sound insulation. Based on revised criteria under the 2001 ANMP, LAWA will now consider incompatible residential properties eligible for mitigation even if they have general plan or zoning inconsistencies. However, it may not be a priority or policy of other jurisdictions implementing the ANMP to provide sound insulation to residential properties that have inconsistent zoning or general plan designations.

Subtopical Response TR-LU-3.11: Additional Information Regarding the ANMP

Information on the ANMP can be found by consulting the following sources by applicable jurisdiction:

City of Los Angeles
Airport Residential Soundproofing Program
8939 S. Sepulveda Blvd., Suite 100
Los Angeles, California 90045
Phone: (310) 646-7444

City of Inglewood
Residential Sound Insulation Program
C/O Community Development Dept., 5th Floor
One Manchester Boulevard
Inglewood, California 90301
Phone: (310) 412-5289

County of Los Angeles
Residential Sound Insulation Program
C/O Community Development Commission
Housing Development and Preservation Unit
2 Coral Circle
Monterey Park, California 91755
Phone: (323) 890-7241

City of El Segundo
Residential Sound Insulation Program
350 Main Street
El Segundo, California 90245
Phone: (310) 524-2352

Subtopical Response TR-LU-3.12: Noise Complaint Procedures and Hotline

LAWA maintains a 24-hour noise complaint hotline that can be reached by dialing (310) 646-6473. In most instances staff are available to take calls, however, if staff are not available a system is in place for leaving messages. LAWA also has an electronic complaint form that is available on the LAX website at

www.lawa.org/lax. Complaints that are filed by phone or through the website can, upon request, receive a written response by LAWA's Noise Management Section once an investigation is complete. In addition, LAWA's website provides an Internet flight tracking system that allows the public to identify overflights specifically by aircraft type and altitude on an on-going basis with a ten-minute delay. Aircraft flight ID, origination, and destination information are available after a one-hour delay. Monthly reports summarizing the reported noise complaints and the results of the investigations are also available on the web site.

Subtopical Response TR-LU-3.13: Avigation Easement Related to Sound Insulation

Avigation, or airspace easements transfer certain property rights from the owner of an underlying property to the owner of an airport. The California Department of Transportation Division of Aeronautics, pursuant to Title 21, Subchapter 6, Section 5037(c), suggests that avigation easements for noise be secured voluntarily in exchange for acoustical insulation or through other means, in order to support development of compatible land uses.

As described in Technical Report 1, *Land Use Technical Report*, page 54 of the Draft EIS/EIR, under the terms of the 1998 Noise Variance, LAWA requests that affected property owners execute avigation easements in exchange for residential sound insulation. Under the terms specified in LAWA's Agreement for Home Insulation and Easement, the affected property owner may not seek further compensation from LAWA for noise-related damages due to airport operations unless three out of four consecutive quarterly maps submitted by LAWA to Caltrans and the County of Los Angeles indicate that noise levels imposed on the owner's property exceeds the fourth quarter 1992 noise levels (as presented in the ANMP). If this circumstance occurs, the owner may then seek additional sound insulation from LAWA.

As presented in Technical Report S-1, *Supplemental Land Use Technical Report*, page 12 of the Supplement to the Draft EIS/EIR, suspension of avigation easement requirements in exchange for funding of residential sound insulation is currently under study by LAWA as a condition of the 2001 Noise Variance for the jurisdictions of the City of Los Angeles, El Segundo, and Los Angeles County. As also described on pages 10 and 11 of the Supplemental Land Use Technical Report, under the Memorandum of Understanding between the City of Los Angeles and City of Inglewood, LAWA has suspended the requirement for an avigation easement for Inglewood residents receiving residential sound insulation under the ANMP as long as there is continued cooperation between the City of Los Angeles and Inglewood in studying, designing, and implementing mitigation measures that are mutually beneficial to Inglewood and LAWA. Also, with approval of the LAX Master Plan, under Mitigation Measure MM-LU-1, Implement Revised Aircraft Noise Mitigation Program, the requirement for granting of avigation easements with sound insulation mitigation would be reevaluated by LAWA.

Subtopical Response TR-LU-3.14: Impacts of the Master Plan Build Alternatives

Impacts of the Master Plan Build Alternatives. Section 4.1, *Noise* (subsection 4.1.6) and Section 4.2, *Land Use* (subsection 4.2.6) of the Draft EIS/EIR identified aircraft noise-related impacts associated with LAX Master Plan Alternatives A, B, and C. These same sections in the Supplement to the Draft EIS/EIR identified aircraft noise-related impacts associated with Alternative D, and provided a discussion of single-event aircraft noise impacts for all alternatives. As further described in these sections of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, each of the referenced alternatives would result in some areas being newly exposed to 65 CNEL or greater noise levels. Noise sensitive uses within these areas were identified as significantly impacted and mitigation measures are required to address these effects. Although noise-sensitive uses located within areas newly exposed to 65 CNEL or greater noise levels are considered significantly impacted by aircraft noise, it is important to note that for some alternatives, and within certain jurisdictions, there would be either a reduction in the overall area exposed or a reduction in the overall number of dwelling units and population exposed, compared to 1996 baseline and Year 2000 conditions. Furthermore, when compared to both 1996 baseline and Year 2000 conditions, a number of dwelling units would be removed from this noise level in 2015 under all of the Master Plan alternatives by 2015. (See also Section 4.2, *Land Use* (subsection 4.2.6), of the Supplement to the Draft EIS/EIR.

ANMP Related Mitigation Measures in the Draft EIS/EIR. As described in Section 4.2, *Land Use* (subsection 4.2.8) of the Supplement to the Draft EIS/EIR, approval of the LAX Master Plan would require implementation of Mitigation Measure MM-LU-1. Among other features, this measure calls for

acceleration of the fulfillment of existing commitments to owners wishing to participate within the current ANMP boundaries prior to proceeding with sound insulation or acquisition of properties that become newly eligible due to implementation of the LAX Master Plan. In addition to implementation of MM-LU-1, Mitigation Measure MM-N-4, Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration, and Mitigation Measure MM-N-5, Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory, as described in Section 4.1, *Noise* of the Supplement to the Draft EIS/EIR are also provided to address aircraft noise impacts. The findings in the Draft EIS/EIR conclude that after mitigation, aircraft noise impacts would remain significant relative to the following: where aircraft noise levels of 75 CNEL or greater affect residential properties with exterior habitable areas or other outdoor community areas; for interim impacts prior to sound insulation or acquisition; and, where properties do not qualify for sound insulation due to inconsistent zoning, land use, or substandard housing that is not feasible to insulate.

Existing and Proposed ANMP Program Related to Schools. As described in Technical Report 1, Land Use Technical Report of the Draft EIS/EIR, Section 4.2, *Land Use* of the Draft EIS/EIR, and the Amended Judgment and Final Order Entered by the Los Angeles Superior Court in January 1980 ("Settlement Agreement"), included as Attachment 4 of this Final EIS/EIR, in 1980, the City of Los Angeles paid $21 million to five public school districts, including Los Angeles Unified School District, Inglewood Unified School District, the Centinela Valley Union High School District (Lennox), and the Lennox School District in the settlement of a noise lawsuit. At the time of the "Settlement Agreement" 64 schools or related school uses were determined to be affected by airport operations. Under the terms of the "Settlement Agreement," the Court:

(a) Established avigation easements for noise, vibrations and fumes from LAX operations (Avigation Easements); and

(b) Required noise mitiation payment to five school districts, "to complete necessary construction or structural modifications of their facilities so as to reduce the noise levels in the classrooms resulting from the operation of commercial jet aircraft to and from and at Los Angeles International Airport," and to construct new facilities "in such a manner as to exclude in the classroom any objectionable levels of noise created by the operation of [LAX] to the extent of the easements granted herein."

The "Settlement Agreement" states that "the purpose of the air easements granted hereunder for noise, vibrations and fumes over [the districts schools] running to the benefit of the [City] is for the purpose of resolving all questions between the parties arising out of the defendant City's operation of … [LAX] and the consequent overflight or fly-by of jet aircraft with the attendant consequences of noise, vibrations and fumes with [the districts schools].

LAWA has reason to conclude that the projected sound levels associated with the Master Plan alternatives are well within the avigation easement limits and do not create a surcharge, based on the full provisions of the "Settlement Agreement." For example, the avigation easements are defined with "specific levels of noise exposure that will be permitted within the scope of the air easements." As ordered by the Court, the "criterion or quantitative measure of noise exposure used for the purpose of describing and establishing the air easements granted herein shall be the Community Noise Equivalent Level (CNEL) methodology." The avigation easements allow up to + 2 dB above 1970 aircraft noise levels and an additional +0.5 dB above the specified noise limits before the noise level is deemed to be a surcharge on the avigation easement. The avigation easements were awarded based on 1970 aircraft noise impacts with additional surcharge allowances for future construction and growth. The aircraft noise impacts in 1970 were much more extensive than identified under the 1996 baseline or Year 2000 conditions or conditions projected to occur under the Master Plan alternatives. No schools within the affected school districts are projected to exceed the specified noise limits to the avigation easements under Alternatives A, B, C, or D.

Accordingly, the avigation easements and noise mitigation payment and other provisions of the "Settlement Agreement" resolve land use incompatibility issues and noise impacts at affected schools. Schools without avigation easements that are determined to be newly exposed to significant aircraft noise levels are eligible for mitigation. Mitigation Measure MM-LU-1 provides mitigation for schools determined to be significantly impacted by aircraft noise, excluding schools with avigation easements. Mitigation may take the form of sound insulation or relocation. Further mitigation is provided under Mitigation Measures MM-LU-3 and MM-LU-4 in the form of study of aircraft noise levels that result in classroom disruption and

sound insulation for schools determined by the study or interim noise measurements to be significantly impacted.

Impacts and ANMP Related Mitigation Measures in the Supplement to the Draft EIS/EIR. Section 4.1, *Noise* (subsection 4.1.6), and Section 4.2, *Land Use* (subsection 4.2.6), of the Supplement to the Draft EIS/EIR included evaluation of an additional alternative, Alternative D, and also incorporated new information on Year 2000 conditions and analysis pertaining to single event noise levels and related effects associated with sleep disturbance and classroom disruption. New significant impacts related to aircraft noise are identified for Alternative D and for all of the build alternatives relative to single event noise levels. Similar to the other build alternatives, Alternative D would have a significant impact on noise-sensitive uses newly exposed to 65 CNEL or greater noise levels, although fewer uses would be affected than under Alternatives A, B, and C. Although some noise-sensitive uses would be newly exposed to 65 CNEL or greater noise levels in 2015, Alternative D would see an overall reduction in the area, dwelling units, and population exposed to this noise level compared to 1996 baseline and Year 2000 conditions. Furthermore, some dwelling units exposed to 65 CNEL or greater noise levels under the 1996 baseline and Year 2000 conditions, would be removed from this area of exposure in 2015 under Alternative D.

The Supplement to the Draft EIS/EIR refined and expanded the mitigation measures in the Draft EIS/EIR that address aircraft noise. The most important change from the Draft EIS/EIR is the incorporation of several new mitigations to address aircraft noise. New Mitigation Measure MM-LU-2, Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program (Alternatives A, B, C, and D), addresses single event exterior nighttime noise levels of 94 dBA SEL or greater which have been identified as significant based on a new threshold and analysis contained in the Supplement to the Draft EIS/EIR. Pursuant to this measure and with approval of the LAX Master Plan, residential uses newly exposed to high single event noise levels that are not already within the ANMP boundaries, would be included within the boundaries and would qualify for noise mitigation.

New Mitigation Measures MM-LU-3 and MM-LU-4 have been added based on new analysis undertaken to address single event and cumulative aircraft noise levels that could result in classroom disruption that affects the ability of children to learn, as discussed above. New Mitigation Measure MM-LU-5, Upgrade and Expand Noise Monitoring Program (Alternatives A, B, C, and D) involves upgrading and expansion of existing noise monitoring in communities surrounding LAX through new system procurement, noise monitor siting, and equipment installation. The upgraded system would support LAWA and other jurisdictional ANMP's through more accurate and up-to-date data for considering adjustments to the ANMP boundaries.

Conclusions presented in the Supplement to the Draft EIS/EIR (subsection 4.2.9.1) regarding the level of impact significance after mitigation identify, consistent with the Draft EIS/EIR, that certain aircraft noise related impacts would remain significant. In contrast to the findings in the Draft EIS/EIR, this conclusion also now identifies interim impacts that would occur prior to mitigation for single event noise levels and impacts that would result in classroom disruption when classroom activities take place outdoors.

TR-LU-4: Outdoor Noise Levels

Introduction

This topical response has been prepared to address concerns that outdoor noise levels associated with implementation of the proposed LAX Master Plan would increase substantially compared to 1996 baseline and Year 2000 conditions, and as a result residents would be forced to remain indoors and would be precluded from enjoying outdoor activities. This response consolidates information presented in the Draft EIS/EIR and Supplement to the Draft EIS/EIR with specific focus on outdoor noise levels and changes in outdoor noise levels that would result from the build alternatives.

Discussion

One threshold used to identify areas exposed to high noise levels is the 65 CNEL noise contour. As described in Section 4.2, *Land Use* (subsection 4.2.3), pages 4-93 through 4-96 of the Draft EIS/EIR, areas exposed to the 1992 fourth quarter 65 CNEL are eligible for sound insulation or acquisition under

the Aircraft Noise Mitigation Program (ANMP). As shown on Figure 4.2-5, 1996 Baseline Conditions with 1992 65 dB CNEL, in the Draft EIS/EIR and Figure S4.2-2, Year 2000 Conditions vs. 1996 Baseline Areas Newly Exposed, in the Supplement to the Draft EIS/EIR areas exposed to high levels of aircraft noise have progressively decreased from 1992 conditions.

The threshold used to identify significant outdoor noise impacts for residential and school uses is new exposure to 75 CNEL or greater noise levels. For residential uses this applies only to those residential properties with habitable exterior areas (i.e., balconies, patios, yards). (See Section 4.2, *Land Use* (subsection 4.2.6), of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.) Generally, significant outdoor noise impacts on residential areas would occur under Alternatives A and B compared to both 1996 baseline and Year 2000 conditions to the east of LAX in the City of Los Angeles and Los Angeles County. No significant outdoor noise impacts on residential areas would occur under LAWA Staff's preferred Alternative D or under Alternative C. Also under Alternative B, Felton School, in the Lennox community of Los Angeles County, would be significantly impacted as it would be newly exposed to the 75 CNEL compared to both 1996 baseline and Year 2000 conditions. No schools would be newly exposed to the 75 CNEL and significantly impacted under the other build alternatives. Thresholds were also developed to identify single event or cumulative noise levels that result in classroom disruption (see Section 4.1, *Noise* (subsection 4.1.4.1.1) and Section 4.2, *Land Use* (subsection 4.2.6) in the Supplement to the Draft EIS/EIR). In addition to schools newly exposed to the 75 CNEL noise levels, schools newly exposed to high single event or cumulative noise levels that result in classroom disruption and without avigation easements would be significantly impacted, including areas where classroom instruction takes place outdoors. See Topical Response TR-LU-3 regarding avigation easements, prior noise mitigation payments, and other provisions of the Amended Judgment and Final Order ("Settlement Agreement") which resolve land use incompatibility and aircraft noise mitigation issues associated with airport operations and affected schools.

Parks newly exposed to 75 CNEL or greater noise contours are also identified in Section 4.2, *Land Use* (subsection 4.2.6) of the Draft EIS/EIR and Supplement to the Draft EIS/EIR and further evaluated in Section 4.8, *Department of Transportation*, *Section 4(f)* of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, as well as Appendix H, *Department of Transportation Section 4(f) Report*, of the Draft EIS/EIR. Vista del Mar and Dockweiler Beach State Park are currently exposed to noise levels of 75 CNEL or greater. As discussed in Section 4.8, *Department of Transportation*, Section 4(f) of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, although portions of Dockweiler Beach State Park would be newly exposed to noise levels of 75 CNEL or greater under the build alternatives compared to Year 2000 conditions, overall noise exposure would be reduced. In addition, any increase in noise levels on portions of Dockweiler Beach State Park and Vista Del Mar Park would not substantially interfere with the normal use of the park, which has functioned over time while exposed to high noise levels and continues to be frequently used. Based on the above, the effects of outdoor noise levels associated with the implementation of the build alternatives on parks would not be significant.

Mitigation measures under the LAX Master Plan that would reduce exposure of noise sensitive uses to high noise levels were presented in Section 4.1, *Noise* (subsection 4.1.8.1) and Section 4.2, *Land Use* (subsection 4.2.8) of the Supplement to the Draft EIS/EIR. These include undertaking a process seeking legal authority to make over-ocean procedures mandatory; and revising the ANMP to encompass noise-sensitive uses newly exposed to high noise levels and schools newly exposed to high single event or cumulative noise levels that result in classroom disruption. However, as stated in Section 4.2, *Land Use* (subsection 4.2.9.1) of the Supplement to the Draft EIS/EIR, even after the incorporation of these mitigation measures significant noise impacts would remain under the following conditions: where aircraft noise levels of 75 CNEL or greater affect residential properties with exterior private habitable areas such as backyards, patios, or balconies as well as other outdoor community areas where noise would interfere with speech and other activities (such as schools).

Recognizing the specific impacts identified above, the following information focuses on the question of whether overall outdoor noise levels would increase or decrease under Alternatives A, B, C, and D compared to the 1996 baseline, Year 2000, and No Action/No Project Alternative, the overall area within the 65 and greater CNEL noise contour, the overall area within the 75 CNEL noise contour, and respective residential areas were assessed. This data is presented in Table 1, Areas Exposed to 65 CNEL and 75 CNEL Noise Levels (1996 Baseline, Year 2000 Conditions, and All Alternatives). The information presented in Table 1 is based on data presented in tables provided in Technical Report 1,

Land Use Technical Report, of the Draft EIS/EIR; and Technical Report S-1, *Supplemental Land Use Technical Report*, of the Supplement to the Draft EIS/EIR.

Table 1

Areas Exposed to 65 CNEL and 75 CNEL Noise Levels
(1996 Baseline, Year 2000 Condition, and All Alternatives)

	1996 Baseline	Year 2000	No Action/ No Project	Alternative A	Alternative B	Alternative C	Alternative D
65+ CNEL Total Area (acres)	7,231	6,985	6,713	6,900	8,049	7,071	6,616
65+ CNEL Residential Area (acres)	1,261	1,347	1,090	1,143	1,551	1,128	1,089
75+ CNEL Total Area (acres)	2,592	2,058	2,000	2,132	2,327	2,021	1,899
75+ CNEL Residential Area (acres)	36	26	7	8	9	6	4

As shown on this table, several comparisons result in either a decrease in the overall area exposed to high noise levels or a decrease in the overall residential area exposed to high noise levels. Under Alternative D (the LAWA Staff preferred alternative) there would be a reduction in the overall area and residential area exposed to the 65 CNEL and 75 CNEL contours compared to the 1996 Baseline and Year 2000 Conditions. Alternative B would result in an increase in overall area within the 65 CNEL compared to the 1996 baseline and Year 2000 conditions, and Alternative C would result in an increase in overall area compared to Year 2000 conditions. However, under Alternative C the residential areas would decrease compared to 1996 baseline and Year 2000 conditions. Alternatives A, B, and C would result in a decrease in overall area exposed to the 75 CNEL compared to the 1996 baseline conditions, and Alternative C would also result in an overall decrease compared to Year 2000 conditions. Alternatives A, B, and C would experience a decrease in residential area exposed to the 75 CNEL compared to the 1996 baseline and Year 2000 conditions.

The concerns voiced by residents and others regarding high outdoor noise levels associated with aircraft were largely focused on complaints about existing conditions and/or an expectation that outdoor noise levels would worsen with implementation of the LAX Master Plan. Issues associated with existing outdoor noise levels are not the result of the proposed project and are outside of the scope of the EIS/EIR for the LAX Master Plan. However, the data shown in Table 1 helps bring perspective to future circumstances relative to high outdoor noise levels. For most comparisons, the overall area and residential area exposed to high noise levels under future conditions decreases. Accordingly, while it is accepted that some areas within surrounding communities would experience an increase in outdoor noise levels that could affect outdoor speech and the quality of certain outdoor activities, in most instances, and for most areas, outdoor noise levels would be reduced or would remain similar to 1996 baseline or Year 2000 conditions. For Alternative D, LAWA Staff's preferred alternative, all comparisons show reductions in the overall area and overall residential area that would be exposed to high outdoor noise levels compared to 1996 baseline and Year 2000 conditions.

Also refer to Topical Response TR-N-6, regarding increased noise levels from development of the build alternatives. See TR-LU-2, regarding the ANMP and filing of noise complaints.

TR-LU-5: Land Use/Noise Mitigation

Introduction

This topical response is provided in response to the many comments received on existing noise mitigation measures, proposed noise mitigation measures, who would qualify, and how these would be implemented and enforced. The information presented below is based on discussions provided in Section 4.1, *Noise,* and Section 4.2, *Land Use,* of the Draft EIS/EIR and Supplement to the Draft EIS/EIR.

Discussion

Subtopical Response TR-LU-5.1: Current Efforts by LAWA to Address Existing High Noise Levels and Reduce Land Use Incompatibility

Current programs and efforts to address existing high noise levels and reduce land use incompatibility include the following:

- The Aircraft Noise Mitigation Program (ANMP) and Residential Soundproofing Program. Under the ANMP incompatible land uses (defined as residential uses, schools, hospitals, and churches) located within the 1992 fourth quarter 65 CNEL noise contour are eligible for sound insulation or acquisition. The residential soundproofing program provides sound insulation for eligible residential units through such measures as replacing loose-fitting doors and windows with acoustically rated doors and windows to reduce interior noise levels to 45 CNEL. (See also Topical Response TR-LU-3.)
- The Aircraft Noise Abatement Program. This Program provides for the abatement of aircraft noise through operation or source noise control including aircraft traffic, flight, and runway use procedures. (See Topical Response TR-N-7 and Attachment 1 of this Final EIS/EIR for additional information about these procedures.)
- Memorandum of Understanding (MOU) between the City of Los Angeles and the City of Inglewood. The MOU was agreed to in order to pursue and implement certain measures designed to study and mitigate environmental impacts (including noise) on Inglewood from existing and future LAX operations. The following provisions of the MOU are currently in effect in the City: suspension of avigation easement requirements, provision of air conditioning with sound insulation for eligible residential units, and City of Inglewood and LAWA participation in an aircraft noise task force. (See Technical Report S-1, *Supplemental Land Use Technical Report*, pages 10 and 11 in the Supplement to the Draft EIS/EIR for a listing and description of MOU provisions that address noise mitigation programs.)
- Noise complaint hotline, and internet based electronic complaint form and flight tracking system. In order to inform the public and track and respond to noise complaints associated with a specific flight (for example high single event noise levels associated with early turns, missed approaches, or low altitude), LAWA maintains a 24-hour noise complaint hotline, and an electronic complaint form and Internet flight tracking system at www.LAWA.org/lax. (See also Subtopical Response TR-LU-3.12.)
- Voluntary Residential Acquisition Program for Manchester Square and Airport/Belford. This Program was established based on interest from homeowners and residents who requested that LAWA purchase their properties in lieu of soundproofing. Acquisition, demolition, and clearing are currently underway. As of October 31, 2002 approximately 62 percent of the property owners have volunteered to participate. This Program is independent of the LAX Master Plan, (See also Section 4.2, *Land Use* (subsection 4.2.3) of the Draft EIS/EIR and Supplement to the Draft EIS/EIR and Topical Response TR-MP-3.)
- LAX Community Noise Roundtable. The LAX Community Noise Roundtable was created by LAWA in September 2000 in an effort to help reduce and mitigate adverse noise impacts on surrounding communities from LAX operations. Noise issues from LAX operations currently being addressed and evaluated by the LAX Community Noise Roundtable include but are not limited to the following: over ocean operations procedure at night, eliminating easement requirement for sound insulation, early turns and overflights over communities, and expanding the noise monitoring system. (See also Technical Report S-1, *Supplemental Land Use Technical Report*, in the Supplement to the Draft EIS/EIR, page 11 and www.lawa.org/lax/htmlenv/main.html.)
- LAX Area Advisory Committee. The LAX Area Advisory Committee works in conjunction with the Board of Airport Commissioners and LAWA Community Relations staff to address concerns in their respective communities resulting from airport operations, including noise, traffic, and signs. Current issues of interest to the Committee that relate to the noise mitigation include eliminating the avigation easement requirements for residential properties that receive soundproofing.

Subtopical Response TR-LU-5.2: Thresholds Used in the Draft EIS/EIR and Supplement to Draft EIS/EIR to Identify Significant Aircraft Noise Impacts

The following thresholds used to determine impact significance were presented in Section 4.1, *Noise* and Section 4.2, *Land Use* of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. (New exposure refers to comparison with the 1996 baseline.):

- New exposure to the 65 CNEL or greater contour for residential, schools, churches, hospitals, select outdoor recreational uses (such as amphitheaters);
- New exposure to the 1.5 CNEL or greater increase within the 65 CNEL or greater contour for residential, schools, churches, hospitals, select outdoor recreational use (such as amphitheaters);
- New exposure to the 75 CNEL contour for residential land uses with habitable exterior areas including balconies, patios, and yards;
- New exposure to the 75 CNEL contour for certain outdoor uses such as parks and school playgrounds;
- New exposure to 94 dBA SEL contour for residential uses that result in nighttime awakening;
- New exposure to 55 dBA L_{max}, 65 dBA L_{max}, and 35 $L_{eq(h)}$ interior noise levels that result in classroom disruption.

Subtopical Response TR-LU-5.3: Identification of Noise-Sensitive Uses

Based on FAR Part 150 and Title 21 of the California Code of Regulations requirements (as presented in Section 4.2, *Land Use* (subsection 4.2.2)), noise-sensitive uses are defined as residential, schools, churches, hospitals, and selected outdoor recreational use (e.g., amphitheaters).

Subtopical Response TR-LU-5.4: Significant Impacts on Noise-Sensitive Uses Identified in the Draft EIS/EIR and Supplement to the Draft EIS/EIR

Noise-sensitive uses newly exposed to the above referenced thresholds are considered to be significantly impacted. These were presented in Section 4.2, *Land Use* (subsection 4.2.6), of the Draft EIS/EIR and in the Supplement to the Draft EIS/EIR. More specifically, noise-sensitive uses are listed in Technical Report 1, *Land Use Technical Report* and Technical Report S-1, *Supplemental Land Use Technical Report.* Noise-sensitive uses newly exposed to the 65 CNEL or greater contour, a 1.5 CNEL or greater increase within the 65 CNEL or greater noise contour, and the 94 SEL contour are shown on all corresponding figures for the No Action/No Project Alternative, and Alternatives A, B, C, and D in Section 4.2, *Land Use* and Technical Report 1, *Land Use Technical Report* of the Draft EIS/EIR and in Section 4.2, *Land Use* and Technical Report S-1, *Supplemental Land Use Technical Report* of the Supplement to the Draft EIS/EIR. As described in Subtopical Response TR-LU-5.8 below, schools newly exposed to these noise thresholds that have existing avigation easements are not considered eligible for noise mitigation.

In addition, some areas would experience a change in exposure to significant noise levels due to a shift in the noise contour under the build alternatives, compared to 1996 baseline and Year 2000 conditions. This shift in noise contours would result in some population being removed from high noise levels or in a reduced area exposed to high noise levels. Generally, the areas that would experience the greatest noise impact are located to the east of LAX in the City of Inglewood, City of Los Angeles (South Los Angeles), and Los Angeles County (Lennox). Areas that would experience an overall reduction in noise impact are in the City of El Segundo and communities of Westchester and Playa del Rey. (See also Topical Response TR-LU-2 for a discussion of potential effects of the Master Plan alternatives on Westchester.) Overall, Alternative D would result in fewer noise-sensitive uses newly exposed to high noise levels compared to the other build alternatives and in similar noise-sensitive use exposure as the No Action/No Project Alternative. Alternative D would also result in an overall reduction of area and population exposed to high noise levels compared to the 1996 baseline and Year 2000 conditions.

Although not considered to be a significant impact, noise-sensitive parcels that would experience an increase of 3 CNEL between the 60 and 65 CNEL and noise-sensitive parcels that would experience a 5 CNEL increase below the 60 CNEL, were identified in Section 4.2, *Land Use* (subsection 4.2.6), of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. In addition, it is acknowledged in Section 4.2, *Land Use* of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, that increases in outdoor noise

levels within the 65 to 75 CNEL contours would occur under the build alternatives and such increases could affect outdoor speech and the quality of certain outdoor activities. This increase, although perceptible, would not exceed thresholds of significance.

Subtopical Response TR-LU-5.5: Mitigation Proposed in the Supplement to the Draft EIS/EIR to Reduce Impacts from Aircraft Noise

Section 4.1, *Noise* and Section 4.2, *Land Use* of the Supplement to the Draft EIS/EIR presented mitigation measures to reduce aircraft noise impacts through modifying airport operations (MM-N-1 through MM-N-5), expanding the ANMP (MM-LU-1 and MM-LU-2), providing additional sound insulation to schools determined to be newly exposed to single event noise levels that result in classroom disruption (MM-LU-3 and MM-LU-4), and updating the current noise monitoring program (MM-LU-5). The mitigation measures presented in the Supplement to the Draft EIS/EIR provide the basis for the mitigation measures presented in this Final EIS/EIR.

Refer to Section 4.1, *Noise* (subsection 4.1.8.1) of this Final EIS/EIR for the complete text of the mitigation measures summarized below:

- MM-N-1. Reserve Runway 6L/24R for Arrival Traffic Only (Alternative A);
- MM-N-2. Runway 25L for Arrival Traffic (Alternative B);
- MM-N-3. Runway 7R for Departure Traffic (Alternative B);
- MM-N-4. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration (Alternatives A, B, C, and D);
- MM-N-5. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory (Alternatives A, B, C, and D).

See also Topical Response TR-N-7 and Attachment 1 of this Final EIS/EIR for additional discussion of noise abatement measures.

Refer to Section 4.2, *Land Use* (subsection 4.2.8) of this Final EIS/EIR for the complete text of the mitigation measures presented below:

- MM-LU-1. Implement Revised Aircraft Noise Mitigation Program (Alternatives A, B, C, and D).
- MM-LU-2. Incorporate Residential Dwelling Units Exposed to Single Event Awakenings Threshold into Aircraft Noise Mitigation Program (Alternatives A, B, C, and D).
- MM-LU-3. Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn (Alternatives A, B, C, D).
- MM-LU-4. Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise (Alternatives A, B, C, and D).
- MM-LU-5. Upgrade and Expand Noise Monitoring Program (Alternatives A, B, C, and D).

Subtopical Response TR-LU-5.6: Funding of Mitigation Measures

Mitigation measures would be primarily funded through LAWA passenger facility charge (PFC) funds, and resale of acquired parcels. Funding may also be obtained through Federal Aviation Administration Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Program grants or other sources.

Subtopical Response TR-LU-5.7: Residential Uses Currently within the ANMP Boundaries but Not Yet Mitigated

MM-LU-1 in the Supplement to the Draft EIS/EIR included provisions for LAWA to accelerate existing commitments to owners wishing to participate in the ANMP prior to proceeding with newly eligible properties, reduce or eliminate structural constraints to mitigate substandard housing, and provide additional technical assistance to local jurisdictions to support the implementation of their land use mitigation programs.

Subtopical Response TR-LU-5.8: School Mitigation

As described in Technical Report 1, *Land Use Technical Report* of the Draft EIS/EIR, Section 4.2, *Land Use* of the Draft EIS/EIR, and the Amended Judgment and Final Order Entered by the Los Angeles

Superior Court in January 1980 ("Settlement Agreement"), included as Attachment 4 of this Final EIS/EIR, 64 schools or related school uses within the Los Angeles Unified School District, Inglewood Unified School District, the Centinela Valley Union High School District, and the Lennox School District received $21 million in settlement funds from the City of Los Angeles as a result of a lawsuit in the mid-1970s. Under the terms of the "Settlement Agreement," the Court:(a) Established avigation easements for noise, vibrations and fumes from LAX operations (Avigation Easements); and

(b) Required noise mitigation payment to five school districts, "to complete necessary construction or structural modifications of their facilities so as to reduce the noise levels in the classrooms resulting from the operation of commercial jet aircraft to and from and at Los Angeles International Airport," and to construct new facilities "in such a manner as to exclude in the classroom any objectionable levels of noise created by the operation of [LAX] to the extent of the easements granted herein."

The "Settlement Agreement" states that "the purpose of the air easements granted hereunder for noise, vibrations and fumes over [the districts schools] running to the benefit of the [City] is for the purpose of resolving all questions between the parties arising out of the defendant City's operation of … [LAX] and the consequent overflight or fly-by of jet aircraft with the attendant consequences of noise, vibrations and fumes with [the districts schools].

LAWA has reason to conclude that the projected sound levels associated with the Master Plan alternatives are well within the avigation easement limits and do not create a surcharge, based on the full provisions of the "Settlement Agreement." For example, the avigation easements are defined with "specific levels of noise exposure that will be permitted within the scope of the air easements." As ordered by the Court, the "criterion or quantitative measure of noise exposure used for the purpose of describing and establishing the air easements granted herein shall be the Community Noise Equivalent Level (CNEL) methodology." The avigation easements allow up to + 2 dB above 1970 aircraft noise levels and an additional +0.5 dB above the specified noise limits before the noise level is deemed to be a surcharge on the avigation easement. The avigation easements were awarded based on 1970 aircraft noise impacts with additional surcharge allowances for future construction and growth. The aircraft noise impacts in 1970 were much more extensive than identified under the 1996 baseline or Year 2000 conditions or projected to occur under the Master Plan alternatives. No schools within the affected school districts are projected to exceed the specified noise limits to the avigation easements under Alternatives A, B, C, or D.

Accordingly, the avigation easements and noise mitigation payment and other provisions of the "Settlement Agreement" resolve land use incompatibility issues and noise impacts at affected schools.

Schools without avigation easements that are determined to be newly exposed to significant aircraft noise levels are eligible for mitigation. Mitigation Measure MM-LU-1 provides mitigation for schools determined to be significantly impacted by aircraft noise, excluding schools with avigation easements. Mitigation may take the form of sound insulation or relocation. Further mitigation is provided under Mitigation Measures MM-LU-3 and MM-LU-4 in the form of study of aircraft noise levels that result in classroom disruption and sound insulation for schools determined by the study or interim noise measurements to be significantly impacted**.**

Subtopical Response TR-LU-5.9: Implementation and Monitoring of Noise Mitigation Measures

Pursuant to Section 21081.6(a) of CEQA, LAWA and the FAA will adopt a monitoring or reporting program to ensure that the mitigation measures identified in the EIS/EIR are implemented. Compliance with this program would ensure the implementation of mitigation measures presented in the Supplement to the Draft EIS/EIR and adopted when making the necessary findings in conjunction with project approval. The 65 CNEL contour that would establish the revised ANMP boundary under the LAX Master Plan would be verified by field measurements that are submitted in quarterly reports to the County of Los Angeles and Caltrans. Actual adjustments to the ANMP boundary that would result from including areas exposed to the 94 dBA SEL would be based on periodic revaluation of the 94 dBA SEL by LAWA. The Aircraft Noise Abatement Program Elements, would be updated by LAWA to reflect the new airfield configuration. As described in Subtopical Responses TR-N-7.1 and TR-N-7.2 LAWA's involvement in enforcement of the noise rules is limited in most cases to tracking, recording, and advising, except where such a restriction has been subject to a CFR Part 161 Notice and Approval of Airport Noise and Access

Restrictions Study that has been reviewed and approved by the FAA. To this extent MM-LU-5 would make over-ocean procedures mandatory between the hours of midnight and 6:30 a.m.

Subtopical Response TR-LU-5.10: Significant Impacts Remaining After Mitigation

As identified in Section 4.2, *Land Use* (subsection 4.2.9) the following impacts would remain after mitigation:

- Where aircraft noise levels of 75 CNEL or greater affect residential areas, such as backyards, patios, and balconies; as well as other outdoor community areas (such as schools) where noise would interfere with speech and other activities;
- Interim impacts that would occur prior to completion of noise insulation or recycling of incompatible land use that are newly exposed to high noise levels;
- Schools newly exposed to significant single event noise impacts when and where classroom activities take place outdoors;
- Impacts on incompatible uses ineligible for insulation due to inconsistent zoning or land use designation;
- Impacts on substandard housing units that are not in compliance with current building code requirements.

Based on revised criteria under the 2001 ANMP, LAWA will now authorize the mitigation of incompatible residential properties regardless of general plan or zoning inconsistencies. However, it is not a priority or policy of other jurisdictions implementing the ANMP to provide sound insulation to residential properties that have inconsistent zoning or general plan designations.

TR-MP-1: Air Cargo Activity/Demand

Introduction

Many comments were received containing questions regarding cargo activity. This topical response provides a detailed discussion of cargo forecast/demand, cargo activity, cargo handling, and cargo night operations, which can be used as a reference in the responses to many individual comments. In addition to this topical response, specific responses are provided for individual cargo comments.

Discussion

Cargo Forecast/Demand

Demand for air transportation has increased steadily over the past four decades as the region has grown and as flying has become more accepted and affordable mode of travel. Air cargo service has also grown dramatically during the period. The demand for air cargo is a derived demand. Demand for air transportation of cargo is tied to both the level and the type of economic activity in the region. Some businesses, such as high technology and internet-based firms, have a higher propensity to ship goods by air. International trade is also increasingly and heavily dependent on air transportation of cargo. As these economic sectors have expanded and grown so has the demand for air cargo. As discussed in Chapter III, Forecasts of Aviation Demand, Section 9 of the Draft LAX Master Plan, the total volume of air cargo in the five county Los Angeles region increased 6.0 percent annually between 1988 and 1994, from 1.5 million tons to 2.15 million tons. This increase is especially notable since it occurred during a period of economic recession. Since 1994, the annual growth rate has been 6.8 percent, with 2.6 million tons of air cargo processed in the region in 1997.

The cargo forecast generally reflects the trend toward increased use of air cargo by the region's businesses and residents. The growth of international trade and Internet sales, two driving forces behind the cargo growth, is expected to increase the use of express package air freight.

The LAX Master Plan forecast of the unconstrained demand for air cargo tonnage is to grow from approximately 2.1 million tons in 1997, to approximately 4.2 million tons by 2015.

Cargo Activity

The economy in the Los Angeles region relies heavily on LAX to meet the air cargo demand. LAX has become a leader in the efficient movement of time sensitive, low weight, high value, and perishable goods to all regions of the world. In 1996, approximately 1.9 million tons of air cargo moved through LAX's cargo warehouses onto passenger and all-cargo aircraft, making it the second busiest cargo airport in the world.[57] Forty-six percent of all cargo handled at LAX is transported in the belly of passenger aircraft. As shown in Table III-9.7, Forecast Total Air Cargo at LAX, Chapter III, Forecasts of Aviation Demand, of the Draft LAX Master Plan, air cargo at LAX is forecast to reach 3.1 million annual tons by 2005 and 4.2 million tons by 2015. The average annual growth rate over the next 20 years is forecast to be 4.4 percent, compared to 4.7 percent over the last 20 years. The LAX air cargo forecast projects a continuation of the rapid growth of volume seen in the past.

Cargo Handling

The 1.9 million tons of air cargo moved through LAX in 1996, was handled on 197 acres with 1.9 million square feet of cargo building space and 77 acres of apron area. Alternatives A, B, and C each accommodate approximately 4.2 million annual tons of air cargo in 2015. However, the amount of building square footage and acres of ramp and apron areas varies among the alternatives. Please see Table S3-2 titled *Facilities by Alternatives - 2015,* in Chapter 3, Alternatives, of the Supplement to the Draft EIS/EIR for a listing of the cargo space allocated in each alternative.

LAWA has developed a new alternative for consideration as part of the LAX Master Plan that is consistent with the Southern California Association of Governments 2001 RTP. Alternative D - The Enhanced Safety and Security Alternative - is designed to serve approximately the same level of air cargo activity as the No Action/No Project Alternative (3.1 million annual tons). To ensure that the LAX Master Plan Alternative D has been fully analyzed to the level of the previous Master Plan alternatives, LAWA has prepared a Supplement to the January 2001 Draft EIS/EIR. Chapter 3 of this new Supplement to the Draft EIS/EIR provides extensive information on the formulation of Alternative D and its consistency with the SCAG 2001 RTP.

Cargo Night Operations

The growth rate for operations by dedicated air cargo aircraft would be less than the growth rate for air cargo tonnage. Of the daily cargo operations forecast, nighttime cargo operations (defined as operations conducted between 10:00 p.m. and 6:59 a.m.) represent 2.5 percent to 3.1 percent of the total daily design day operations as indicated in Table 1 below:

Table 1

Cargo Operations

Alternative Condition	Total Daily Design Day Operations	Total Daily Cargo Operations	% of Total Daily Operations	Nighttime Cargo Operations	% of Total Daily Operations
1996 Baseline	2235	76	3.40%	37	1.70%
2000 Conditions	2275	117	5.10%	53	2.30%
2015 No Action/No Project	2279	117	5.10%	56	2.50%
2015 Alternative A	2719	157	5.80%	73	2.70%
2015 Alternative B	2719	157	5.80%	73	2.70%
2015 Alternative C	2319	157	6.80%	73	3.10%
2015 Alternative D	2279	117	5.10%	56	2.50%

Sources: Draft EIS/EIR, January 2001; Supplement to the Draft EIS/EIR, July 2003; Draft LAX Master Plan, November 10, 2000; Draft LAX Master Plan Addendum, July 2003

[57] Airports Council International.

TR-MP-2: SCAG Regional Transportation Plan (RTP)

Introduction

Comments on the LAX Draft EIS/EIR have raised questions about the Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) and its relationship to the LAX Master Plan. This topical response is provided to clarify the contents of the analysis for each plan, the status of each plan and the effect of the SCAG RTP on the Supplement to the Draft EIS/EIR that was released for public comment in July 2003.

Discussion

SCAG's Role in the LAX Master Planning Process

Overview of SCAG

The Southern California Association of Governments (SCAG) is an inter-governmental, regional planning organization charged with studying and proposing solutions to problems, particularly related to transportation, facing the people of Southern California. It is comprised of six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 186 cities. The SCAG region has more than 16 million residents and encompasses more than 38,000 square miles.[58]

SCAG's Regional Council is the governing body of the organization. The Regional Council is comprised of over 70 city and county elected officials and county transportation commissioners. In addition to the Regional Council, there are four committees: Administration Committee; Transportation and Communications Committee (TCC); Community, Economic and Human Development Committee; and Energy and Environment Committee. These committees are comprised of Regional Council members, elected official representatives from transportation commissions, the California Department of Transportation (Caltrans), and members representing the Regional Advisory Council - SCAG's community and private sector advisory group. In addition to the four policy committees, there are various task forces and subcommittees that address specific regional policy and technical planning issues. The Aviation Task Force is the subcommittee of the TCC that addresses issues related to solving the need for long-term air transportation capacity in the region.

SCAG's Responsibility in the Region and in Airport Planning

SCAG is officially designated as the Council of Governments (COG), the multi-county designated Transportation Planning Agency, and the Metropolitan Planning Organization (MPO) for the SCAG region by both the federal and state governments. As such, SCAG has a number of formal authorities and responsibilities, including:

- Conducting a comprehensive transportation planning process that results in a Regional Transportation Plan (RTP) and a Regional Transportation Improvement Program (RTIP). Together these documents serve as the legal basis for transportation decision-making in the region.
- Conducting a comprehensive environmental planning process, including a Program Environmental Impact Report (PEIR) for the Regional Transportation Plan and reviewing and assessing Environmental Impact Reports (EIRs) for all projects of regional significance.
- Determining, pursuant to the Clean Air Act, the conformity of SCAG projects, plans, and programs to air quality requirements.
- Serving as the area wide Waste Treatment Management Planning Agency under the Federal Water Pollution Control Act.
- Developing demographic projections and the integrated land use, housing, employment, and transportation programs, measures, and strategies portions of the South Coast Air Quality Management Plan.
- Conducting inter-governmental review of programs proposed for federal assistance.

[58] Southern California Association of Governments website: http://www.scag.ca.gov, 2003.

- Preparing Regional Housing Needs Assessment allocations for cities and counties.

SCAG's Responsibility as Related to the LAX Master Plan

The City of Los Angeles is a member of SCAG's Regional Council and LAWA provides key input to the Aviation Task Force and Transportation and Communications Committee (TCC). The two agencies work together to each play a critical role in the policy of air transportation in the region. LAX is one of three commercial service airports in the SCAG region owned and operated by LAWA. Ontario International Airport and Palmdale Regional Airport are also owned and operated by the City of Los Angeles. At the same time that SCAG has projected a policy limitation on the capacity of LAX they have projected the effect of incentives that will encourage passengers and shippers to use Ontario extensively in the future. SCAG has also shown a major growth in demand interested in using Palmdale.

SCAG has provided leadership on the planning of intra-urban, high-speed rail for Southern California. A high-speed rail line is included in the 2001 RTP to be planned and implemented between LAX and March Inland Port. This rail line is assumed to be operational in the 2010 time frame and would be instrumental in SCAG's policy to limit passenger and cargo demand at LAX.

In September 2003, SCAG's Aviation Task Force reviewed a number of potential scenarios to determine a recommended Preferred Regional Aviation Plan as part of the 2004 Regional Transportation Plan (RTP) currently being developed. The Aviation Task Force recommended the Integrated Variation as the Preferred Regional Aviation Plan. The Draft 2004 RTP (which included the Integrated Variation as the Preferred Regional Aviation Plan) was presented to and approved by the Regional Council in October 2003. The proposed Integrated Variation assumes that a high-speed Maglev rail line connecting West Los Angeles to Ontario would be completed by 2010. SCAG aviation studies have taken into account the effects a high-speed Maglev system would have on the regional airport system. SCAG has assumed that LAX would reach 78 MAP with or without a Maglev system and thus, LAX operations would be little changed by a Maglev connection to the intra-regional system. It is anticipated that the 2004 RTP will be finalized and approved in spring 2004.

LAWA's Efforts to Ensure Compatibility Between the LAX Master Plan and the SCAG RTP

In 2001, James K. Hahn was elected Mayor of the City of Los Angeles. Mayor Hahn directed LAWA to develop a new alternative to be added to the LAX Master Plan that is consistent with the SCAG RTP and also meets new standards for safety and security at LAX. LAWA worked with SCAG in the development of the 2001 RTP so this new guidance is inherent in the base information used for the SCAG analysis.

Close coordination of input information and assumptions is the key way that consistency is formed between the detailed LAX Master Plan and the general regional planning in the SCAG RTP. This coordination begins with forecasts of population, employment, and personal income, forecasts of aviation activity, regional ground transportation modeling, and air quality modeling. Each agency has slightly different perspectives and responsibilities in the region when it comes to airport planning. SCAG is charged with setting broader policy goals for transportation in the region while LAWA is charged with planning, implementing and operating LAX as part of the region's system of airports and also as part of the National Airports System (NAS). Despite these differences in perspective, the two agencies have worked together at the policy level in the Regional Council, at the advisory level in the Aviation Task Force, and at the staff level in sharing data and analyses results.

Effect of SCAG's 2001 RTP on the Supplement to the Draft EIS/EIR

In response to the direction of Mayor Hahn, LAWA developed a new alternative for consideration as part of the LAX Master Plan. Alternative D - The Enhanced Safety and Security Alternative - is designed to serve aviation activity at LAX consistent with the SCAG 2001 RTP selected aviation scenario. To ensure that the LAX Master Plan Alternative D has been fully analyzed to the level of the previous Master Plan alternatives, LAWA prepared a supplement to the January 2001 Draft EIS/EIR. Chapter 3, Alternatives, of the Supplement to the Draft EIS/EIR, provided extensive information on the formulation of this alternative and its consistency with the SCAG 2001 RTP.

Status of RTP

The RTP for Southern California, last updated in April 2001, provides an assessment of the overall growth and economic trends in six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura), and provides a blueprint for a cohesive, balanced, and multi-modal transportation system.

According to SCAG, "[t]he RTP is intended to serve as a catalyst for linking transportation agency investments within the SCAG region, and it addresses regional goals and is consistent with Federal and State requirements." Major transportation projects receiving either federal or state funding must be consistent with the provisions of the latest Plan, and, thus, the RTP is a critical document to help ensure adequate federal and state funding needed to maintain and improve mobility and accessibility throughout Southern California.

SCAG is required to update and revise the RTP and the RTP Program Environmental Impact Report (PEIR) at least once every three years. SCAG is currently preparing the 2004 RTP and the RTP PEIR. A Notice of Preparation (NOP) for the 2004 RTP PEIR was released by SCAG for public comment on June 9, 2003. The comment period was for 30 days.

In their NOP for the 2004 RTP, SCAG has suggested four preliminary alternatives for study in the plan. They include a No Project Alternative, a Modified 2001 RTP Alternative, a Planning for Integrated Land Use and Transportation One (PILUT1) and a Planning for Integrated Land Use and Transportation Two (PILUT2). The No Project Alternative will include "reasonably foreseeable" projects that include those that are presently funded, scheduled to receive funding, and/or have received environmental clearance. The Modified 2001 RTP Alternative will be updated to include a new base year of 2000 and a new planning horizon year of 2030. The PILUT1 Alternative will be developed to centralize development in existing urban cores while the PILUT2 Alternative will decentralize development further on the existing urban edges.

Several key changes have taken place in the region since the publication of the 2001 RTP to further constrain total airport capacity. The voters of Orange County rejected El Toro conversion to a civilian commercial airport in 2002. El Toro was planned to accommodate up to 30 million annual passengers (MAP) in the 2025 time frame. The cap on passengers at John Wayne Airport was raised from 8.4 MAP to over 10 MAP. Other facility pressures and operational limitations remain at Burbank Airport and Long Beach Airport.

The Draft 2004 RTP which includes the Preferred Aviation Plan was approved by the Regional Council in October 2003. It is anticipated that the final 2004 RTP will be presented to the Regional Council for approval in spring 2004.

TR-MP-3: Manchester Square

Introduction

This topical response is intended to respond to the majority of the comments received on the Supplement to the Draft EIS/EIR that address issues related to land acquisition in the Manchester Square area and why the Draft LAX Master Plan Addendum included an alternative that would require the location of a GTC at Manchester Square. More specifically, this topical response provides discussion on the following subjects of concern: 1) two types of land acquisition: proposed land acquisition associated with the Master Plan Alternatives and land acquisition associated with Manchester Square and Belford under the ANMP; 2) acquisition and relocation procedures; 3) status of acquisition in Manchester Square and Belford; 4) location of the GTC at Manchester Square; 5) replacement housing availability; and 6) changes to General Plan and zoning designations of acquisition areas. The discussion is based in part, on information contained in the Draft LAX Master Plan, Draft LAX Master Plan Addendum, Draft EIS/EIR, and Supplement to the Draft EIS/EIR.

Discussion

Subtopical Response TR-MP-3.1: Two Types of Land Acquisition

There are two different types of land acquisition associated with LAX. However, the majority of the comments received appeared to have confused one with the other. This portion of the topical response provides the distinction between the two types of acquisition. The purpose of this topical response is to address the issues related to the land acquisition associated with only the Manchester Square and Belford areas.

One type of acquisition described in Chapter 3 of the Draft EIS/EIR and Supplement to the Draft EIS/EIR is proposed under the Master Plan alternatives to facilitate the development of airport-related uses.

Another type of acquisition is currently underway as part of the existing Voluntary Residential Acquisition/Relocation Program, which is implemented under the on-going ANMP. Please see Section 4.2, Land Use (subsection 4.2.3), of the Draft EIS/EIR and Topical Response TR-LU-3 for more information on the ANMP. As stated in the Draft EIS/EIR, Section 4.2, Land Use, and Section 4.4.2, Relocation of Residences and Businesses, the Manchester Square and Belford areas, located in the City of Los Angeles, are being acquired through an existing program that was established by LAWA based on a high level of interest from those who reside in the area which is currently exposed to high noise levels. The program was instituted independently of the LAX Master Plan and has separate utility. This program is underway and will be completed with or without approval of the LAX Master Plan. As noted, the effects of this acquisition are assessed under the No Action/No Project Alternative. Furthermore, as referenced in Section 4.2, Land Use, of the Draft EIS/EIR, LAWA's "Final Initial Study/Mitigated Negative Declaration -No. AD 094-00, Manchester Square and Airport/Belford Area Voluntary Acquisition Project"[59] was approved by the City of Los Angeles in June 2000 for the Manchester Square and Airport/Belford Voluntary Acquisition Program. The document evaluated the impacts of the program under CEQA and provided mitigation measures.

Subtopical Response TR-MP-3.1.1: Proposed Land Acquisition Associated with the Master Plan Alternatives

Each of the Master Plan alternatives propose land acquisition outside the Manchester Square/Belford area programs. Impacts relating to residential acquisition under each of the alternatives were analyzed in Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR. The affected properties were illustrated in Figure 3-8, Alternative A Proposed Property Acquisition Areas; Figure 3-12, Alternative B Proposed Property Acquisition Areas; and Figure 3-16, Alternative C Proposed Property Acquisition Areas, within Chapter 3, Alternatives, of the Draft EIS/EIR. The property addresses, parcel numbers, and type of use were listed in Table A-3, Parcel Detail of Acquisition Areas Alternative A; Table B-3, Summary Statistics of Acquisition Areas Alternative B; and Table C-3, Summary Statistics of Acquisition Areas Alternative C, in Appendix P to Chapter V of the Draft LAX Master Plan.

As shown in Table S4.2-20 of the Supplement to the Draft EIS/EIR, Alternative D would result in the least amount of land acquisition, compared to the other build alternatives. Additionally, unlike the other build alternatives, Alternative D proposes no residential acquisition. However, if the associated surface transportation Mitigation Measure MM-ST-13, recommending a new interchange at I-405 and Lennox Boulevard, is implemented as a mitigation measure for Alternative D, it is possible that 9 to 12 homes may need to be acquired as part of Alternative D. Land purchases or LAWA-terminated ground leases associated with Master Plan Alternative D were provided in Chapter 2, Section 2.7 of the Draft LAX Master Plan Addendum. For more detailed information on relocation regarding Alternative D, please see Chapter 2, Section 2.8 of the Draft LAX Master Plan Addendum and Section 4.4.2, Relocation of Residences or Businesses, of the Supplement to the Draft EIS/EIR. Also, see Appendix P to Chapter V of the Draft LAX Master Plan for more detailed information on acquisition and relocation regarding Alternatives A, B, and C.

Subtopical Response TR-MP-3.1.2: Land Acquisition Associated with Manchester Square and Belford under the ANMP

The land acquisition in the Manchester Square and Belford areas is currently underway as part of the existing Voluntary Residential Acquisition/Relocation Program, which is implemented under the on-going ANMP. As indicated on page 1-1 in Section 1.1, Introduction, of LAWA's "Final Initial Study/Mitigated Negative Declaration -No. AD 094-00, Manchester Square and Airport/Belford Area Voluntary Acquisition Project," beginning in early 1997, LAWA began implementing the LAX Residential Soundproofing Program to sound insulate residential dwellings in the City of Los Angeles under FAR Part 150, an airport

[59] City of Los Angeles, Los Angeles World Airports, Residential Acquisition Bureau, Final Initial Study/Mitigated Negative Declaration No. AD 094-00, Manchester Square and Airport/Belford Area Voluntary Acquisition Project, prepared by Dames & Moore, June 2000.

noise compatibility and funding program. In that year, homeowners and residents within two neighborhoods known as Manchester Square and Belford approached LAWA, requesting the purchase of their properties and relocation in lieu of soundproofing. It should be noted that a survey of Manchester Square property owners that was conducted by the Manchester Square Neighborhood Watch MSAC Committee in June 1997 found that the vast majority (83 percent) of survey respondents would be interested in participating in a buy-out of the entire Manchester Square area. The subject survey is included in Appendix B of the Draft EIS/EIR. Subsequently, the Board of Airport Commissioners agreed with the residents' requests and directed staff to develop a Voluntary Residential Acquisition/Relocation Program as an alternative noise mitigation program. The proposed program was approved by the FAA in 1998. Thus, the Voluntary Residential Acquisition/Relocation Program for the Manchester Square and Belford areas is separate from Master Plan acquisition, and is proceeding and will be completed regardless of approval of the LAX Master Plan.

Subtopical Response TR-MP-3.2: Acquisition and Relocation Procedures

As discussed in Section 4.4.2, Relocation of Residences or Businesses (subsection 4.4.2.1), of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, the acquisition of property and relocation of residents and businesses by federally funded airports such as LAX is governed by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (codified as amended at 42 USC 4601-4655), its implementing regulations (49 CFR Part 24), FAA Order 5100.37A, and Acquisition and Relocation Assistance for Airport Projects (April 4, 1994, P.L. 91-646), collectively referred to as the Uniform Act. The acquisition and relocation of residences in the Manchester Square and Belford areas have been and will continue to be conducted in accordance with the Uniform Act, thereby minimizing community disruption, limiting adverse economic impacts and protecting human rights. The acquisition process has provided both compensation and relocation assistance for the owners and occupants of various land uses as well as an aggressive relocation strategy to retain businesses within the City of Los Angeles.

The intent of the Uniform Act, as indicated in Section 24.1, Purpose, in Subpart A - General, of Exhibit 4 of LAWA's "Final Relocation Plan - Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford,"[60] is to ensure fair, consistent, and equitable treatment for individuals who are displaced or whose real property is acquired as a result of a federally funded project. Relative to residential relocation, the Uniform Act requires that assistance be provided to find comparable, decent, safe, and sanitary housing units within a reasonable time prior to relocation, and that the unique needs of minority and low-income persons be addressed. Please see Exhibit 4 of the "Final Relocation Plan - Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford," which specifies procedural requirements regarding notification to affected owners, appraisals, compensation at fair market value, relocation payments (including moving expenses, mortgage interest rate differentials or rent differentials, down payment assistance, and assorted incidental costs), and advisory assistance. In addition, please see Topical Response TR-RBR-1 for more detailed discussion on residential acquisition/relocation.

Subtopical Response TR-MP-3.3: Status of Acquisition in Manchester Square and Belford

Separate from the residential acquisition necessary for Master Plan implementation, an existing Voluntary Residential Acquisition/Relocation Program is currently underway within the Belford and Manchester Square areas near the airport, as part of LAWA's ANMP. As indicated in Section 4.2, Land Use (subsection 4.2.3), of the Draft EIS/EIR, Manchester Square contains 519 parcels that comprise approximately 123 acres of land. There are 280 single-family residences located within the neighborhood with the majority of the residences concentrated in the interior portion. Manchester Square also contains 239 parcels of multi-family residential buildings, primarily along the perimeter streets of the neighborhood. These buildings contain approximately 1,705 dwelling units.

As stated in Section 4.4.2, Relocation of Residences or Businesses (subsection 4.4.2.3), of the Supplement to the Draft EIS/EIR, since its inception in 1998 through October 31, 2002, the existing

[60] City of Los Angeles, Los Angeles World Airports, Residential Acquisition Bureau, Final Relocation Plan – Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford, June 2000 (adopted by the Board of Airport Commissioners July 18, 2000).

Voluntary Residential Acquisition/Relocation Program for the Manchester Square and Airport/Belford areas has resulted in the acquisition of a total of 782 single- and multi-family dwelling units in the Manchester Square area and 322 multi-family dwelling units in the Airport/Belford area. Of these, 75 single-family structures in Manchester Square have been demolished. Commencing in 2002, 10 residential structures have been moved via LAWA's Move On Housing Program[61] during that time frame. As of October 2003, the ANMP has resulted in the cumulative acquisition of 345 properties, representing approximately 61% of the ANMP total acquisition objective. Since the publication of the Supplement to the Draft EIS/EIR, some residents decided to opt out of the program, and this resulted in a decrease in the number of dwelling units acquired to date. The acquired properties as of October 2003 consist of 770 single- and multi-family dwelling units in the Manchester Square area and 316 multi-family dwelling units in the Belford area. Of these, 84 single-family structures in Manchester Square have been demolished, and 23 residential structures, totaling 27 dwelling units have been moved via LAWA's Move On Housing Program. Should the ANMP voluntary property acquisition for the Belford and Manchester Square areas not be completed in a timely manner relative to implementation of Master Plan improvements proposed for the subject area, the City of Los Angeles will use the most appropriate and practical measures available (e.g., voluntary acquisition, leasing, and/or public condemnation) to ensure that the designated areas are vacated consistent with the Master Plan Construction Sequencing Plan. These measures would be available for all build alternatives to pursue any needed acquisition that cannot be obtained through negotiations.

Subtopical Response TR-MP-3.4: Location of the GTC at Manchester Square

As discussed in Section H.2, Initial Concepts, of Appendix H of the Draft LAX Master Plan Addendum, the intent of the initial development concept for Alternative D, the Enhanced Safety and Security Plan, was to: 1) to enhance security through removal of private and commercial vehicles from the CTA, 2) create new permanent passenger pick-up and drop-off facilities; 3) increase short and long term parking capacity; and 4) provide a direct APM system to connect to the CTA and the MTA Green Line Station. Like all build alternatives, concept development of Alternative D was an iterative process under which five initial concepts were developed and subsequently six new alternatives emerged with Manchester Square being the preferred location for the GTC. For more detailed information on the concept development of Alternative D and the decision to locate the GTC at Manchester Square, please see Appendix H of the Draft LAX Master Plan Addendum, which contains development sketches and original concepts demonstrating the evolution of the Alternative D concept.

As addressed in Section 1.1, Policy and Planning Objectives, of the Draft LAX Master Plan Addendum, Alternative D would be designed to accommodate passenger and cargo activity levels at LAX that would approximate those of the No Action/No Project Alternative, have fewer environmental impacts than the No Action/No Project Alternative, and in light of the tragic events of September 11, 2001, would be designed to enhance airport safety and security. The purpose of locating the GTC at Manchester Square is to provide a conventional airport landside environment for air passengers at a separate location from the CTA, thereby improving 1) safety and security of LAX by eliminating the threat of blast in close proximity to large congregations of queuing passengers at CTA; 2) ground access to and around LAX, as well as 3) the landside system that currently exists in the CTA. The Draft LAX Master Plan Addendum addressed the role of the GTC in Chapter 2, Alternative D Development and Refinement. For more detailed discussion on security, please see Topical Response TR-SEC-1 and Appendix I of the Draft LAX Master Plan Addendum.

Subtopical Response TR-MP-3.5: Replacement Housing Availability

As indicated earlier in Subtopical Response TR-MP-3.1.2, the Voluntary Residential Acquisition/Relocation Program for the Manchester Square and Belford areas is separate from the Master Plan acquisition plan and is an approved program. A survey was conducted in 1999 in order to assess relocation needs of the Manchester Square and Belford areas including replacement housing. The survey identified the number of bedrooms for both the single family residences and the rental units of the

[61] The Move On Housing Program is a collaborative effort between public and not-for-profit organizations to move and rehabilitate Manchester Square and Belford area structures in order to transfer housing assets to residential areas in Los Angeles County, provide reasonable housing for displaced tenants, and provide construction-related employment opportunities to community residents.

participants that volunteered for acquisition. Then the listings of single family residences and rental vacancies available within approximately a 10-mile radius from the Program area were obtained, with the price differential taken into consideration. The survey concluded that there is an adequate supply of housing in the private market in comparable or better neighborhoods in Western Los Angeles County to accommodate the needs of the owners and tenants to be relocated from the Program area. It is also very important to note that the Final Relocation Plan did not take into account substantial new housing that has recently come on the market or is currently being developed in the local area at Playa Vista and in small, independent projects located throughout the City of Los Angeles and the region.

For more detailed information on housing availability, please see Chapter V, Replacement Housing Availability, of LAWA's "Final Relocation Plan - Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford," and Section 3.3, Evaluation and Environmental Topics (subsection 12), of LAWA's "Final Initial Study/Mitigated Negative Declaration -No. AD 094-00 Manchester Square and Airport/Belford Area Voluntary Acquisition Project."

Subtopical Response TR-MP-3.6: Changes to General Plan and Zoning Designations of Acquisition Areas

As stated in Section 4.2.6.1 of the Draft EIS/EIR, Manchester Square is comprised of approximately 122.5 acres. Of this total 48.3 acres is zoned R1-1, One-Family Zone, Height District 1 (structure limited to 33 feet) and 74.2 acres is zoned R3-1, Multiple-Family Zone, Height District 1 (structure limited to 45 feet).

An overview and general discussion of zone changes and other entitlements that would be required for Manchester Square under Alternatives B and C were described in Sections 4.2.6.3 and 4.2.6.4, respectively, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. As shown on Figure S4.2-6 of the Supplement to the Draft EIS/EIR, no development is proposed for Manchester Square under Alternative A. Zone changes required under Alternative D were discussed in Section 4.2.6.5 of the Supplement to the Draft EIS/EIR.

Under Alternative D, the LAX Plan would replace the Interim Plan as a Plan of the City of Los Angeles General Plan Land Use Element. An amendment to the Westchester-Playa del Rey Community Plan map and text and zone change would be required to reflect the acquisition areas and, under Alternatives B, C, and D, the 123-acre Manchester Square to allow for the development of airport-related uses within the LAX Plan and corresponding LAX Zone/LAX Specific Plan. This change would represent a removal of residential and commercial uses from the Westchester-Playa del Rey Community Plan. There would also be other amendments required to the City of Los Angeles Framework Element and Transportation Elements for consistency.

TR-N-1: Noise Modeling Approach

Introduction

A number of those submitting comments questioned the approach to the modeling of aircraft noise. Use of the Integrated Noise Model (INM) as a tool to reflect the noise exposure pattern surrounding Los Angeles International Airport was contested by a number of persons who contended that noise patterns were better displayed through measurement. This topical response will respond to questions and comments about the approach taken for the development of noise contours and the accuracy of the model relative to noise levels measured in the field, as well as the approach to the development of input information to the model.

Based on the types of concerns expressed regarding the aircraft noise modeling approach, the discussion provided in this topical response has five subtopics.

Discussion

Subtopical Response TR-N-1.1: INM Calculated Noise Levels Compared to Noise Levels Measured in the Field

As was disclosed in Appendix D of the Draft EIS/EIR, the noise exposure patterns produced by the Integrated Noise Model (INM) sometimes differ with the noise levels at 26 permanent noise measurement sites maintained by LAWA. While true, this is not problematic for the disclosure requirements of NEPA and CEQA.

The INM is a planning tool originally designed by the Volpe Transportation Research Center at Massachusetts Institute of Technology. It was originally intended to provide a representation of the general patterns of noise for a given mix of runway configuration, aircraft fleet, time of day of operations, assumed weather conditions, and assumed operational characteristics. When modeled noise levels at the 26 noise measurement sites maintained by LAWA around LAX for the environmental baseline period are compared to the measured noise levels for the same period, variations of -3.5 to +3.0 CNEL were found, with an average deviation of -1.1 CNEL.

Airports in California are required by state law to mitigate the impacts of aircraft noise within the 65 CNEL contour, as represented in Quarterly Reports to the California Department of Transportation, Division of Aeronautics. Because there is a deviation between measured and modeled noise levels, mitigation programs are based on noise contours that begin as modeled representations of noise exposure patterns developed with the INM and then are adjusted based on noise measurements for the Quarterly Reports. Boundaries of mitigation programs (sound insulation, etc.) are based on the adjusted noise contours. At LAX, the Airport Noise Mitigation Program (ANMP) boundary, which establishes eligibility for participation in mitigation programs, is based on the adjusted noise exposure pattern present in 1992. In future years, the boundary may be modified, but any changes will be based on adjusted noise contours submitted under the Quarterly Report requirements, rather than upon contours that are developed solely through INM modeling without adjustment.

The INM is used as a planning tool to allow the user to compare the relative effect of one set of theoretical conditions against those of another. The relative differences are expected to remain consistent for the two conditions reflected, regardless of the inconsistencies between measured and modeled data. Therefore, the FAA requires noise exposure patterns based on modeled (FAA Order 5050.4A, §§ 47e(1)(d) and 85a, and FAA Order 1050.1D, Attachment 2, pp. 44-45) rather than measured data for its EIS evaluations. Modeled conditions are also regularly used in California for CEQA evaluations. The measured noise data collected at the various sites around the Airport is not adequate to allow the modification of the INM databases to better reflect measured noise levels. In California, however, mitigation actions are taken based on Quarterly Report noise exposure maps submitted to the California Department of Transportation, and these maps are based on modeled noise patterns adjusted for measured information.

Subtopical Response TR-N-1.2: Modeled vs. Measured Baseline Year Noise Levels

As noted under TR-N-1.1, noise exposure patterns for modeled conditions do not always reflect noise patterns based on measured data. This was the case in the environmental baseline year 1996 and was also true in the year 2000. This difference is a function of maps prepared for two different purposes. Required under NEPA and accepted under CEQA, modeled noise exposure maps are used as planning tools to allow the comparison of different scenarios of operation over a broad geographical area. Maps developed from measured data and adjusted for measured data at permanent sites reflect actual exposure levels at those measurement sites and reflect estimated noise levels within the remainder of the noise pattern. These adjusted maps are used to meet California requirements to define noise mitigation programs.

According to FAA's policy guidance for the preparation of NEPA documents (FAA Orders 5050.4A and 1050.1D, change 4) noise exposure patterns are to be presented without modification by noise levels measured in the field. This guidance is provided to assure the direct comparability between noise exposure conditions at some future time, with and without the proposed action. Since future conditions cannot be measured, the FAA requires that only modeled noise contours be used for the comparison.

Subtopical Response TR-N-1.3: Use of 1996 Baseline Noise Levels From Which to Measure Increases Benefits Associated with Proposed Alternatives

The true increase associated with proposed alternatives is determined by comparing the no action conditions with the conditions created by the action at the same future point in time. This is the approach taken under NEPA. CEQA requires the disclosure of project and cumulative impacts compared with existing conditions, evaluation of those impacts against adopted/accepted thresholds of significance, and the consideration of feasible alternatives and mitigation measures to reduce significant impacts to below a threshold of significance. Thresholds of Significance for the CEQA analysis and federal standards for the NEPA analysis can be found in Section 4.1.4 of the Final EIS/EIR. It should also be noted that, although the area significantly impacted by noise has been reduced since 1992, all incompatible land uses within the 1992 fourth quarter 65 CNEL noise contour or within 65 CNEL areas extending beyond the 1992 contour are eligible for participation in the ANMP. As such the choice of a 1996 baseline or a 2000 baseline is inconsequential for mitigation purposes. Appendix S-C of the Supplement to the Draft EIS/EIR discusses in detail the effects of a new alternative for the development of the airport, and discloses the modeled noise exposure pattern for year 2000 operations. The appendix also allows the comparison of the 1996 environmental baseline noise contours to the year 2000 noise contours and project alternatives. The comparison indicates a reduction in the extent of the contours to the north and south of the airport, in the area affected by aircraft in the first stage of their takeoff climbs to the west. However, to the east of the airport under the approach paths to the north and south runway complexes, the year 2000 contour is actually longer than the environmental baseline contour. Thus, use of the 1996 contour does not "hide" or underestimate potential noise increases associated with the proposed alternatives.

Although Stage 2 aircraft have been phased out during this time period, aircraft operations have increased. See Supplement to the Draft EIS/EIR, Table S3-3. As illustrated in Table S4.2-2 of the Supplement to the Draft EIS/EIR, the resulting noise exposure contours are similar in shape, with small variations in the width and length of the contours. For further information regarding the changes in acreage, dwellings, noise-sensitive parcels, and population impacted by high noise levels, see Table S4.1-1 of the Supplement to the Draft EIS/EIR.

Subtopical Response TR-N-1.4: Simplified Line Drawing Flight Tracks vs. Track Dispersion

Several comments indicated that, for accuracy in noise modeling many dispersed flight tracks leading to and from the airport must be used. The comments further suggest that the modeling for the LAX Draft EIS/EIR noise exposure patterns is inaccurate because dispersed flight tracks were not used in modeling.

Flight track dispersion greatly enhances noise modeling, and the noise modeling in this project was based on dispersed flight tracks. The real issue is how these dispersed flight tracks are derived.

The INM allows the user to develop flight tracks in two ways. In the first method the user evaluates radar data available for the airport and to construct a series of flight paths representative of the routes that are actually flown by aircraft at the airport. This was the technique used in the Draft EIS/EIR and Supplement to the Draft EIS/EIR to define flight tracks for application at LAX. Between 24 and 42 flight tracks were defined to represent the locations of the 94-98% of all departures that takeoff to the west over the ocean, and 22 to 33 flight tracks were defined to represent the locations of the 94-98% of the arrivals that land from the east over the city. The remaining 18 to 45 tracks, dependent upon the alternative evaluated, were used by the 2-6% of all arrivals from over the ocean or takeoffs to the east over the city.

This technique provided adequate dispersion to accurately project the locations of arrivals within the 65 CNEL contour and beyond, because virtually all arrivals fly the straight-in instrument approach course from beyond the Long Beach Freeway. West of the airport, once passing the coastline, aircraft begin to disperse along turns to the southwest or remain on course to the west before turning northward to eventually rectos the coastline at altitudes of 8-12,000 feet. The precise location of the 65 CNEL contour over the Santa Monica Bay is not critical because aircraft noise does not result in adverse land use effects where it occurs over the ocean, so a large number of departure courses to the west are not necessary for noise modeling. By the time the aircraft cross back over the coastline, the noise levels have dropped well below 65 CNEL due to the altitude of the aircraft at that point. Consequently, little to no track dispersion is required for westbound departure tracks.

A second method is used when detailed information about flight locations is not available. With this second method the user creates a small number of "backbone" flight tracks leading to and from each runway and then asks the model to automatically disperse a series of 1 to 4 "subtracts" on each side of each backbone, creating a track "bundle." This technique assumes that the number of operations within the track "bundle" will be equally distributed to the right and left of the backbone. This methodology may result in less accurate flight tracks (since the initial volume of flight tracks is less than the first technique) for where turns occur because the sub-tracks must be equally distant to the inside and outside of the turn. This results in inadequate dispersion over the flight locations.

Owing to the unique characteristics of LAX's operating environment and noise exposure patterns, the development of extensive backbone and sub-track patterns is the less accurate method and, therefore, is not appropriate to this noise modeling process.

Subtopical Response TR-N-1.5: Accuracy of the Forecast Fleet Mix

Numerous commentors expressed concern with the aircraft type and number of aircraft used in the forecast fleet mix used of the noise analysis. The fleet mix forecast for future operations used in the Draft EIS/EIR and Supplement to the Draft EIS/EIR are based on best professional judgment and the reasons and assumptions behind those judgments are provided in the Draft Master Plan and the Draft Master Plan Addendum for public scrutiny. The fleet mix adopted for INM modeling is based on the master plan fleet mix, using INM aircraft type codes representative of the aircraft type and considering the carriers in operation at the airport. The future mixes for 2005 include the continued use of older Stage 2 aircraft that have been re-engine or retrofitted to meet Stage 3 standards, but these older aircraft are phased out of the mix by 2015. Recent trends in the aviation industry indicate that the phase out of these less efficient and noisier aircraft may occur at an earlier date than originally assumed.

TR-N-2: Single Event Noise and CNEL Differences

The consideration of single event aircraft noise levels, compared to the cumulative noise levels used for the identification of areas significantly impacted by aircraft noise, is frequently a concern for persons residing in airport environs.

Introduction

Numerous comments were received suggesting that the use of the 65 dB CNEL 24-hour Community Noise Equivalent Level as a basis for identifying significant noise impacts was not appropriate especially as related to impacts from single event aircraft noise. This topical response describes the suitability of using the 65 CNEL for the impacts analysis.

Discussion

Subtopical Response TR-N-2.1: CNEL Characterization of Noise Events

CNEL describes weighted average noise conditions, or more accurately, CNEL measures logarithmic averages of noise for multiple flights, with noise penalties applied to evening and night flights. This is the method universally used in describing transportation noise occurring over a sustained period of time.

Aircraft noise occurs differently at each location around the airport. From each place a person hears different types of noise from aircraft, each event being somewhat different in terms of its length, its total noise, its peak loudness, and the effect on the listener created by the time of day in which each event occurs. Furthermore, each day has a unique set of noise events. These events can be described by a set of single event metrics (time above a given noise level, peak loudness, average noise level of the event, etc.). However, the difficult task is to select a metric that permits us to compare how everyone is (and will be) affected by aircraft noise, everywhere and all of the time. Individual single event metrics do not permit this comparison.

The CNEL contour is used to delineate areas of significant impact for FAA analyses of noise exposure in California. The CNEL metric takes into consideration all single event noise levels to which every portion of the airport environs is exposed on an average day of the year. The relationship between CNEL and single event noise levels may be explained by an analogy.

Consider that the level of water in a rain barrel is representative of the CNEL present at a given location. At midnight the barrel is empty. Each passing overflight by an aircraft results in the addition of an amount of water into the barrel in proportion to the amount of noise energy generated by the single aircraft event. For example, a landing by a 747 might result in the addition of a quart of water into the barrel, and if it occurred at night when the 10 times penalty is in effect, ten quarts of water would be added. Later a 747 takeoff might overfly the area, and since the takeoff is several decibels louder than the arrival, its energy might equal four quarts of water, but if it occurred between 7 a.m. and 7 p.m., no penalty would be applied. Still later, another 747 takeoff occurs and the energy is equivalent to four quarts of water, but if it occurred between 7 p.m. and 10 p.m., the three times penalty would be applied, resulting in the addition of twelve quarts of water to the barrel. This process would continue through the 24-hour period until midnight, with teaspoons and thimblefuls and pints and glasses of water being added to the barrel, each in proportion to the amount of noise energy in the various single events to which the location is exposed. At the end of the period, the total depth of water in the barrel is measured and mathematically converted to represent the CNEL for that 24-hour period. The barrel is then emptied and the process repeated for the 365 days of the year. At the end of the year, the total depths for all days are added and divided by 365 to result in the average annual depth of water in the barrel, which is in turn equivalent to the average annual amount of energy in the barrel. The average energy is then mathematically translated into CNEL to provide the average annual CNEL.

Consequently, the CNEL considers every single event to which a location is exposed and converts the result to a metric of convenience. Furthermore, a single very loud event may create the same amount of noise energy as many quieter events and result in the same average noise level. The use of the CNEL metric normalizes the effect of the noise energy exposure across all users in a manner that allows comparison between different areas exposed to different characteristics of noise. This ability to compare the total noise received at each location is critical in considering the effect of a proposed project and in determining the noise mitigation that should be required for project approval.

Numerous studies have demonstrated that annoyance with aircraft noise is most closely correlated with the cumulative noise level (DNL or CNEL), and also that the only useful land use compatibility guidelines for planning in an airport environment are based on cumulative metrics.[62] Therefore, the FAA has developed its land use guidance and compatibility criteria around the cumulative metrics. It has determined that 65 CNEL is the level at which significant impacts are present. Use of the CNEL does not contend that individuals are not bothered or annoyed by single noise events (which are evaluated in detail in the Supplement to the Draft EIS/EIR), but rather that a more scientifically acceptable correlation for land use planning purposes is present with the cumulative metric.

Subtopical Response TR-N-2.2: Use of the 65 CNEL to Determine Significant Impacts

The Federal Interagency Committee on Aircraft Noise (FICAN) has, on several occasions, reviewed the adequacy of the 24-hour 65 DNL (CNEL in California) for the delineation of areas exposed to noise levels incompatible with sensitive land uses and has consistently rejected any reduction. The State of California, through Title 21, Section 5006 of the Code of Regulations, identifies standards that may be used as CEQA thresholds for the description of aircraft noise in California. The 65 dB CNEL has been established as the State noise criterion acceptable to a reasonable person residing in the vicinity of an airport. The Federal Aviation Administration has consistently agreed with the findings of the FICAN and continues to accept the 65 DNL/CNEL as the Federal standard. The State's recently republished Airport Land Use Compatibility Handbook provides guidance to Airport Land Use Commissions based on the 65 CNEL standard.

Until recently, CEQA levels of significance for aircraft noise have been based upon 65 CNEL, consistent with Federal standards. However, a California Court of Appeal found that, for purposes of CEQA, an evaluation of the effects of single event aircraft noise levels would be required of the Oakland Board of Port Commissioners in its development of a nighttime air cargo facility at Oakland International Airport. In that case, Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners (2001) 91 Cal.App.4th 1344, referred to as "Berkeley Jets", the Court of Appeal ruled that, to provide a more accurate and complete picture of a project's noise impacts and to provide more comprehensive mitigation,

[62] Federal Aviation Administration, Aviation Noise Abatement Policy, November 18, 1976.

a single event noise analysis must supplement an EIR's cumulative noise analysis, including use of appropriate thresholds of significance and mitigation of significant event (i.e., the use of CNEL was not invalidated by the ruling, but the court directed that a single event noise analysis supplement the 65 CNEL standard).

The Supplement to the Draft EIS/EIR prepared for this project extensively addresses the effects of single aircraft events on nighttime awakenings and on school disruption (see Appendix S-C and Section 4.1 of the Supplement to the Draft EIS/EIR).

Subtopical Response TR-N-2.3: Evaluation of Impacts Should Extend Beyond the 65 CNEL Contour to All Sensitive Areas Under Flight Tracks

Evaluation of impacts in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR do go beyond the 65 CNEL contour, as recommended by the Federal Interagency Committee on Aircraft Noise (FICAN). FICAN has determined that 65 DNL (CNEL) is the proper level at which determinations of significance should be set for environmental evaluations prepared for its member agencies, including the FAA. In 1974, the Environmental Protection Agency produced a document suggesting that other levels may also be useful in defining noise impacts over sensitive areas. Furthermore, the California Airport Land Use Planning Handbook, published by the State's Division of Aeronautics, sets forth guidance for the evaluation of land uses within and outside the 65 CNEL contour. This Draft EIS/EIR and its Supplement to the Draft EIS/EIR follow the guidance set forth by the federal agency responsible for reviews of proposed aviation projects, for levels of significance. See Section 4.1.4.1 of the Supplement to the Draft EIS/EIR. However, both the FAA and CEQA case law requires a review of noise levels and changes in levels outside 65 CNEL.

Provisions are made under FAA's Order 5050.4A,¶ 47(e)(1)(d)(2) that if a proposed project results in an increase of 1.5 CNEL within the 65 CNEL contour over no action conditions, then additional notice must be made of those areas that are exposed to an increase of 3 CNEL between the 60 and 65 CNEL contour. This information was presented in Section 4.2 Land Use of the Draft EIS/EIR. Further, the FAA's Air Traffic Division has set in place a rule that if an air traffic action results in an increase of 5 CNEL in the area exposed to 45 CNEL or more, and that if substantial changes are present in the location or loadings on flight tracks, then notice should be made of these cases. The grid analysis results presented in Appendix D, Aircraft Noise Technical Report of the Draft EIS/EIR and Appendix S-C1, Supplemental Aircraft Noise Technical Report of the Supplement to the Draft EIS/EIR also provide extensive supplemental information (DNL, L_{max}, TA, SEL and L_{eq}) for schools, libraries, hospitals churches and other noise sensitive uses relating noise level information in areas beyond the 65 CNEL contour.

To further address single event impacts under CEQA case law, the Supplement to the Draft EIS/EIR includes an analysis of nighttime single event sleep disturbance impacts and daytime speech disruption impacts on schools that extends into areas outside the 65 CNEL contour.

Subtopical Response TR-N-2.4: Discussion of CNEL Penalties

The term "CNEL penalties" refers to the mathematical penalties that are assessed against aircraft single events that occur between the hours of 7 p.m. and 7 a.m. for the computation of the cumulative noise level at any given location in the airport environs. As described in the analogy presented in Sub-topical Response TR-N-2.1, a "penalty" of ten times the single event level (10 additional decibels) is added to every single event that occurs between 10 p.m. and 7 a.m. A "penalty" of three times (4.77 additional decibels) is added to every single event that occurs between 7 p.m. and 10 p.m.

CNEL penalties do not refer to penalties assessed against operations in violation of noise abatement rules.

TR-N-3: Aircraft Flight Procedures

Introduction

A number of comments were received regarding the relationship between aircraft flight procedures, including flight routes, take-off/departure procedures, approach/landing procedures, and the associated noise impacts. Many of the comments requested that LAWA take more control over flight

routes/procedures. This topical response addresses several key aspects of aircraft flight procedures as related to aircraft noise impacts.

As a preface to the following discussion of specific aspects of flight procedures, it is important to note that the airport (LAWA) does not have jurisdiction to enforce any operating procedures on aircraft in flight. This authority is vested solely in the FAA through its responsibility for the safe and efficient operation of the nation's air space. When locally preferred procedures are in place, the FAA will attempt to accommodate the procedures subject to its primary responsibilities.

Discussion

Subtopical Response TR-N-3.1: Flight Routes Relative to Areas of the South Bay

Control of air traffic and changes to the procedures for such control is solely the responsibility of the FAA. Prior to the release of the Draft EIS/EIR, the FAA's Los Angeles Terminal Radar Approach Control facility implemented a series of air traffic route changes that relocated aircraft flight paths in areas south of LAX in response to noise complaints from the South Bay communities. That action was taken independent of the Master Plan actions assessed under the Draft EIS/EIR and falls outside of the scope of this project. To provide additional information to those who commented on the change in procedures, the following information is provided.

To address impacts of overflights in areas of the South Bay, several revised flight procedures were implemented. (1) Among the changes made was a realignment and increase in vertical airspace of the Los Angeles Class B airspace south of the Los Angeles Very High Frequency Omni Range and Tactical Air Navigation (VORTAC) facility. The net result of these changes was a requirement for turbo-prop aircraft departing LAX to the southeast to continue further southeast before turning east to intercept the airway and resulted in a higher shoreline crossing altitude. Since the initial change, additional changes have been made to this route. Turbo-prop aircraft destined for the Oceanside and San Diego areas are now placed on radar vector that keeps the flight path of these aircraft approximately three miles off shore at Palos Verdes. The change to the Class B airspace and resultant flight paths are graphically depicted in Figure 30 of Appendix D of the Draft EIS/EIR;(2) removing a 2000 foot altitude restriction on many LAX departures, allowing aircraft to climb initially to 3,000 and in many cases, immediately to 5,000 feet west of the Airport; (3) a procedural requirement that all aircraft flying the LOOP Departure Procedure cross the shoreline eastbound at the LAX VORTAC ensuring that they will be directly over the airport and not flying over South Bay communities as illustrated in Figure 31 of Appendix D of the Draft EIS/EIR. All aircraft unable to fly the LOOP Departure as procedurally intended are reassigned to the LAX or SEBBY Departure Procedures. Both of these procedures route LAX turbojet departures on a southwesterly heading for ten miles before turning east or southeast bound. This routing keeps aircraft well clear of the Palos Verdes Peninsula until the aircraft has reached an altitude above 10,000 feet. Future enhancements to the Loop Departure will include full RNAV capability providing GPS waypoints to precisely position the aircraft over the LAX VORTAC. This change was originally anticipated to occur in early 2003. Technical difficulties with the development of RNAV procedures has resulted in the FAA suspending publication of new procedures. This suspension of procedures is national in scope and not LAX-specific. There is no projected date at which time such procedure development will resume.

Subtopical Response TR-N-3.2: Early Turns Over Areas North and South of LAX

Numerous commentors raised concerns regarding aircraft making potential early turns over the El Segundo and Marina Del Rey areas prior to reaching the shoreline west of the airport. The informal noise abatement procedures in effect at LAX require all westerly departing aircraft to maintain runway heading until past the shoreline. An early turn, as defined by the communities adjacent to the airport is any turn that is initiated by a departing aircraft prior to the shoreline and results in the aircraft exiting the airport boundary over the steam plant south of the airport or Marina del Rey, north of the airport. Based upon FAA radar records retained by LAWA for 1996 and 2000, the following information is available about early turns to the north or south from the westerly departure runways at LAX. Of the westerly departures from LAX in 1996, approximately 8% (84 on the average annual day) of all departures turned right from the north runways or left from the south runways before reaching the shoreline. Of these 2% were heavy jet aircraft, 6% were lighter jet aircraft, and 92% were propeller aircraft. By 2000, approximately 3% (32 on the average annual day) turn right from the north runways or left from the south runways before reaching the shoreline. Fifty-five percent of the early turns are propeller driven aircraft. The change reflects that

air traffic controllers are achieving better compliance by turbojet aircraft with the shoreline departure procedures.

The elimination of early turns by departing aircraft over El Segundo and Playa Del Rey has been an on-going cooperative effort between LAWA, FAA and the impacted communities. As early as 1996 the FAA developed a new departure procedure for westbound turbo-jet departures. The "Angel 2" departure was the first of a series of highly accurate departure routes developed to capitalize on technology aboard the aircraft, including sophisticated flight management computer systems. This highly accurate departure route allows pilots with properly equipped aircraft to precisely follow the procedure and avoid early turns over El Segundo and Playa del Rey. Figure 27 of Appendix D of the Draft EIS/EIR depicts the ground track that aircraft using this procedure follow. A similar departure procedure for turboprop aircraft was also implemented. This was very similar to the Angel 2 procedure for jet aircraft except that it accommodates the lower performance capability of the turboprop type aircraft. Figure 28 of Appendix D of the Draft EIS/EIR depicts the ground track that turboprop and piston aircraft using this procedure will follow.

Technological developments provided the opportunity to modify the Original Angel 2 Departure to full RNAV capability using the Global Positioning System (GPS) and it became the Holtz Departure providing precise navigational guidance to appropriately equipped aircraft. The Holtz departure has been in use for several years and is used by approximately 25% of southbound turbojet departures.

Future navigational improvements (GPS and RNAV procedures) to further limit early turns over El Segundo and Playa Del Rey will be implemented as they become technologically available and aircraft are equipped to take advantage of their presence on the airport. Each relocated runway proposed by the various development alternatives carries this commitment as a mitigation alternative in the Draft EIS/EIR. LAWA does not have any control over the movement of aircraft.

Subtopical Response TR-N-3.3: Changes in Noise Levels Relative to Changes in Air Traffic

Some commentors contend that more traffic will directly result in more noise. This is not necessarily true. More traffic will certainly mean more noise events, and may mean higher CNEL levels. Over time, the mix of aircraft in use at LAX is expected to transition from retrofit and early generation Stage 3 aircraft to later generation Stage 3 aircraft, many of which meet the proposed Chapter (Stage) 4 noise standards set forth by ICAO. Consequently, while the number of aircraft increases, the reduction of the average noise level generally maintains the overall noise level in equilibrium. While the future contours do in fact shrink in overall size from the environmental baseline, they grow in areas where substantial changes in the airport runway configuration or runway use are proposed.

The composition of the fleet mix is as important to the CNEL as the number of operations. The environmental baseline conditions show the substitution of a number of Stage 2 aircraft that had not yet been phased out of the commercial fleet. Supplemental evaluations of year 2000 noise levels include a number of quieter retrofitted Stage 2 aircraft meet Stage 3 noise level requirements. These aircraft will eventually be removed from the operating fleet (the forecasts indicate by 2015), so the total noise levels at the airport are likely to remain nearly the same or less than in the current years, even though the number of heavy jets increase with the project alternatives.

Subtopical Response TR-N-3.4: Standard Missed Approach Procedure

The standard missed approach procedure on the Instrument Landing System (ILS) Runway 25 approach directs a straight ahead climb to 800 feet mean sea level (MLS) then a left climbing turn to a heading of 190 degrees to an altitude of 2,000 MSL. This procedure is rarely executed, however, as air traffic control personnel will normally direct the aircraft to fly a heading of 250 degrees and climb to 2,000. Air traffic control issues this instruction to avoid over flight of El Segundo. There are rare instances when an arriving aircraft may execute a missed approach closely behind a departing aircraft. When this occurs, air traffic control must establish radar separation between the aircraft immediately. This is accomplished by turning the missed approach aircraft 15 degrees to the left to establish course divergence. In all instances, if air traffic control can establish an approved separation standard other than diverging headings, such as visual separation they will do that rather than turn over the city. Some circumstances, however, require such turns to maintain the safety of both the departing aircraft and the aircraft taking the missed approach.

Subtopical Response TR-N-3.5: Effect of Elevation on Noise Contours

Numerous commentors east of LAX raised concerns regarding altitude and noise of aircraft when overflying residences that are located on higher elevations of ground surface. While the elevation of an area directly under flight paths may result in a slight difference between the modeled noise level and that actually experienced in areas of large differences in elevation, the relative flatness of the land surrounding LAX provides little to no elevation effect.

To address impacts of approach overflights operating at low altitudes on extended downwind routings east of the airport during poor weather or visibility conditions, FAA's Southern California TRACON airspace at Filmore and Ventura west of LAX was increased to provide controllers more room and time to sequence aircraft for approach at high altitudes. Previously, this sequencing happened as airplanes flew past LAX headed east until the controller had a properly sized interval in the west bound flow of aircraft landing at LAX. Because the aircraft need to be at a lower altitude to land, these extended "downwind legs" were happening at 2500 feet above mean sea level (AMSL) and were affecting residents normally outside the areas exposed to noticeable aircraft noise. Figure 29 of Appendix D of the Draft EIS/EIR is a depiction of the ground track that aircraft using this arrival route during poor weather conditions now generally follow as compared to the previous ground track during similar conditions. New Standard Operating Procedures (SOP) were implemented at Southern California TRACON and Los Angeles Air Traffic Control Center (ZLA) during simultaneous, instrument arrivals at LAX. These revised procedures and additional training have provided air traffic controllers with the tools and awareness that are necessary to make use of the new airspace available to make this change effective for the community.

Subtopical Response TR-N-3.6: Use of Intersection Departures

The use of takeoffs initiated at the intersection of a runway and a taxiway, rather than at the end of the runway, would result in an increase of noise is some areas and a decrease in others. As per the LAX Aircraft Noise Abatement Operating Procedures and Restrictions, intersection departures will only be used when they improve the overall efficiency of the traffic flow. The only intersections designated for intersection departures are Taxiways 36U and 8J when they are in west flow. There are no designated intersections for departures during east traffic.

Intersection departures were investigated as a mitigation measure for application to all alternatives, but as reported in the Draft EIS/EIR, Appendix D, there was no net benefit in noise abatement, and the cost was potentially great. Intersection departures were rejected as a mitigation measure because they had the probability of seriously degrading the operating efficiency of the airport and increasing delay times in the north runway complex.

Subtopical Response TR-N-3.7: SNA Departure Procedures

Some commentors suggested that the noise abatement departure procedures in effect at John Wayne Orange County Airport (SNA) should be adopted for use at LAX. Through the 1980s, a variety of noise abatement departure procedures (NADP) were implemented at the request of airport operators to provide noise abatement for their surrounding communities. Most notable among these was the departure profile from John Wayne Airport where a steep climb and power cut back resulted in safety concerns from pilot's using these procedures.

As a result, in the early 1990's the FAA studied a variety of departure procedures at SNA that could be used at all airports and ultimately developed what is now known as Advisory Circular 91-53A. This advisory circular recommended two specific departure profiles, the close-in departure profile and the distant departure profile. The Advisory Circular (AC) outlined acceptable criteria for speed, thrust settings, and airplane configurations in coordination with the appropriate Noise Abatement Departure Procedure (NADP) and flight paths to reduce the impact of departure noise on the surrounding community.

The SNA flight procedure using AC 91-53A was designed specifically for the geography surrounding that airport. At LAX, the current noise policy encourages the use of thrust cutback procedures that are in compliance with FAA's Advisory Circular 91-53A. Given the presence of nearby residential areas immediately east of the airport and their extent to the east, the policy doesn't specify the use of "close-in" or "distant" procedure. During the rare periods of east flow each procedure would provide benefits in some areas with corresponding adverse trade-off's in other areas. Most importantly, however, is the fact

that most departures at LAX are directed to the west over the ocean where thrust cutback procedures have no substantive effect on noise impacts in noise sensitive areas around the airport. Consequently, additional thrust cutback measures are not likely to produce noise benefits at LAX because noise in the area that would most benefit from the procedure is dominated by arrival noise events.

TR-N-4: Noise Mitigation

Introduction

Many comments were received suggesting that the noise abatement actions recommended as mitigation in the Draft EIS/EIR are ineffective or insufficient, and asked for consideration of a stronger mitigation program. This topical response describes the approach to noise mitigation that was used in the Draft EIS/EIR and expanded in the Supplement to the Draft EIS/EIR.

Discussion

Many potential noise abatement actions for the proposed project conditions were reviewed in Appendix D of the Draft EIS/EIR and rejected for a variety of reasons stated in that section of the document. The FAA and CEQA take the approach that the application of mitigation actions for aircraft noise should be tempered by practicality and effectiveness. Also, noise mitigation achieved through aircraft operating procedures is always subject to deviation for reasons of safety. The FAA approach further presumes that mitigation actions are intended to reduce the impacts of proposed project actions on the significantly impacted populations (for federal evaluations, within 65 DNL or CNEL, and then if exposed to increases of 1.5 DNL/CNEL). If additional populations beyond the area delineated by the threshold of significance are benefited by mitigation actions, and the FAA considers such benefits to have merit, such mitigation actions may be adopted but are not required. Until recently, CEQA documents have been prepared using a similar approach.

A recent ruling by a California Court of Appeal in a case filed against the Board of Port Commissioners in Oakland, directs that under CEQA, impacts must be evaluated for single events as well as cumulative noise levels. However, the decision allows the airport sponsor to determine level of significance that should be evaluated for single events. The Supplement to the Draft EIS/EIR for the master plan improvements provides substantial new information about the effects of single events on nighttime awakenings and on school learning impacts. That evaluation includes new mitigation actions associated with single events. See Sections 4.1 and 4.2, and Appendix S-C1 and Technical Report S-1 of the Supplement to the Draft EIS/EIR for further details.

Subtopical Response TR-N-4.1: Additional Mitigation Actions Suggested For Flight Activity

Those who submitted comments on the Draft EIS/EIR suggested a number of methods to further mitigate noise associated with aircraft operations at LAX. Many suggestions were associated with the mitigation of noise impacts for current conditions, the mitigation of noise events now present in areas well below the threshold of significance, or the mitigation of single events perceived to be unacceptably loud. Those impacts are not the result of the proposed project action and, therefore, are beyond the scope of this environmental evaluation.

Other suggestions for mitigation actions included the implementation of curfews, noise budgets, per-event maximums, and other actions that restrict access to the airport by certain types of aircraft, number of users, or time of day. These actions would require the preparation of an F.A.R. Part 161 Access Restriction Study of the benefit-cost ratios of such events, and the approval (not acceptance) of the measure by the FAA. The single event impacts of nighttime noise disclosed in the Supplement to the Draft EIS/EIR suggest the initiation of such a study to restrict eastward departures during the night hours to mitigate nighttime single events that awaken residents to the east of the airport. This measure is identified as Mitigation Measure MM-N-5, Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory (Alternatives A, B, C and D). Implementation of such a restriction would provide noise reduction benefits not only to those who reside within the area of significance established by the airport sponsor, but also all those who reside beyond the threshold of significance and experience like events.

Subtopical Response TR-N-4.2: Berms, Barriers, Urban Forest, Walls Proposed to Interrupt Ground Noise

Ground noise is a particularly irritating concern for those who reside relatively close to the airport, and was the subject of several comments. Its abatement is made difficult and complex by its multiplicity of sources - aircraft on the runway using reverse thrust to brake, aircraft on taxiways leading to and from the runways prior to takeoff and after landing, ground power and auxiliary power units in use while aircraft are parked at the terminal gates or general aviation areas during boarding or on cargo aprons during on and off loading, and aircraft undergoing run-ups during maintenance. In addition to the many locations on the airfield where ground noise occurs, the loudness of these aircraft in the neighboring communities also varies by the direction they are moving (heading) and the power level used to move them (thrust). The variety of individual noise levels that might be produced in a nearby community is nearly as great as that which could be expected of aircraft in flight. The problem of the abatement of ground noise is made more complex because ground noise is a small contributor to the total noise energy associated with the airport when compared to the noise of aircraft in flight. Only in areas immediately adjacent to the runways is ground noise of sufficient levels to contribute significantly to the CNEL levels off the airport, and even then, the noise is the result of aircraft during their takeoff roll or during their use of reverse thrust. Consequently, there is no single appropriate approach to the mitigation of ground noise.

The use of interruptive devices (berms, barriers, noise walls, and urban forests) are effective only when properly placed between the ground noise source and the impacted location, and then they are effective only when the surface elevations are such that the barrier actually interrupts the line of sight between the source and the receiver. Once the line of sight is interrupted, there is a rapidly diminishing rate of return between the height of the barrier and the noise level reduction. The geometrical relationship between the location and height of the source, the location and elevation of the receiver, and the location and elevation of the top of the barrier is complex and varies for every combination of points. The result of these factors is that noise barriers are generally effective only for a narrow area along the shadow side of the barrier (assuming no difference in elevations between the source and the receiver). Also, for receivers exposed to aircraft noise from both ground level and in-flight sources, the effectiveness of the barrier disappears once the in-flight source rises above the elevation of the barrier. Consequently, the use of noise barriers in aircraft applications is generally limited to the reduction of a specific type of noise - such as run-ups or noise from activity on an apron - and then is effective only in nearby sensitive areas.

The various build alternatives indicate that the 65 CNEL contour is affected by ground noise to the north and south of the airport. The ground noise sources causing this effect are takeoff roll, reverse thrust, and in very limited locations ground run-ups. While a lineal barrier along the north or south sides of the airport to abate noise coming from the runway might result in a limited reduction of noise in areas immediately adjacent to the barrier on the side away from the airport, the rising elevation in El Segundo and Westchester defeat the effectiveness of the barrier concept.

The abatement of maintenance run-up noise is incorporated into the noise modeling process through the planned construction of ground run-up facilities in each alternative that will reduce the noise levels of such run-ups by approximately 20 decibels (or one-fourth the amount of perceived noise). Further mitigation of ground noise by interruptive devices is not considered practical or effective in reducing the impacts within the area of significant noise.

Subtopical Response TR-N-4.3: Additional Mitigation Measures

As indicated under Subtopical Response TR-N-4.1, portions of Appendix D and Section 4.1 of the Draft EIS/EIR addressed a wide variety of different potential mitigation actions. Many of these potential actions were found to be ineffective in abating noise or reducing the impacts of noise. However the success of the mitigation of the project is not measured against the number of actions that are implemented, but rather by the effectiveness and practicality of those measures. In the case of noise mitigation at LAX, the most effective and practical mitigation of aircraft noise within the areas of significant impact is achieved through the expansion of the Airport Noise Mitigation Program (ANMP) sound insulation measures to include all residences newly exposed to significant levels of aircraft noise. Other mitigation measures that are in the current airport noise abatement program for existing runways are recommended for continuation or extension to new runways to prevent recession from the effects of the current program. Additional measures are suggested by the Supplement to the Draft EIS/EIR to mitigate single event noise impacts of nighttime awakenings and classroom disruption.

TR-N-5: Nighttime Aircraft Operations

Introduction

Nighttime noise and the activity associated with nighttime aircraft operations to and from LAX were concerns expressed in numerous comments on the Draft EIS/EIR. This topical response responds to questions and comments about the effects of nighttime noise and night operations, and the efforts to control them.

Discussion

Subtopical Response TR-N-5.1: Description of Over-Ocean Procedures

During the majority of the day at LAX aircraft operate in west flow, which means airport conditions are conducive for aircraft to depart to the west over the ocean and to arrive from the east over the city. Between midnight and 6:30 a.m., and winds permitting, Air Traffic Control converts to an over-ocean operations mode whereby both arrivals and departures fly over the ocean. Although this is the preferred method of operation during the late nighttime window, there is no ban on flight operations to the east of the airport. Operational deviations are allowed as defined in Subsection 1.a of the LAX Aircraft Noise Abatement Operating Procedures and Restrictions "Nothing in these procedures shall limit the discretion of either air traffic control or the pilot with respect to the full utilization of the airport facilities in an unusual situation." Furthermore, Section 4 of the same procedures states "In the event ATC determines that existing weather provides for only easterly departure traffic flow, including a tail wind component that exceeds ten knots from the east, ATC shall only permit departures on Runways 6R and 7L." Consequently, deviations from the preferred flow are recognized as acceptable in the event of weather conditions that are inappropriate for westerly departures, and provide both Air traffic Control and the pilot the discretion to operate the airport and the aircraft in the manner they deem to be safest. Further discussion of east flow operations at night is provided in Subtopical Response TR-N-5.2.

Subtopical Response TR-N-5.2: East Flow Operations at Night

At times it is necessary for aircraft to operate to the east during nighttime hours as a result of weather or operational requirements. The instance of east operation for all aircraft (takeoffs and landings) during nighttime hours is usually during the winter months when weather conditions generated by Pacific storms are more common. The percentage of full easterly operations during the nighttime hours is less than two percent of the time. During a recent 18-month period, 82 jets departed to the east when over-ocean procedures were in effect, an average of about one per week. These operations were occasioned by specific wind conditions that precipitated pilot requests to deviate from the noise abatement procedures to ensure safe operation of the aircraft.

As stated in Subtopic response TR-N-5.1 there are no prohibitions against nighttime easterly operations; deviations may be permitted. Westerly departures are preferred during over-ocean flows, but are not required. If east flow operations are operationally necessary at night, arrivals are required to: 1) enter the pattern as directed by air traffic control; 2) fly the base leg for visual approaches at least one mile west of the shoreline; and 3) land on Runways 6R or 7L.

Subtopical Response TR-N-5.3: Night Run-Up Activity

Maintenance run-ups are a necessary part of typical aircraft engine maintenance. During a maintenance run-up, an engine typically is brought up to and maintained at a certain power setting, ranging from idle-power to takeoff-power, depending upon the particular maintenance check being performed. The power setting may be applied from a few seconds to several minutes. The procedure may be repeated several times and potentially could last for 30 to 60 minutes, and go through several engine-run cycles. Although maintenance run-ups occur much less frequently than aircraft departures at LAX, they have the potential to be extremely annoying because they can generate high noise levels (especially high-power run-ups) for long periods of time. In addition, maintenance run-ups often are performed at night when the aircraft are not needed for regularly scheduled service.

The run-up of mounted aircraft engines for maintenance or test purposes in both leased and non-leased areas is prohibited between the hours of 11:00 p.m. and 6:00 a.m. unless waived on a case by case basis by the Executive Director, or his duly authorized representative. Once approved, operators that initiate nighttime ground run-ups at LAX are subjected to following LAX Aircraft Noise Abatement Operating Procedures and Restrictions:

1. The engine(s) will be run in a sound suppression unit that will reduce the sound level at the Airport perimeter to 8PNdb or less above the ambient background level in surrounding residential areas at the time the run-up is conducted;
2. A single engine will not be operated to exceed idle power at each leasehold area;
3. If more than one engine is to be checked, each engine must be checked separately;
4. Auxiliary power units will be operated only for maintenance and preflight checks;
5. When engines are idled during compass checks on the compass rose, tractors will be used to orient aircraft heading; and
6. Idle engine checks and auxiliary power units will be operated at the minimum time required to accomplish the necessary maintenance or pre-flight check.

Maintenance or test running of jet engines not mounted on an aircraft is prohibited unless performed in a test cell of adequate design. The test cell is required to meet noise level criteria at a measurement distance of 250 feet from the center thereof, as follows:

Octave Band	Sound Pressure Level
20-75	85 dB
75-150	79 dB
150-300	73 dB
600-1200	70 dB
1200-2400	68 dB
2400-4800	66 dB
4800-10kc	60 dB

At this time there are six primary locations where aircraft ground run-ups occur. However, the airfield layout and how the airport is operated under the identified alternatives will determine where ground run-ups occur. All alternatives except for the No Action/ No Project Alternative (which is assumed to remain unchanged) show a reduction in ground run-up sites on the airport. Alternative A will have four primary sites, Alternative B will have one primary site, and Alternatives C and D are projected to have two sites by 2015. The plans call for the construction of Ground Run-up Enclosures at each site.

Even though there is a reduction in primary ground run-up sites in four of the five future alternatives, it is assumed that ground run-ups will increase in direct proportion to the increase in aircraft operations volume.

Subtopical Response TR-N-5.4: Relationship of Air Cargo Flights and Night Noise Impacts

Of the daily cargo operations forecast, nighttime cargo operations represent 2.5 percent to 3.1 percent of the total with all easterly departures accounting for three or four flights nightly in the year 2015. Under Alternatives A, B, and C, nighttime cargo operations represent 46% of the total cargo operations. Alternative D, nighttime cargo operations represent 48% of the total cargo operations.

Table 1

Cargo Operations

Alternative Condition	Total Daily Design Day Operations	Total Daily Cargo Operations	% of Total Daily Operations	Nighttime Cargo Operations	Nighttime Cargo% of Total Daily Operations	Total Night East Departures
1996 Baseline	2235	76	3.40%	37	1.70%	0.4
Year 2000	2275	117	5.10%	53	2.30%	0.9
2015 No Action/No Project	2279	117	5.10%	56	2.50%	2.9
2015 Alternative A	2719	157	5.80%	73	2.70%	3.8
2015 Alternative B	2719	157	5.80%	73	2.70%	3.9
2015 Alternative C	2319	157	6.80%	73	3.10%	3.7
2015 Alternative D	2279	117	5.10%	56	2.50%	2.9

Sources: Draft EIS/EIR, January 2001; Supplement to the Draft EIS/EIR, July 2003; Draft LAX Master Plan, November 10, 2000; Draft LAX Master Plan Addendum, July 2003.

While air cargo demand is forecast to grow at approximately 7.8% per year, air cargo operations are only forecast to increase upwards of 3.6% annually depending on the project alternative (please see Section 1, Regional Context of the Master Plan Draft EIS/EIR, which includes air cargo information). The increase in air cargo tonnage is not proportionate to the growth in total daily cargo operations.

The projected increase in the number of easterly departures at night is the result of two factors. The first is the use of a five-knot tailwind assumption for westerly takeoffs - which is more conservative than the ten-knot tailwind component now accepted by virtually all aircraft departing LAX. The second factor is the assumed more frequent request for easterly takeoffs by heavily loaded cargo aircraft bound to Asian destinations - aircraft which need the safer and more advantageous runway slope and length characteristics provided by an easterly takeoff.

TR-N-6: Noise Increase

Introduction

Many comments were received expressing concern that development of the airport would result in increased noise levels, regardless of the alternative under consideration. Other comments expressed the opinion that there is too much noise and that any growth will result in a continuation of that condition. Still others indicated a belief that larger aircraft would result in louder noise levels. This topical response addresses such concerns and opinions. Information regarding noise levels and noise contours can be found in Section 4.1, Section 4.2, Appendix D, Technical Report 1, Land Use, of the Draft EIS/EIR. Additionally, Section 4.1, Section 4.2, Appendix S-C1 and Technical Report S-1 of the Supplement to the Draft EIS/EIR provide data for Alternative D.

Discussion

Subtopical Response TR-N-6.1: Existing and Future Noise Levels

The Draft EIS/EIR and Supplement to the Draft EIS/EIR provides projections of the areas that will experience increases in noise exposure, as well as decreases in noise exposure for each of the future alternative cases. It discloses the impacts associated with each alternative compared to environmental baseline and future no action/no project conditions. The Supplement to the Draft EIS/EIR makes similar comparisons of the future alternatives to 2000 conditions.

As disclosed in the Draft EIS/EIR, the CNEL noise levels in the future years (both 2005 and 2015) are expected to be comparable to the overall noise levels of the current conditions. Changes in the runway use patterns are anticipated between now and 2015 that would result in a shift of heavy aircraft from predominant use of the south runway approach to the north runway approach, resulting in an enlargement of the 65 CNEL contour along the north approach and a shortening of the contour under the

approach to the south runways. A substantial reduction in noise over western El Segundo and western Westchester is forecast for 2015 when compared to environmental baseline conditions, but little changed from year 2000 conditions (see Supplement to the Draft EIS/EIR discussions of noise and land use).

Subtopical Response TR-N-6.2: Relationship Between Traffic Levels and Noise Levels

More traffic will certainly mean more noise events, and may mean higher CNEL levels in some locations, but lower in others. Over time, the mix of aircraft in use at LAX is expected to transition from retrofit and early generation Stage 3 aircraft to later generation Stage 3 aircraft, many of which meet the proposed Chapter (Stage) 4 noise standards set forth by ICAO. Consequently, while the number of aircraft increases, the reduction of the average noise level generally maintains the overall noise level in equilibrium. While the future contours do in fact shrink in overall size from the environmental baseline, they grow in areas where substantial changes in the airport runway configuration or runway use are proposed.

As important to the CNEL as the number of operations is the composition of the fleet mix. The environmental baseline conditions include a number of Stage 2 aircraft that had not yet been phased out of the commercial fleet. Supplemental evaluations of year 2000 noise levels include a number of Stage 2 aircraft retrofitted to meet Stage 3 noise levels. These aircraft will eventually be removed from the operating fleet (the forecasts indicate by 2015), so the total noise levels at the airport are likely to remain nearly the same or less than in the current years, even though the number of heavy jets increases with the project alternatives.

Subtopical Response TR-N-6.3: Relationship Between Aircraft Size and Noise Levels

The amount of noise that an aircraft generates is not always directly related to its size. A 747 aircraft is certainly louder than a single engine propeller aircraft. However a 14,000-pound Lear 25 business jet is louder than a 560,000-pound Boeing 777. Under FAR Part 36 noise rules, the allowable noise level may increase as the weight of the aircraft increases, so all other things being equal, size does play a role in the loudness of the aircraft, but age plays an even greater role.

Many of the newest aircraft have been constructed to meet the ever-increasing requirements for quiet aircraft at airports around the world. Consequently, many of the new large aircraft (777, 747-400, A330, A340, and 767-300) are quieter than their earlier, lighter counterparts. Similarly, in the narrow jet categories of aircraft, the newer versions of aircraft are quieter than the earlier Stage 3 models of similar size. In the future, a greater and greater proportion of the aircraft in use at LAX will come from the newest aircraft types, replacing smaller louder aircraft such as the MD-80, older versions of the 737, the 727's that have been retrofitted to Stage 3 standards, and earlier versions of wide-body jets that will have outlived their usefulness.

At LAX more of the operations will be by wide-body aircraft than is true today, but many of these aircraft will be quieter than the aircraft they are replacing.

TR-N-7: Noise Abatement Measures/Enforcement

Introduction

Los Angeles International Airport has a set of informal noise abatement traffic, flight and runway use procedures in place that are intended to lessen the impacts of aircraft noise on the communities surrounding the airport. The public is generally aware of these rules and their intent, but is generally not aware of the level of ability LAWA has to enforce them. Numerous comments were received during the Draft EIS/EIR comment period that the noise rules now in place should be enforced. Comments that refer to impacts caused by existing noise conditions are outside the scope of the Draft EIS/EIR. This topical response will responds to questions and comments about the enforcement of proposed noise abatement actions on the proposed actions.

The "Aircraft Noise Abatement Operating Procedures and Restrictions" were last updated in November 1999, and were in place during the public comment process. The measures and their introductory material are reproduced in their entirety in the appendix to the Final EIS/EIR.

Discussion

Subtopical Response TR-N-7.1: Enforcement of Noise Rules (Over-Ocean, Early Turns, Stage 2, Cockpit Procedure)

The "noise rules" define a set of preferred operating measures intended to reduce the impacts of aircraft noise on surrounding communities, but set forth no enforcement mechanisms. Some persons submitting comments suggest that because they perceive there to be an absence of enforcement of these rules on existing traffic, they believe there is no assurance that they will be enforced in the future as proposed development is constructed.

The airport does not have jurisdiction to enforce any operating procedures on aircraft in flight. This authority is vested solely in the FAA through its responsibility for the safe and efficient operation of the nation's air space. When locally preferred procedures are in place, the FAA will attempt to accommodate the procedures subject to its primary responsibilities.

Several sections of the noise abatement procedures clearly provide for deviations from the preferred operating procedures by the FAA Air Traffic Control (ATC) personnel when adverse weather conditions require non-preferred measures to be used or to maintain the safe and efficient operation of the airport. Furthermore, the third paragraph of the noise abatement procedures specifically states, "(I)t is not intended that any of the traffic or flight procedures contained herein shall, in any manner, abrogate the authority and responsibility of the pilot in command to assure the safe operation of the aircraft". This statement means that the final authority for the safe operation of the aircraft is always the pilot in charge, and that if the pilot chooses to deviate from a preferred procedure, that deviation must be accommodated. It is not required, however, that other traffic must be inconvenienced or that ongoing traffic flows must be disrupted to immediately grant such requests - the requesting pilot may be required to wait until his/her request may be accommodated by adequate breaks in traffic flows.

Section 4 of the noise abatement procedures addresses over-ocean procedures. Clear guidance is provided to accommodate adverse weather conditions (reduced visibility over the west end of the runways for approaches or winds exceeding ten knots from the east for departures) that results in traffic landing from or taking off to the east during the period between midnight and 6:30 a.m. Further, should a pilot choose to depart to the east for any reason (e.g., the weight of the aircraft requires the better operating conditions provided by the downhill slope of the longest runway from the west to the east), a takeoff may be made in that direction without violating any "rules." Section 2 of the procedures provides that any such "deviation" will be logged and tracked, but no enforcement is in place.

The noise abatement procedures provide guidance for westerly operation departures under Subsections 1.c and 4. Subsection 1.c states that unless specifically instructed otherwise by ATC, pilots of all aircraft departing toward the west shall, in accordance with Subsection 4, maintain runway heading until past the shoreline before commencing any turns. Subsection 4 states that ATC will vector turbojet and four-engine turboprop aircraft straight out, and only in an area bounded by bearing westward from the shoreline of 210 degrees (SSW) and 270 degrees (W) until reaching specified altitudes. Except in an unusual situation, or at the specific direction of ATC, pilots are requested to maintain runway heading until past the shoreline and reaching 4000 feet before making a right turn and 3000 feet before making a left turn. After lift-off, they are to fly straight to shoreline prior to commencing any turns. They are to avoid over-flying communities to the north and south of the airport, unless under the specific direction of ATC to deviate from the established procedures. Twin engine piston, turboprop, and all propeller airplanes under 12,500 pounds are exempt from the altitude restriction, but are subject to the shoreline restriction.

The airport has no authority to enforce any measures restricting operations by Stage 2 aircraft unless such a restriction has been the subject of a Part 161 Airport Access Restriction evaluation that has been reviewed by the FAA for approval. As a practical matter, as a result of the Airport Noise and Capacity Act of 1990, no aircraft weighing more than 75,000 pounds are authorized to operate to and from any airport in the continental United States unless they meet the noise level requirements of FAR Part 36, Stage 3 after the end of 1999. Aircraft under 75,000 pounds are not subject to the Stage 3 limitation; these may include certain older business jet aircraft that do not meet the most stringent noise level limits now in

place. The forecasts of the master plan and subsequent evaluations of noise levels anticipates that Stage 2 business jet aircraft will be removed from the operating fleet before the year 2015 - in the year 2000, only 18 of 2,147 operations on the average annual day were conducted by such aircraft.

The noise abatement procedures encourage or recommend the use of takeoff procedures in accordance with FAA Advisory Circular 91.53A, which calls for the reduction of thrust to no less than climb power levels upon reaching 800 feet altitude. Further, they do not discourage the application of reduced thrust procedures during westerly takeoffs, but do not encourage them during easterly departures. There is no practical method to assure that any specific departure procedure is used in the cockpit, and consequently, no enforcement technique is appropriate to this measure.

Subtopical Response TR-N-7.2: Responsibility for Enforcement of Noise Abatement Rules

For reasons described in Subtopical Response TR-N-7.1, LAWA's involvement in enforcement of the noise rules is limited in most cases to tracking, recording, advising, and persuasion. Only in certain cases does the airport have the unrestricted authority to enforce those rules. The LAWA Environmental Management Bureau is responsible for the tracking and logging of deviations from the runway use and traffic and flight procedures, detailed in Subsections 3 and 4 respectively, of the noise abatement procedures. The LAWA Airport Noise Complaint Response Office (ANCRO) is responsible for receiving and recording all reported and observed deviations from Subsections 5, 6, and 7. Subsections 5, 6 and 7 provide for greater control of activity by LAWA than is allowed in the management of measures detailed by Subsections 3 and 4. These latter subsections detail noise abatement actions for helicopter operation, ground maintenance run-ups, and taxi operations in the Imperial Terminal. All users of helicopters at LAX are required to have a valid Letter of Agreement with LAWA detailing agreed upon operating procedures and restrictions, enforceable through renewal requirements. The Airfield Operations Section of LAWA may stop activity that is in violation of the noise abatement procedures for maintenance run-ups and Imperial Terminal aircraft movement.

Subtopical Response TR-N-7.3: Compliance With The Instrument Departure Procedures

Some persons who submitted comments requested enforcement of compliance with the Instrument Departure procedures from LAX. The noise abatement procedures outline preferred instrument procedures for takeoffs in Subsection 4. These procedures call for aircraft to fly beyond the shoreline prior to the initiation of turns, and the maintenance of their assigned heading until reaching 3,000 feet before turning left, or 4,000 feet before turning right. These procedures are intended for all turbojet and four-engine piston propeller aircraft. Aircraft under 12,500 pounds are exempted only from the altitude restrictions, but must comply with the requirement to pass the shoreline before initiating turns. In all cases, ATC may have aircraft deviate from these procedures for reasons of safety or operational efficiency.

A review of the operational statistics used to compute the noise contours for the year 2000 indicates that approximately 2% of westerly takeoffs (1.5% of jet and 2.5% of prop), or about 19 flights daily, turned south immediately after reaching the west end of Runways 25R/L, and that approximately 1.3% of westerly takeoffs (0.4% of jet and 3.8% of prop) turned north immediately after reaching the west end of Runways 24R/L. The great majority of these turns were 15-degree turns from centerline and may be located there to provide air traffic separation with preceding or subsequent departures. These are the flights that might be termed as early turns from the runways and deviations from the instrument departure procedures. Because aircraft drift from runway centerlines during takeoff, it is possible that some flights may in fact be following the instrument departure procedures and still fly over neighborhoods north and south of the airport. Part of the plans for the airport include the development and implementation of RNAV departure procedures from each runway that will provide better course guidance for westerly departures, better assuring passage beyond the shoreline before the initiation of turns.

Subtopical Response TR-N-7.4: Exceptions to The Noise Rules

Blanket exceptions to the operating measures set forth by the noise abatement procedures include deviations allowed for ATC management of safety and operational efficiency, for adverse weather conditions and for pilot selection of runway based on safety considerations. In a number of other cases,

procedures are characterized as preferred or seek to maximize use of one measure over an alternative. In such cases, use of another procedure is a foregone conclusion, but the intent is to assure that the better procedure for noise abatement is considered and used to the extent practicable, within considerations of safety and operating efficiency. Specific exemptions provided within the procedures are:

- Twin engine piston and turboprop and all propeller airplanes under 12,500 pounds are exempt from the altitude restriction for westerly departures, but not exempt from reaching the shoreline before initiating turns from runway heading.
- All helicopter training operations are prohibited, such as: touch-and-go, stop-and-go, and low approach, except for FAA certification flights.
- The run-up of mounted aircraft engines for maintenance or test purposes on both leased and non-leased areas is prohibited between the hours of 2300-0600 unless waived in an individual case by the Executive Director, or their duly authorized representative
- Engines Not Mounted on Aircraft. Maintenance or test running of jet engines not mounted on an aircraft is prohibited unless performed in a test cell of adequate design

Subtopical Response TR-N-7.5: Fines for Violations of Noise Abatement Procedures

There is no fine structure for deviations from the noise abatement procedures, nor is one anticipated for implementation, owing to there normally being good reasons for such deviations.

Subtopical Response TR-N-7.6: ANCA Phase-Out of Stage 2 Aircraft

A number of persons commented on the phase-out of Stage 2 aircraft and challenged the continued use of DC-9, B-727, and B-737-200 passenger aircraft, as well as smaller Stage 2 business jet aircraft in the operating fleet.

Under the requirements of the Airport Noise and Capacity Act of 1990, all civilian jet aircraft with weights greater than 75,000 pounds were required to meet the noise level standards of FAR Part 36, Stage 3 by December 31, 1999 if they operated within the 48 contiguous United States, unless a waiver was received for continued operation. The FAA did not issue any waivers for continued operation beyond the phase-out date. Aircraft that weighed less than 75,000 pounds, including virtually all business jets, were not required to meet the Stage 3 phase-out requirements. In 2000, only about 1% of all operations at LAX are conducted by Stage 2 aircraft. By 2015, the master plan forecasts project that all Stage 2 aircraft will be removed from the fleet at the airport.

Operators of aircraft that were required to meet the Stage 3 noise level standards achieved those levels through three techniques. A portion of the older, louder aircraft that did not meet the required noise levels was sold to carriers for use outside the contiguous United States or scrapped. Some of the newer version of the non-compliant fleet were "retrofitted" with engine modifications or re-engined with new engines that allowed the aircraft to meet the quieter noise standards and recertified as Stage 3 aircraft. A final, and much smaller, group of older, louder aircraft were recertified at lighter operating weights and power settings that met Stage 3 requirements. The master plan forecasts project that, by 2015, all retrofitted Stage 3 aircraft will be removed from the fleet at LAX

The noise contour input files for the year 2000 indicate that of the fleet in use at LAX at that time, 65% of all operations were conducted with jet aircraft weighing more than 75,000 pounds that had been originally manufactured to meet Stage 3 noise criteria, and 26% were made by military jet, civilian turboprop, and piston propeller aircraft not subject to Stage 3 criteria. Of the remaining operations, 7% were conducted with aircraft that had been modified from Stage 2 to meet Stage 3 noise standards. The remaining 2% were by civilian jet aircraft weighing less than 75,000 pounds, of which 1.2% were originally manufactured to meet Stage 3 noise standards and the 0.8% were Stage 2 aircraft.

TR-N-8: Noise-Based Vibration

Introduction

Aircraft-generated vibration and its effects were noted in several comments on the Draft EIS/EIR. This topical response addresses questions and comments about aircraft vibrations and potential physical damage to residences due to noise vibrations.

Discussion

Subtopical Response TR-N-8.1: Relationship Between Aircraft Noise and Structural Vibration

Consistent with the findings of the studies discussed below, the vibrations created by low-frequency noise from aircraft operations at LAX are not of significant magnitude to cause physical structural damage in standard residential construction.

Aircraft-generated vibrations are typically caused by low frequency noise energy produced by both engine and airframe sources. Low frequency noise and its energy impacts were studied thoroughly in the mid-1970's with the inception of SST Concorde operations. This aircraft is currently the loudest certified aircraft by ICAO standards operating in the United States and is prohibited from operating into LAX as a result of its loudness.[63] The effects of low frequency energy and vibration on residential structures were found to be negligible.

Subsequent studies revealed that low frequency vibration from the Concorde causes little to no structural damage. Analyses conducted of five historic sites near the proposed subsonic flight path of the Concorde aircraft revealed breakage probabilities from noise-induced vibration for windows, brick chimneys, a stone bridge, and a plaster ceiling to be less than .001 percent per year.[64] It was found that exposure to normal weather (such as thunder or wind loads) produces a higher probability of breakage than vibrations from the Concorde.

At Sully Plantation, Virginia, the test location nearest the Concorde flight path and therefore most likely to sustain vibration damage, calculations were based on a sound level of 104 dBA for each overflight, or an effective pressure of 0.313 psf. Estimates of the probability of breakage from one Concorde overflight are about one in every million years. The Concorde's contribution to the cumulative damage of a house in the neighborhood of Kennedy Airport was found to be insignificant. Everyday vibrations from wind and household activities were greater than those caused by aircraft in the worst conditions around normal airports.[65]

Peak noise level computations for each of the scenarios evaluated for the Draft EIR/EIS and Supplement to the Draft EIS/EIR indicate that equivalent levels are achieved at a limited number of locations for both environmental baseline and year 2000 conditions, but by 2015, none of the grid locations assessed around the airport are exposed to noise above 102.8 dBA. Based upon the evaluations at Sully Plantation, the likelihood of breakage caused by aircraft at LAX is less than the one chance in every million years determined for Concorde flights there.

In April 2002, the Federal Interagency Committee on Aircraft Noise (FICAN) released a report "FICAN on the Findings of the Minneapolis-St. Paul International Airport (MSP) Low-Frequency Noise (LFN) Expert Panel," whereby, the Committee agreed with the findings of the MSP LFN Expert Panel Consensus that:

FICAN concurs with the findings that low-frequency noise from civil aircraft will not pose a public health risk, risk of structural damage, or an increase in indoor speech interference. These findings are consistent with the extensive Federal research on the civil supersonic transport (SST), which would produce much higher levels of low-frequency noise than the subsonic aircraft operating at MSP. The

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63 City of Los Angeles, Board of Airport Commissioners, Resolution No. 5456, October 22, 1969.

64 Hershey, Robert L., Russ J. Kevala, and Sharon L. Burns. *Analysis of the Effect of Concorde Aircraft Noise on Historic Structures*. Rep. No. FAA-RD-75-118, July 1975.

65 Federal Aviation Administration, Aviation Noise Effects, March 1985.

issue of low-frequency noise and its impact on structures and people was explored in detail as part of the environmental assessment of the introduction of Concorde supersonic transport operations into the United States. Potential impacts were found to be negligible. Field studies found that the noise-induced vibrations as a result of Concorde overflights cause little or no structural damage. In addition, the Concorde sound pressure levels at low frequencies were found to be well below the EPA threshold for potential health impact.

Subtopical Response TR-N-8.2: Other Vibration Effects Like Rattling and Shaking

The long sound waves from low frequency (propeller, engine exhaust etc.) noise cause the associated vibrations and rumbling symptoms that are typically experienced by residents living near airports. As discussed in Subtopical Response TR-N-8.1, these vibrations are not stressful to residential structures and create less of a risk of damage than typical household activities and wind gusts. This rattling and shaking may be irritating, but no scientific research is available that correlates the amount of low frequency aircraft noise to these lesser effects of vibration. At this time there is little that can be done to reduce low frequency noise. However, the scientific community, including NASA and FICAN (Federal Interagency Committee on Aircraft Noise), has acknowledged the impact of low-frequency noise on the surrounding communities and are working with engine manufacturers in an attempt to reduce low frequency noise. Many improvements have been made in reducing aircraft noise in general and the reduction of low frequency noise is a topic that will be addressed in additional future evaluations by the scientific community.

TR-PO-1: Public Hearing Process

Introduction

This topical response provides further clarification and updated information regarding the public hearing process and environmental justice workshops conducted on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR.

Discussion

NEPA Public Involvement Objectives and Guidelines

The main objective of the National Environmental Policy Act (NEPA) is to create a better decision-making process for implementing federally funded projects and programs that could adversely impact the environment. NEPA requires federal agencies to incorporate environmental considerations in their planning and decision-making process, and requires the use of a systematic and interdisciplinary approach.

Public Hearings are an essential mechanism for public input into the decision-making process. Public Hearings under NEPA are to be conducted per federal guidelines. Council on Environmental Quality (CEQ) regulations require agencies to hold or sponsor public hearings whenever appropriate or required by statute.

The purpose of a public hearing on a proposed project is twofold. First, the hearing is intended to provide interested members of the public with relevant information through the workshop portion of the public meetings. Second, and most importantly, the hearings afford members of the public an opportunity to present their views, data, and comments on the EIR/EIS document. The two foregoing objectives dictate the format for conducting public hearings.

If a proposed action requires that a hearing be held, the public must be advised of the proposed hearing via the Federal Register, at least 30 days before the scheduled hearing. This Federal Register notice is in addition to publication in local newspapers. Per Executive Order 12898, wherever practicable and appropriate, public notice should be translated for non- or limited-English speaking populations. As cited in FAA Order 5050.4A, Airport Environmental Handbook, and 40 CFR 1500-1508 (The Council on Environmental Quality Regulations), notification should include:

1. Date, time, phone number of the hearing officer.
2. The request that speakers submit in writing their intention to participate.

3. Any limitation on the length of oral statements.
4. Suggestion that technical statements or statements of considerable length be submitted in writing.
5. Summary of the proposed action.
6. The findings contained in the DEIS.
7. Offices/location where the DEIS is available for examination.
8. The request that any individual or groups with special needs, such as accessibility/transportation, need for foreign language interpretation, etc. notify the agency conducting the hearing.

A public hearing should be held at a time and place and in an area readily accessible to civilian organizations and individuals interested in the proposed action. Hearings are generally preferable in a civilian facility such as a high school auditorium on a weekday evening when such groups can reasonably be expected to attend. The purpose of the public hearing is to obtain views, data, and comments on the EIR/EIS document with a flow of information from the public to the FAA and LAWA.

CEQA Public Involvement Objectives and Guidelines

Public participation is an essential part of the CEQA process. Each public agency is encouraged to include provisions in its CEQA procedures for wide public involvement, formal and informal, consistent with its existing activities and procedures, in order to receive and evaluate public reactions to environmental issues related to the agency's activities. Such procedures should include, whenever possible, making environmental information available in electronic format on the Internet, on a web site maintained or utilized by the public agency.

The California Public Resources Code declares the importance of public participation as an element of the CEQA process. It also encourages agencies to provide notice on the Internet when possible. Internet posting offers the public yet another means of being informed about a project. Further, the California Supreme Court has held that the public holds a "privileged position" in the CEQA process "based on a belief that citizens can make important contributions to environmental protection and on notions of democratic decision making" as determined in *Concerned Citizens of Costa Mesa, Inc. v. 32nd Dist. Agric. Ass'n* (1986) 42 Cal.3d 929, 936.

Section 15202 of the CEQA Guidelines does not require formal hearings at any stage of the environmental review process. Public comments may be restricted to written communication. If an agency provides a public hearing on its decision to carry out or approve a project, the agency should include environmental review as one of the subjects for the hearing. A public hearing on the environmental impacts of a project should usually be held when the Lead Agency determines it would facilitate the purposes and goals of CEQA to do so. The hearing may be held in conjunction with and as a part of normal planning activities.

If a public hearing is held, the draft EIR should be used as a basis for discussion at the public hearing. The hearing may be held at a place where public hearings are regularly conducted by the Lead Agency or at another location expected to be convenient to the public. Notice of all public hearings shall be given in a timely manner. This notice may be given in the same form and time as notice for other regularly conducted public hearings of the public agency. To the extent that the public agency maintains an Internet web site, notice of all public hearings should be made available in electronic format on that site. A public agency may include, in its implementing procedures, procedures for the conducting of public hearings pursuant to this section. The procedures may adopt existing notice and hearing requirements of the public agency for regularly conducted legislative, planning, and other activities. There is no requirement for a public agency to conduct a public hearing in connection with its review of an EIR prepared by another public agency.

Regardless of whether or not a public hearing is held, section 15203 requires adequate time for review and comment. The Lead Agency shall provide adequate time for other public agencies and members of the public to review and comment on a draft EIR that it has prepared. Public agencies may establish time periods for review and shall notify the public and reviewing agencies of the time for receipt of comments on EIRs. These time periods shall be consistent with applicable statutes, the State CEQA Guidelines,

and applicable Clearinghouse review periods. A review period for an EIR does not require a halt in other planning or evaluation activities related to a project. Planning should continue in conjunction with environmental evaluation.

State and local agencies are required to cooperate with federal agencies to the fullest extent possible to reduce duplication between the California Environmental Quality Act and the National Environmental Policy Act. As provided in CEQA Guidelines, § 15226, such cooperation should, to the fullest extent possible, include:

(a) Joint planning processes,

(b) Joint environmental research and studies,

(c) Joint public hearings,

(d) Joint environmental documents.

This requirement mirrors a section contained in the federal NEPA regulations encouraging joint activities. The President's Council on Environmental Quality urged states with environmental review statutes to include such a section in their Guidelines in order to promote cooperation between state and federal agencies (40 C.F.R. 1506.2).

FAA/LAWA Public Hearing and Noticing Determination

The LAX Master Plan process has been designed to be a careful and thoughtful analysis that reflects the concerns of the public and their representatives. As the Master Plan evolves, FAA and LAWA has continued to invite and encourage public discussion, input, and analysis. The FAA and LAWA are committed to fostering the broadest possible participation process in order to balance environmental and neighborhood concerns with the need to meet the growing demand for air passenger and cargo transportation in the region. The FAA and LAWA determined early on in the process to conduct several workshops and public hearings to disseminate information and receive public input. In addition, an Internet web site, http://www.laxmasterplan.org/, has been established to assist in disseminating information and receiving input. All statutory requirements for noticing and public hearings were met and exceeded in the public outreach component of the Draft EIS/EIR and the Supplement to the Draft EIS/EIR as described below.

Draft EIS/EIR Public Hearings

In 2001, LAWA and FAA conducted the following nine Public Hearings in order to provide interested parties the opportunity to voice their comments on the Draft EIS/EIR and the Draft LAX Master Plan. Each public hearing was preceded by a one-hour workshop to describe the project and alternatives. Three of the hearings were held at the same time, presenting identical information in order to allow the public easy access to at least one of the hearings and to be able to accommodate a larger volume of public input with three venues. There were six subsequent hearings with the same public information/public input format. These Public Hearings included:

Date	Location
Saturday, June 9, 2001 12:00PM - 7:00PM	Furama Hotel 8601 Lincoln Blvd Los Angeles, CA 90045
Saturday, June 9, 2001 12:00PM - 7:00PM	The Pavilion at Hollywood Park 3883 W. Century Blvd Inglewood, CA 90303
Saturday, June 9, 2001 12:00PM - 7:00PM	Manhattan Beach Marriott 1400 Parkview Avenue Manhattan Beach, CA 90266
Tuesday, October 30, 2001 5:00PM - 9:00PM	Luminarias Restaurant 3500 Ramona Boulevard Monterey Park, CA 91765
Thursday, November 1, 2001 5:00PM - 9:00PM	Peck Park 560 N. Western Avenue San Pedro, CA 90732
Saturday, November 3, 2001 9:00AM - 1:00PM	Los Angeles High School 4650 W. Olympic Boulevard Los Angeles, CA 90019

Monday, November 5, 2001 5:00PM - 9:00PM	Palmdale Regional Airport 41000 20th Street East Palmdale, CA 93550
Wednesday, November 7, 2001 5:00PM - 9:00PM	Ontario Airport Marriott 2200 E. Holt Boulevard Ontario, CA 91761
Thursday, November 8, 2001 5:00PM - 9:00PM	Airtel Plaza Hotel 7277 Valjean Avenue Van Nuys, CA 91406

Draft EIS/EIR Public Workshop Exhibits

During the three Public Workshops, held on Saturday, June 9, 2001 from 12:00 noon to 4:00 pm and at subsequent workshops, the public was invited to review display boards and other media that describe the LAX Master Plan, its benefits, its environmental impacts, and proposed mitigation. The following exhibits were displayed during the Workshops:

Master Plan Process

- Regional Context
- Purpose & Need
- Alternative Concepts - 3 Boards
  - Alternative A
  - Alternative B
  - Alternative C
- EIS/EIR Flow Chart
- FAA/LAWA/Airlines Roles
- Funding Sources

Ground Transportation

- Ground Transportation Project Design Features
- Baseline Off-Airport Road Congestion
- Baseline Airport Traffic vs. Non-Airport Traffic
- Difference in Airport Traffic with/without Project
- LAX Expressway

Air Quality/Human Health

- Health Risk Plumes
- LAX Master Plan AQ Impact Analysis
- Nitrogen Dioxide Contour
- Carbon Monoxide Contour
- MP Improvements are Designed to Address Local Air Quality
- LAX MP Will Move Emissions to the West

Noise/Land Use

- Aircraft Noise Exposure
- Comparative Noise Levels of Various Aircraft
- Noise Mitigation by Design

Socioeconomic/Environmental Justice/Jobs

- 2015 Job Impacts
- Current LAWA Initiatives

Other

- Energy
- Biology

Supplement to the Draft EIS/EIR Public Hearings

Nine Public Hearings were conducted jointly by LAWA and the FAA to provide the community the opportunity to voice their comments on the Supplement to the Draft EIS/EIR and Draft Master Plan Addendum. At each location, the Public Hearings began with a one-hour workshop where attendees were able to watch a video on the Master Plan, review exhibits, and talk to experts about the major elements of the Plan. Following the workshop, the public was invited to speak. Those who could not attend the Public Hearings could submit their views in writing to the FAA or LAWA. All official comments had to be received by 5:00PM, Pacific Daylight Time, Monday, August 25, 2003. However, LAWA requested that the public review period be extended for an additional 75 days. The FAA accepted this request and the closing date was set at November 7, 2003. Further information is listed under http://www.laxmasterplan.org/ publicinput/main.html.

On July 2, 2003, LAWA placed the Notice of Availability in the Los Angeles Times. LAWA also placed an abbreviated version in the following community papers, providing notice of the upcoming public hearings:

1. Antelope Valley Press
2. The Daily Breeze
3. Los Angeles Sentinel
4. Los Angeles Business Journal
5. Daily News Los Angeles
6. Inland Valley Daily Bulletin (Ontario)
7. The Wave
8. Argonaut (Westchester/South Bay)
9. El Segundo Herald
10. Riverside Press Enterprise
11. San Gabriel Valley Tribune

In addition, the original Notice of Availability was posted at the LAX Administration building. From August 11, 2003 through August 23,2003, the FAA and LAWA held nine public hearings to afford interested parties the opportunity to provide comments on the Supplemental Draft EIR/EIS (and subsequently held three additional public hearings, for a total of 12 hearings - see below) as follows:

Date	Location
Monday, August 11, 2003 5:00 PM - 9:00 PM	Radisson Plaza Hotel 3515 Wilshire Blvd., Los Angeles
Tuesday, August 12, 2003 5:00 PM - 9:00 PM	Ontario Airport Marriott 2200 E. Holt Blvd., Ontario
Wednesday, August 13, 2003 5:00 PM - 9:00 PM	Luminarias Restaurant 3500 Ramona Blvd., Monterey Park
Thursday, August 14, 2003 5:00 PM - 9:00 PM	Peck Park 560 N. Western Avenue, San Pedro
Monday, August 18, 2003 5:00 PM - 9:00 PM	Hollywood Park Pavilion 3883 West Century Blvd., Inglewood
Tuesday, August 19, 2003 6:00 PM - 10:00 PM	Airtel Plaza Hotel 7277 Valjean Avenue, Van Nuys
Wednesday, August 20, 2003 5:00 PM - 9:00 PM	Joslyn Community Center 1601 Valley Drive, Manhattan Beach
Thursday, August 21, 2003 5:00 PM - 9:00 PM	Palmdale Regional Airport 41000 20th Street East, Palmdale
Saturday, August 23, 2003 9:00 AM - 1:00 PM	Furama Hotel 8601 Lincoln Blvd., Los Angeles

With LAWA's request for a 75-day extension to the public review period for the Supplement to the Draft EIS/EIR approved by the FAA, three (3) additional public hearings were held to afford additional opportunity to provide comment. On September 13, 2003, LAWA placed the Notice of Additional Public Hearings (3 new hearings) in the Los Angeles Times and an abbreviated version in the community papers listed above. A revised Notice of Availability was posted at the LAX Administration Building.

Each of the additional public hearings included a one-hour workshop to describe the proposed project and alternatives. Following the workshop portion of the meetings, the public was invited to speak at each location. All exhibits and information available at prior meetings were available to the public at these meetings. Written comments could have been submitted at any time during the hearings or prior to the expiration of the public review period which ended on November 7, 2003.

Date	Location
Monday, October 20, 2003 5:00 PM - 9:00 PM	Doubletree Hotel International Ballroom 888 Montebello Boulevard Rosemead, CA 91770
Wednesday, October 22, 2003 5:00 PM - 9:00 PM	Granada Hills Charter High School Highlander Hall 10535 Zelzah Avenue Granada Hills, CA 91344
Saturday, October 25, 2003 9:00 AM - 1:00 PM	EPIC Center/Olympic Swim Stadium Community Hall 3980 S. Menlo Avenue Los Angeles, CA 90037

Environmental Justice Workshops

In addition, LAWA conducted four Environmental Justice Workshops during review of the Draft EIS/EIR in accordance with the spirit and intent of Executive Order 12898 and State of California enacted legislation. These documents direct that federal agencies and state agencies, respectively, identify and address disproportionately high and adverse human health or environmental effects of its programs, polices and activities on minority populations and low-income populations. Further, where the aforementioned conditions exist, these agencies shall:

- Minimize or avoid adverse health, environmental, social, and economic effects on minority an/or low-income communities.
- When unavoidable impacts exist, the agencies shall:
- Ensure participation of all affected minority and low -income communities in the project-decision making process.
- Ensure the timely delivery of benefits to minority and low -income populations affected by the project.

In June 2000, LAWA established an Environmental Justice Task Force to help LAWA develop policy and guidelines to address the issues related to environmental justice. One of the important outcomes of this initiative, were the Environmental Justice Workshops. During these workshops, members of the affected communities have opportunities to:

- Learn more about the master plan and its projected impacts on their communities;
- Express their concerns to decision makers;
- Provide official comments on the master plan and EIS/EIR; and
- Provide their ideas on how their communities can benefit from the proposed project.

During the review and comment period for the Draft EIS/EIR, LAWA conducted the following Environmental Justice Workshops:

Date	Location
Saturday, May 19, 2001	Inglewood High School Inglewood, California
Saturday, June 16, 2001	Lennox Middle School Lennox Community Los Angeles County, California
Saturday, July 14, 2001	Jesse Owens Park Gymnasium Los Angeles, California
Wednesday, August 15, 2001	Morningside High School Inglewood, California

During the review and comment period for the Supplement to the Draft EIS/EIR, LAWA publicized upcoming environmental justice meetings as follows:

Newspapers	The Wave	Published 7/17/03 Size 2" X 4"
	The Watts Times	Published 7/17/03 Size 4" X 4"
	The Los Angeles Sentinal	Published 7/24/03 Size 4" X 4"
	La Opinion	Published 7/25/03 Size 6" X 6"
Door-to-Door Flyers	15,000 Distributed in south LA and Lennox	Distributed 7/22/03 & 7/31/03
Radio Spot	Jackie Stevens Community Calendar	Aired 7/20/03

The following three Environmental Justice Workshops were held during the review and public comment period on the Supplement to the Draft EIS/EIR:

Date	Location
Wednesday, July 23, 2003 Anytime Between 5:00 PM and 8:00 PM	Jesse Owens Park Gymnasium 9651 S. Western Avenue Los Angeles, California 90047
Saturday, July 27, 2003 Anytime Between 10:00 AM and 1:00 PM	Lennox Middle School Gymnasium 11033 Buford Avenue Lennox, California 90304
Saturday, August 2, 2003 Anytime Between 10:00 AM and 1:00 PM	Inglewood High School Cafeteria 231 S. Grivillea Street Inglewood, California 90303

TR-RBR-1: Residential Acquisition/Relocation

Introduction

This topical response has been prepared to address numerous comments received on the Draft EIS/EIR and Supplement to the Draft EIS/EIR that focus on the acquisition of residential properties required for implementation of the LAX Master Plan alternatives and the resulting effects on the communities surrounding the airport. The objective of this response is to draw from the analyses in the Draft EIS/EIR and the Supplement to the Draft EIS/EIR, as well as to synthesize information contained within the Preliminary Property Acquisition and Relocation Plan (referred to as the Preliminary Relocation Plan or the Proposed Relocation Plan and provided/updated in Chapters 2.7 and 2.8 of the Draft LAX Master Plan Addendum), in order to more specifically address issues shown to be of high interest to the public.

Discussion

A review of comments received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR from residents and others interested in impacts related to residential acquisition and relocation highlighted the following as key areas of concern:

- Fair compensation for acquisition

- Economic hardship (loss of investments, increased taxes, etc.)
- Availability of comparable housing
- Affordable housing

The discussion that follows restates/clarifies the relocation impacts of each of the Master Plan build alternatives; summarizes applicable regulatory requirements; presents updated baseline information; describes LAWA's proposed plan and procedures for acquisition and relocation; addresses concerns over fair compensation and economic hardship issues; and discusses affordable housing issues and policies.

Impacts Associated with the LAX Master Plan Alternatives/Updated Baseline Data

Impacts relating to residential acquisition were analyzed in Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR. As discussed therein, Master Plan Alternatives A, B, and C each involve the acquisition of 84 dwelling units, including 57 single-family and 27 multi-family units located east of Sepulveda Boulevard and north of Will Rogers Street. The affected properties were illustrated in Figure 3-8, Alternative A Proposed Property Acquisition Areas; Figure 3-12, Alternative B Proposed Property Acquisition Areas; and Figure 3-16, Alternative C Proposed Property Acquisition Areas, within Chapter 3, *Alternatives*, of the Draft EIS/EIR. The property addresses were also listed in Table A-3, Parcel Detail of Acquisition Areas Alternative A; Table B-3, Summary Statistics of Acquisition Areas Alternative B; and Table C-3, Summary Statistics of Acquisition Areas Alternative C, in Appendix P to Chapter V of the Master Plan, *Preliminary Property Acquisition and Relocation Plan.* The 84 dwelling units are estimated to house approximately 172 residents, based on an average of 2.54 persons per single-family unit per 1990 U.S. Census of Population and Housing (Census) data for census tract (CT) 2780 (in which the affected units are located), and assuming 1 person per multi-family unit within the former motel to be acquired. The estimated 1999 market values of the single-family homes generally range from $200,000 to $375,000 with an average estimated market value of $230,000. Median rental rates in the area are $876.

For comparative purposes, updated baseline data is provided herein as well as in the Supplement to the Draft EIS/EIR, published in July 2003. The 2000 Census, which became available following publication of the Draft EIS/EIR, indicated that the average household size in CT 2780 decreased slightly to 2.49 persons per unit. Therefore, based on the 2000 U.S. Census, the 84 dwelling units proposed for acquisition under Alternatives A, B, and C would displace an estimated population of 169 residents. Housing values have risen dramatically since publication of the Draft EIS/EIR, with Westchester exhibiting an estimated 2003 average market value for single-family homes of $580,000 and rental rates ranging from approximately $700 to $2,700.[66]

Following publication of the Draft EIS/EIR, a fourth build alternative, Alternative D - Enhanced Safety and Security Plan, was proposed and analyzed within the Supplement to the Draft EIS/EIR. In contrast to the other build alternatives, no residential acquisition is proposed under Alternative D. However, if the associated surface transportation Mitigation Measure MM-ST-13, Create A New Interchange at I-405 and Lennox Boulevard (Alternative D), is carried forward, it is possible that 9 to 12 homes may need to be acquired as part of Alternative D.[67] In the event that Mitigation Measure MM-ST-13 is implemented and residential acquisition is necessary, relocation would be addressed through a Residential and Business Relocation Program similar to that described in Master Plan Commitment RBR-1, Residential and Business Relocation Program (Alternatives A, B, C, and D), of the Supplement to the Draft EIS/EIR (discussed below), in accordance with state and federal requirements.

Separate from the residential acquisition necessary for Master Plan implementation, existing residential acquisition activities are currently underway within the Belford and Manchester Square areas near the airport, in support of LAWA's Aircraft Noise Mitigation Program (ANMP).[68] From commencement in 1998

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66 Average single-family home market value based on a listing of 24 two-, three-, and four-bedroom homes for sale within Westchester as of July 14, 2003, as indicated by The Combined L.A./Westside Multiple Listing Service, Inc., www.themls.com. Rental rates based on a sampling of rental listings in Westchester on July 14, 2003, as indicated by several rental agencies (www.westsiderentals.com, www.bestrents.com, www.springstreet.com). While the census tract in which acquisition will occur, CT 2780, encompasses other neighborhoods besides Westchester, all of the acquisition proposed under Alternatives A, B, and C would occur within Westchester.

67 Refer to Section 4.3.2, *Off-Airport Surface Transportation* (subsection 4.3.2.9.1), for further discussion.

68 Under the ANMP, LAWA will acquire the Belford and Manchester Square areas east of and adjacent to the airport. These

through October 31, 2002, the existing activities resulted in the acquisition of a total of 782 single- and multi-family dwelling units in the Manchester Square area and 322 multi-family dwelling units in the Belford area. Of these, 75 single-family structures in Manchester Square have been demolished and 10 residential structures have been moved via LAWA's Move On Housing Program.[69] The estimated completion timeframe for property acquisition under this program is during calendar year 2005. However, should the ANMP land acquisition for the Belford and Manchester Square areas not be completed by the time the Master Plan is approved, the City of Los Angeles and LAWA will begin to explore the most appropriate and practical measures (e.g., voluntary acquisition, leasing, and/or public condemnation) to ensure that the designated areas are vacated consistent with the Construction Sequencing Plan.[70] These measures would be available for all build alternatives to pursue any needed acquisition that cannot be obtained through negotiations.

Regulatory Requirements/Proposed Relocation Plan

As discussed within Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, acquisition of property and relocation of residents and businesses by federally funded airports such as LAX is governed by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (codified as amended at 42 USC 4601-4655), its implementing regulations (49 CFR Part 24), FAA Order 5100.37A, and Acquisition and Relocation Assistance for Airport Projects (April 4, 1994, P.L. 91-646), collectively referred to as the Uniform Act. The purpose of the Uniform Act is to ensure fair and equitable treatment for individuals who are displaced or whose real property is acquired as a result of a federally funded project. Procedural requirements regarding notification to affected owners, appraisals, compensation at fair market value, relocation payments, and advisory assistance are specified in the Uniform Act. Relative to residential relocation, the Uniform Act requires that assistance be provided to find comparable, decent, safe, and sanitary housing units within a reasonable time prior to relocation, and that the unique needs of minority and low-income persons be addressed.

In compliance with the Uniform Act, state and local regulations, and FAA Advisory Circular 150/5100-17, LAWA has proposed Master Plan Commitment RBR-1, Residential and Business Relocation Program (Alternatives A, B, C, and D). This commitment has been revised since publication of the Draft EIS/EIR to clarify the timing of the commitment, to conform to statutory language, and to address a recent LAWA program related to relocation issues (the Move On Housing Program). Revised text of this commitment is provided in its entirety in Section 4.4.2, *Relocation of Residences or Businesses*, of this Final EIS/EIR. Although it is expected that comparable replacement housing resources would be available for all displaced residents, Master Plan Commitment RBR-1 includes provisions to further ensure the availability of sufficient resources, such as programs to move and rehabilitate acquired structures (e.g., similar to LAWA's new Move On Housing Program), and funding possibilities for replacement housing.

Additionally, the LAX Master Plan includes a Preliminary Property Acquisition and Relocation Plan, originally provided in Appendix P to Chapter V of the Draft LAX Master Plan (January 2001), and updated to address Alternative D in Chapters 2.7 and 2.8 of the Draft LAX Master Plan Addendum (June 2003). A final relocation plan will be developed during Master Plan implementation. The Preliminary Relocation Plan includes parcel-level detail for the properties proposed for acquisition under the Master Plan alternatives, an assessment of relocation effects, and a recommended approach to relocation. As specified therein, the procedures for residential acquisition and relocation would be identical to those detailed within LAWA's *Final Relocation Plan -- Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford* (referred to as the Existing ANMP Relocation Plan or the Existing Relocation Plan), dated June 2000. However, as previously stated, Alternative D, the LAWA

properties are heavily impacted by noise, traffic, and incompatible adjacent land uses. Residents in those areas approached the airport and requested that their properties be acquired rather than soundproofed. The existing acquisition activities were previously approved as part of LAWA's *Final Relocation Plan – Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford*, June 2000 (referred to within the Relocation analysis as the Existing ANMP Relocation Plan or the Existing Relocation Plan).

69 The Move On Housing Program is a collaborative effort between public and not-for-profit organizations to move and rehabilitate Manchester Square and Belford area structures in order to transfer housing assets to residential areas in Los Angeles County, provide reasonable housing for displaced tenants, and provide construction-related employment opportunities to community residents.

70 The Construction Sequencing Plan for Alternative D indicates that access to the Belford and Manchester Square properties would be necessary roughly by the end of 2006.

staff-preferred alternative, does not propose residential acquisition, therefore the residential provisions in the Preliminary Relocation Plan would not apply to Alternative D.[71]

As described in the Preliminary Relocation Plan, fair market value will be offered to property owners for the acquisition of their property. The appraised fair market value of a property will disregard any decrease or increase in the market value of the property caused by the project for which the property is being acquired, or by the likelihood that the property would be acquired. In addition, owners and tenants displaced due to the acquisition of their home will be provided a replacement housing payment necessary to purchase or lease a comparable replacement dwelling in a neighborhood distant from an airport and not subject to airport noise. Thus, the payments offered to homeowner and tenant occupants allow relocation to a comparable home in an area unaffected by airport impacts. A variety of relocation payments may also be provided to eligible displaced persons to compensate for moving expenses, mortgage interest rate differentials or rent differentials, down payment assistance, and assorted incidental costs. As it pertains to property taxes, displaced property owners over the age of 55 would be able to transfer their current property tax assessment basis to a comparable replacement property within Los Angeles County, with certain restrictions. For those property owners who purchase replacement property outside of Los Angeles County, similar provisions within Proposition 90 would apply. LAWA will attempt to acquire all properties without resorting to condemnation; however, the City of Los Angeles and LAWA will reserve this action within their authority to implement, as necessary.

Available Housing Supplies

As detailed in Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR, an inventory of available rental housing and homes for sale was undertaken for the separate and ongoing Existing ANMP Relocation Plan. Based on the 1999 LAWA survey, there were approximately 526 available single-family dwellings within a 10-mile radius of LAX in the price range of the homes proposed for acquisition under Master Plan Alternatives A, B, and C. Taking into account the potential for LAWA's Existing ANMP Relocation Plan to absorb single-family units, there would still be sufficient comparable units within a 10-mile radius to accommodate the relocation of 57 owner-occupied single-family dwellings under the Preliminary Relocation Plan. Relative to rental housing, the Draft EIS/EIR assumed a 5 percent vacancy rate, indicating the availability of approximately 27,800 rental vacancies within a 10-mile radius of LAX, which could easily accommodate the demand associated with both the Master Plan and the Existing ANMP Relocation Plan. The Draft EIS/EIR also recognized that Last Resort Housing assistance may be necessary to supplement regular housing and rental assistance payments and that additional relocation assistance would be needed for Section 8 participants through the Preliminary Relocation Plan.

Updated data indicates the availability of over 700 single family homes in portions of the communities located within a 10-mile radius of LAX.[72] Rental vacancies also remain high, with an estimated 11,800 available units within the census tracts that make up LAX Master Plan study area (CTs 2766.02, 2772.00, 2774.00, 2780.00, 2781.00, 6014.01, and 6016.00, shown in Figure 4.4.2-1, Acquisition Study Area, in Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR) based on a 5 percent vacancy rate.[73]

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[71] Except, as noted above, in the event Mitigation Measure MM-ST-13, Create a New Interchange at I-405 and Lennox Boulevard (Alternative D), is implemented, in which case any necessary residential relocation would be addressed through a Residential and Business Relocation Program similar to that established as part of the LAX Master Plan.

[72] Based on a listing of single-family homes for sale within the communities of Beverlywood, Brentwood, Cheviot Hills/Rancho Park, Culver City, Inglewood, Los Angeles (southwest), Marina del Rey, Palms/Mar Vista, Playa del Rey, Santa Monica, Venice, and Westwood/Century City as of July 14, 2003, as indicated by The Combined L.A./Westside Multiple Listing Service, Inc., www.themls.com. This estimate does not include those homes for sale in communities located to the south and southeast of LAX and within a 10-mile radius, such as El Segundo, Gardena, Hawthorne, Hermosa Beach, Lawndale, Manhattan Beach, Redondo Beach, and Torrance. Additionally, this estimate does not include new for-sale properties within Playa Vista that are currently or will soon be available. Therefore, the estimated total number of homes for sale within a 10-mile radius of LAX is likely much greater.

[73] The census tracts that make up the LAX Master Plan study area do not encompass all communities within a 10-mile radius of the airport. Therefore, the estimated total number of vacant units within a 10-mile radius of LAX is likely much greater. In addition, a review of rental property listings within neighboring communities, as listed with only four rental agencies (www.westsiderentals.com, www.southbayrentals.com, www.bestrents.com, and www.springstreet.com), indicate the availability of over 6,000 units. These estimates do not include new rental units within Playa Vista that are currently or will soon be available.

Affordable Housing

The availability of affordable housing in Los Angeles and California as a whole is an increasing concern. Recent statistics indicate that only 28 percent of households in the Los Angeles region can afford a median-priced home ($369,290 in California as of May 2003), compared to 27 percent statewide and 59 percent across the nation.[74] This housing affordability index is considered a "fundamental measure of housing well-being."[75] As population growth has outpaced the rate of new housing construction year after year, the shortage of existing, new, and replacement housing has grown dramatically; meanwhile, as property values have skyrocketed, affordability has dwindled. Without sufficient zoning for new, higher density, and affordable housing, there is a lack of available land for new residential development.

The housing supply within the City of Los Angeles presently includes 2,020 residential developments containing a total of 53,365 units that are funded through various local, state, and federal housing programs and considered affordable to low and moderate income households.[76] Among various housing agencies and organizations, the Housing Authority of the City of Los Angeles (HACLA) assists eligible applicants through several housing programs, including a Public Housing Program, a Senior Housing Program, and Section 8 Housing Assistance. HACLA manages over 8,000 residential units in approximately 60 public housing properties throughout Los Angeles, in addition to over 1,600 senior housing units, providing affordable housing to over 20,000 low income families and individuals.[77] The Section 8 program provides housing subsidies to extremely low and very low income families, senior citizens, and disabled or handicapped persons, based on reasonable rent (a percentage of income) and Fair Market Rent (FMR) caps established by the U.S. Department of Housing and Urban Development (HUD). As of October 2000, HACLA had funding for 44,434 units capable of serving approximately 95,000 people. HACLA also contracts with non-profit agencies and other government agencies to serve low income populations. Non-profits participate substantially in the development of affordable housing throughout the City.

State law requires that cities and counties prepare a Housing Element as part of their General Plan in order to plan for sufficient affordable housing supplies. In accordance with these requirements, the City of Los Angeles Housing Element contains an inventory of restricted low income housing developments; analysis of the potential for low income units to be converted to market rate housing; development of local programs to preserve or retain restricted low income housing; and quantified objectives. The Housing Element includes goals, objectives, and policies aimed at creating livable, sustainable, and diverse communities throughout the City. The general goals relate to the provision of adequate housing supplies, maintaining the quality of life, the provision of equal housing opportunities, and support for housing development and preservation. Specific policies include support for programs that assist low and moderate income households, increase the availability of affordable rental housing, and promote home ownership; provisions that ensure existing housing is maintained in decent, safe, and sanitary condition; accommodation of larger families through the reconfiguration of housing units; streamlining of housing development projects; rehabilitation of substandard housing; enforcement of zoning and building codes; planning for high intensity residential development; provision of adequate public infrastructure and services; implementation of urban design standards; and promotion of affordable housing financing. The Housing Element also includes quantified goals for the construction, rehabilitation, and conservation of affordable housing by income category (very low, low, moderate, and high income households) through 2005. As stated therein,

> Because so much of the existing need is for housing affordable to very low- and low-income households and because subsidies are important to the development of such housing, the major determinant as to whether the City would reach its goals will be economic conditions affecting growth nationwide and Southern California in particular, and the availability of public funds and housing subsidy programs. The programs set

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74 California Association of Realtors, C.A.R. News Release: "California's Housing Affordability Index falls one point in May; Affordability gap between California and U.S. at 32 points," July 10, 2003, http://www.car.org.

75 Ibid.

76 City of Los Angeles Department of City Planning, Housing Element of the City of Los Angeles General Plan, adopted by City Council on December 18, 2001, http://www.lacity.org/PLN/.

77 The Housing Authority of the City of Los Angeles, www.hacla.org.

> forth in this Element are intended to provide every possible incentive to housing production and preservation to help meet the City's future housing needs.[78]

The Los Angeles Municipal Code (LAMC) also contains provisions regarding affordable housing. LAMC Section 12.39 requires that at least 15 percent of new housing projects be affordable units, with 6 percent designated for low income households and 9 percent for low or moderate income households. LAMC Section 12.22.A.25 permits a 25 percent density bonus for residential projects with 5 or more units, provided either 10 percent of units are designated for very low income households, 20 percent are designated for low income households, or 50 percent are for seniors or other "qualifying residents."

While a shortage of affordable housing is acknowledged throughout the communities surrounding LAX and Los Angeles County as a whole, Census Tract (CT) 2780, in which residential acquisition may occur depending on the Master Plan alternative selected, is not considered a low income tract based on its demographic characteristics (see Figure 4.4.3-1, Minority and/or Low-Income Census Tracts - 2000 Census Changes, and the associated discussion in Section 4.4.3, *Environmental Justice*, of the Supplement to the Draft EIS/EIR). As discussed in Section 4.4.2, *Relocation of Residences or Businesses*, of the Supplement to the Draft EIS/EIR, although CT 2780 did experience an increase in the percentage of households falling below the poverty line (from 3 percent to 9 percent) between 1990 and 2000, the Census Tract also saw an approximately 26 percent increase in the median household income, from $44,028 to $55,370. Given the composition of residential properties to potentially be acquired under the Master Plan, the relocation of a substantial number of low or very low income households is not anticipated. In any case, Master Plan Commitment RBR-1 ensures that assistance to find comparable replacement housing will be provided to affected residents. Additionally, Master Plan Commitment RBR-1 includes provisions for Last Resort Housing, which applies to persons who cannot readily be relocated using regular relocation program benefits and/or procedures, generally because the cost of available comparable housing would result in payments in excess of the statutory payment limits. In such instances, Last Resort Housing options would be implemented by LAWA, such as the provision of supplemental financial assistance, the construction of suitable replacement housing, and/or the rehabilitation of replacement units, as specified in the final relocation plan to be developed during Master Plan implementation.

Recap of the Impacts Associated with the LAX Master Plan Alternatives

The 84 dwelling units proposed for acquisition under LAX Master Plan Alternatives A, B, and C represent less than one percent of the 22,794 dwelling units located with the Westchester - Playa del Rey Community Plan area, as estimated in the 2000 U.S. Census. Acquisition of these properties would represent an even smaller proportion of total housing within the numerous communities surrounding LAX and within the City of Los Angeles as a whole. Despite a regional shortage of affordable housing stock, an impact of this caliber would have an indiscernible effect on housing supplies in the area. Additionally, City policies and local, state, and federal housing programs would continue to promote an increased supply of affordable housing. Furthermore, provisions within Master Plan Commitment RBR-1, including the provision of vacated project structures to agencies that could relocate the structures to new sites and make them available for program-affected residents,[79] funding for possible construction of replacement housing, funding for rehabilitation of housing units being sold or rented to program-affected residents, and consideration of other innovative actions to ensure the availability of replacement housing, would help to ensure that comparable replacement housing resources are available.

As concluded in Section 4.4.2, *Relocation of Residences or Businesses*, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, there would be an adequate supply of housing to accommodate the residential relocation needs associated with the Master Plan. The potential impacts of residential relocation would be fully addressed through Master Plan Commitment RBR-1. Carrying out this commitment would ensure that full relocation assistance and benefits would be provided to project relocatees in accordance with the Uniform Act. In compliance with the Uniform Act, no resident would be required to move until comparable, decent, safe, and sanitary housing is made available. Timely relocation of residents would be supported by the expertise and services for relocation assistance already

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[78] City of Los Angeles Department of City Planning, Housing Element of the City of Los Angeles General Plan, adopted by City Council on December 18, 2001, http://www.lacity.org/PLN/.

[79] For example, through a program similar to LAWA's Move On Housing Program, which was established for the Existing ANMP Relocation Plan within the Belford and Manchester Square areas.

in place under LAWA's Existing ANMP Relocation Plan. While residential relocation impacts would be less than significant with implementation of Master Plan Commitment RBR-1, it is acknowledged that relocation may potentially present an inconvenience and hardship for some residents.

TR-RC-1: LAX Master Plan Role in Regional Approach to Meeting Demand

Introduction

Many comments were received questioning why the LAX Master Plan didn't offer a region-wide solution to the future aviation needs of the Los Angeles region. This topical response discusses the following subjects pertaining to the issue of a region-wide solution to aviation demand: 1) the historical context of airline regulation and deregulation, 2) why airport capacity does not guarantee airport demand, 3) the factors that influence air service, 4) the roles of various agencies in regional aviation planning, 5) the development of the unconstrained regional passenger demand forecast, 6) the development of the allocation of regional aviation demand, 7) the development of the unconstrained LAX demand allocation scenarios, 8) why LAX's status as an international gateway cannot be easily duplicated at a replacement airport such as Palmdale, 9) the important regional economic contribution of an international gateway, and 10) the roles of the regional airports in augmenting the service at LAX. The discussion below includes several related subtopics and is based primarily on information contained in the Draft LAX Master Plan and the Draft LAX Master Plan Addendum with some additional information and specific examples in support of the previous analyses.

Subtopical Response TR-RC-1.1: Airline Regulation/Deregulation

Many comments received on the Draft EIS/EIR suggested that passenger and cargo airlines be forced to operate from regional airports other than LAX. The following sections that discuss airline regulation and deregulation are reprinted in part from Section 1.3 of the Draft LAX Master Plan Addendum. Additional information on the role of deregulation in aviation planning is contained in Attachment 2, *The Role of Deregulation in Aviation Planning*, of the Final EIS/EIR.

Prior to 1978, the Federal government regulated and controlled nearly every aspect of the commercial air transport system in the United States. Through agencies such as the Civil Aeronautics Board, the Federal government determined rates, frequency of service, routes and mergers of airlines. However, with the passage of the Federal Airline Deregulation Act of 1978, the government exercises a far less substantial role in the regulation of commercial air transport. Now, airlines decide for themselves which airports to serve and how much to charge for service. As a general rule, airlines choose airports located nearest to the highest concentrations of conveniently located customers. In this deregulated, "market-place" environment, the key to survival of any airline is to provide a better product than the competition. Convenience, price, and frequent flier incentives have been the tools used most frequently in this competition. In air travel, convenience involves two key factors:

- **Airport Accessibility -** Airport locations and ground transportation options that make an airline's services convenient to the most potential passengers
- **Service Frequency -** Flight schedules that most closely match airline service to potential passenger need

Within this general framework, however, airlines must make strategic decisions about air service to maximize their investments and gain competitive advantages. Generally, an airline will only provide air service where demand exists. For instance, in regions with multiple airports, airlines tend to concentrate service at a single, well-located primary airport. Concentrating service at a dominant airport facilitates connecting service, which can significantly increase an airline's market share and allow more frequent service to more destinations. In particular, international passenger service is dependent on availability of domestic connecting flights to a wide range of destinations.

Airlines consider several factors when making decisions about which airports to serve in a region with multiple airports. The key factors include:

- **Local Passenger Market Potential -** The potential market is based on the airport's location and its accessibility or convenience to passengers.
- **Network Synergy -** A particular airport may play an important role in a particular airline's air service network, offer opportunities for connecting passenger flows (domestic or international), or encourage competition with other airlines.
- **Airport Facilities -** A particular airport's ability to accommodate existing and projected demand may be constrained by one or more of the following:
  - Airport Infrastructure - The size and condition of the airfield, aircraft parking gates, terminal facilities, ground access facilities, cargo facilities, federal inspection services, freight forwarding facilities, fueling systems, and other physical infrastructure elements
  - Policy - The airport owner's policies regarding future airport development and the utilization of existing facilities
  - Environmental - Significant environmental considerations that may limit airport activity or future development
  - Airspace - Airspace limitations due to terrain or interactions with other airports

In a multi-airport system, where passengers, cargo operators, and airlines have alternatives, the presence or absence of these factors may cause certain airports to fail to capture their potential market share and allow others to surpass the competition.

Airlines will establish additional service at secondary regional airports only if the local market generates sufficient demand and adequate facilities exist. In some cases, secondary airports can offer a competitive advantage over a primary airport by reducing airline costs, or by providing more convenient access to and from a central business district or tourist destination. However, airlines are generally reluctant to serve secondary airports, even under these circumstances, if doing so would dilute their market share or significantly increase operating costs. An airline that attempts to shift service from one airport to another may instead end up losing that share of the market to a competitor.

Passenger demand cannot simply be moved to another airport. In fact, under federal law, it is very difficult for local, regional, or federal officials to force airlines to serve one airport over the other. LAWA has tried subsidies to encourage airlines to serve outlying Palmdale, with only limited, temporary success. LAWA's efforts to encourage airline service at Palmdale are discussed in Topical Response TR-RC-5. The airlines provide service at the airports where demand exists. Without demand from the traveling public, airlines will re-deploy their assets to serve the greatest number of passengers and earn the best return on their investment.

The benefit most often cited as resulting from deregulation is lower airfares. Average airfares since 1978 have fallen considerably compared to the aggregate inflation rate. Increases in the Consumer Price Index (CPI) have outpaced Average Yield (airfares converted into cents per revenue seat mile - a common industry metric) since approximately 1990. Airlines developed highly sophisticated pricing models that are time-of-day, day of week, and airport-to-airport specific. The advances in airline pricing are referred to as Yield Management. In addition, the general success of low-fare airlines, most notably Southwest, American Trans Air, Air Tran and jetBlue Airways, have put additional downward pressure on airfares and yields, a trend expected to continue in the future.

Deregulation has generated some problems for the industry, such as periodic massive losses and spotty profitability. During the pre-deregulation period (i.e., 1947-1978), airlines posted modest profits as CAB and airlines priced routes and service so that profitability would be achieved. Modest profitability was achieved in the 1980s, only to be eroded in the early 1990s as the combination of recession and the Gulf War generated enormous losses in net income. During the nation's longest sustainable expansion, airlines recorded historical highs in profitability only to be largely wiped out as a result of the current economic recession, the events of September 11, 2001, the war in Iraq, and SARS.

Subtopical Response TR-RC-1.2: Airport Capacity Does Not Guarantee Demand

Montreal Mirabel - In the 1975, Transport Canada constructed a new international airport, Mirabel, located approximately 34 miles from Montreal's central business district. The original concept of Mirabel called for Dorval to be closed to all commercial traffic. Instead, the international and Transborder (i.e., U.S. flights) were segregated to Mirabel, while keeping all domestic Canadian flights at Dorval. Splitting

the catchment area by sector devastated the connecting traffic volume and destroyed domestic-to-international and international-to-domestic connections.

In February 1996, ADM, the operator of Dorval and Mirabel, announced that all scheduled passenger traffic would be transferred back to Dorval by April 1999. By the end of 1997, most of this transfer that already occurred. ADM recognized the value and impact of better serving origin & destination passengers, recapturing connecting passengers, and accommodating airline alliances at a consolidated facility.

Today, Mirabel is consigned to serving only charter passenger and all-cargo flights. Its role has been denigrated from superlative gateway to supplemental airport. The attempted sector segregation is often cited as a major reason why several European airlines withdrew service from the Montreal market. The sector segregation also resulted in the near elimination of connecting activity in Montreal, once Canada's primary international gateway.

MidAmerica (Mascoutah, Illinois) - Development of Scott Air Force Base for joint military/civilian use was first proposed in the mid 1980s and was a key to keeping the base open. MidAmerica cost $330 million and opened in November 1997. The Air National Guard's 126th Air Refueling Wing relocated from Chicago O'Hare in July 1999. Almost three years after opening, MidAmerica became a commercial service airport when Pan Am began flights to Gary/Chicago Airport and Orlando Sanford International Airport in August 2000. In December 2001 Pan Am pulled its one daily flight from MidAmerica. The St. Clair County Board of Commissioners, operators of MidAmerica, attempted to help Air Florida Airways Corp. obtain financing in order to begin service at the airport in June 2003 to 10 major cities. Air Florida does not currently own aircraft or operate flights. MidAmerica remains without scheduled passenger service.

Subtopical Response TR-RC-1.3: Air Service Factors

While competing airlines are constantly changing the air service provided at the airports within the system, the pattern of air service tends to mirror the pattern of demand within the system over time. That is, air service if initiated will not remain at an airport where the demand is not sufficient to sustain such service. The factors that influence air service patterns within a competitive multi-airport system, as applied to the Los Angeles region, are described below:

Subtopical Response TR-RC-1.3.1: Passenger Catchment Areas - The pattern of air traveler trip originations closely follows the Los Angeles region's demographic patterns. Each of the airports within the Los Angeles region airport system has a location advantage for those air travelers closest to that airport. The area of locational advantage for each airport is referred to as a passenger catchment area. The passenger catchment area for each airport can be determined by comparing the travel times from each LA Region Airport Demand Allocation Model (RADAM) zone to each of the competing airports and assigning each zone to the closest airport. This method assumes all airports have equal levels of air service and thus the choice of airport is based only on access travel time. Each airport's actual catchment area is a function not only of proximity but also of the level of air service provided. The approximate passenger catchment areas for each LA region airport are illustrated on Figure III-5.11 of the Draft LAX Master Plan.

Subtopical Response TR-RC-1.3.2: Existing Service Patterns - Within a multi-airport system, the general air service patterns evolve gradually based on the changing pattern of demand and available facility capacity. In predicting the future pattern of air service a "clean slate" approach is unrealistic. The existing air service pattern is due to past policy decisions and market trends. Much of LAX's existing competitive advantage is due to the foresight of the City thirty to forty years ago building sufficient facility capacity to handle long-term growth in aviation demand. Airlines and other service providers have supported LAX by making major commitments to this facility. The level and diversity of service provided at LAX has also created a synergy unmatched by other airports in the Los Angeles region. Air service at competing Los Angeles region airports has developed slowly over the years as urban sprawl increased the access time to LAX for passengers from many parts of the Los Angeles region.

Subtopical Response TR-RC-1.3.3: Growth Potential - The third factor influencing future air service levels is each airport's ability to accommodate increases in air service. Congestion at one airport, particularly during peak periods, provides an opportunity for the growth of service at a competing airport. In addition to physical facility limitations, airport policy may also restrict the use of an airport. Several

airports within the Los Angeles region airport system have policy restrictions on the number and type of aircraft and/or levels of passengers that can utilize the airport. The consequence of physical or policy constraints is that some airports will not be able to serve future potential demand. Policy decisions on future airport capacity within the airport system could materially affect the future pattern of air service.

This material was originally addressed in the Draft LAX Master Plan Chapter III, Forecasts of Aviation Demand, Subsection 5.5.1, Air Service Factors.

Subtopical Response TR-RC-1.4: Roles in Regional Planning

Many comments received called for the Southern California Regional Airport Authority (SCRAA) or the Southern California Association of Governments (SCAG) to force LAWA to develop and implement a regional solution to meeting projected passenger and cargo demand. The following paragraphs discuss the regional authority and status of SCRAA and SCAG.

Subtopical Response TR-RC-1.4.1: Southern California Regional Airport Authority (SCRAA) - The Southern California Regional Airport Authority (SCRAA) is a joint powers agreement among the counties of Los Angeles, Orange, Riverside, and San Bernardino, and the City of Los Angeles. The Authority was formed to develop and implement a regional approach of providing airport capacity. After being dormant for many years, the SCRAA was reactivated in March 2001 to deal principally with two issues: the proposed expansion of LAX, and the proposed conversion of El Toro to a civilian airport. The decline in air travel demand due to the economic recession, the events of September 11th, the war in Iraq, and SARS has largely driven the Authority back to inactivity. Riverside County voted in July 2002 to withdraw from SCRAA.

Subtopical Response TR-RC-1.4.2: Southern California Association of Governments (SCAG) - The Southern California Association of Governments (SCAG) is an inter-governmental, regional planning organization charged with studying and proposing solutions to problems, particularly related to transportation, facing the people of Southern California. It is comprised of six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 186 cities. The SCAG region has more than 16 million residents and encompasses more than 38,000 square miles.

The joint powers agency is designated as the Metropolitan Planning Organization for the greater Los Angles region. SCAG is also the designated Regional Transportation Planning Agency and is responsible for preparation of the Regional Transportation Plan (RTP) and the Regional Transportation Improvement Plan (RTIP). Although SCAG is charged with reviewing the plans for programs of regional significance, SCAG has no authority to implement the projects.

Subtopical Response TR-RC-1.4.3: LAWA Airports - The City of Los Angeles owns and LAWA controls the operation and potential expansion of four airports: LAX, Ontario, Palmdale, and Van Nuys. The other regional airports are controlled by other jurisdictions that are responsible for their respective operation and expansion.

In response to the terrorist attacks of September 11, 2001 and to public comments received on the No Action/No Project Alternative and Alternatives A, B, and C of the LAX Master Plan, LAWA developed, at the request of Mayor James Hahn, Alternative D. In exchange for improving safety, security, customer service standards, and reducing the environmental impacts of the airport, Alternative D gives up the economic benefits that the region could otherwise expect if LAX were designed to accommodate the full demand for passenger service at that location.

The projected passenger (78.9 MAP) and cargo (3.1 MAT) capacities of LAX under Alternative D are consistent with the policy framework of SCAG's allocation of demand to LAX in the 2001 and draft 2004 RTPs. LAWA is not obligated to consider alternatives that include particular proposed expanded facilities and increased activity levels at existing and/or proposed airports that LAWA does not control.

Subtopical Response TR-RC-1.5: Unconstrained Regional Passenger Demand Forecast

Based on the projected economic growth in the Los Angeles region, the master plan forecast predicts that regional passenger demand will rise sharply from 88.6 Million Annual Passengers (MAP) in 2000 to 146.5 MAP in 2015. Please see Chapter 1, Subsection 1.3.1, of the Draft LAX Master Plan Addendum.

The unconstrained forecast further assumed that LAX would serve 98 MAP by 2015 and that the other regional airports would serve the remaining demand of 48.5 MAP. The forecast did not specify how the remaining demand would be allocated among the region's other airports. As part of the master plan, three forecast scenarios were developed to allocate the remaining demand among the regional airports. As summarized in **Table 1,** each scenario was based on a different level of demand served by LAX. Please see Appendix I-A, Future Airport System Scenarios, of the Draft LAX Master Plan for a discussion of the assumptions of each scenario.

Table 1

Los Angeles Region Airport System Scenarios
2015 Passenger Activity Forecasts

Airport	LAX Master Plan Forecast	Additional LAX Master Plan Scenarios		
		Scenario 1	Scenario 2	Scenario 3
Los Angeles	97,960,000	97,500,000	105,700,000	96,500,000
Ontario		13,862,500	20,750,000	13,875,000
John Wayne		N/A	11,625,000	7,862,500
El Toro		28,750,000	N/A	21,625,000
Burbank	48,510,000	6,777,778	6,333,333	7,666,667
Long Beach		1,000,000	1,300,000	860,000
Palm Springs		1,080,000	900,000	1,100,000
Oxnard/Point Mugu		344,000	355,000	300,000
Palmdale		305,000	700,000	230,000
Regional Total	**146,470,000**	**149,619,278**	**147,663,333**	**150,019,167**

Source: Landrum & Brown, 2000

The results of these scenarios were used as input assumptions to establish a range for forecast of LAX domestic O&D demand. While these scenarios make assumptions regarding the future levels of service at the other regional airports within the system, it was not the intent of this analysis to predict precisely what may happen at the other regional airports. The focus of this analysis was to evaluate how changes in the Los Angeles region airport system affect LAX's share of the Los Angeles region domestic O&D.

Subtopical Response TR-RC-1.6: Development of Regional Airport Demand Allocation

The allocation of domestic O&D demand to LAX was developed using the Regional Airport Demand Allocation Model (RADAM). The model was developed specifically for the Los Angeles region to assess the future implications of various changes in the Los Angeles region airport system. RADAM was used to allocate domestic O&D demand within the region only. A more detailed description of RADAM is provided in Chapter III, Forecasts of Aviation Demand, of the Draft LAX Master Plan, Section 5.4, Description of the LA Region Airport Demand Allocation Model (RADAM).

Subtopical Response TR-RC-1.7: Unconstrained LAX Demand Allocation Scenarios and Results

The future level of domestic O&D passenger demand at LAX is framed by the competitive environment in the Los Angeles region's airport system. LAX has served a declining share of the Los Angeles region's total domestic O&D passengers over the past 25 years. In 1970, LAX's share was 89 percent. By 1980 it had declined to 75 percent and by 1990 it was 63 percent, further eroding in 1994 to approximately 60 percent. The two primary factors that will determine LAX's future share of Los Angeles region domestic O&D passengers are the relative level of air service at each of the other airports in the system and the relative access travel times to each airport. If access travel time to LAX is greater for an increasing share of the Los Angeles region's domestic O&D passengers and the quality of air service (non-stop markets served and frequency of flights) at outlying airports continues to improve, then it is likely that LAX's share of the domestic O&D demand will continue to decline. This material was originally addressed in the Draft

LAX Master Plan Chapter III, Forecasts of Aviation Demand, Section 5.5 LAX Domestic O&D Demand Allocation Scenarios and Forecast.

In each of the three scenarios, LAX was projected to serve passenger levels higher than those associated with the No Action/No Project Alternative and Alternative D. These alternatives would accommodate 78.9 MAP producing a potential for a demand of 18 to 27 MAP that likely will not be accommodated by the region's airports in 2015.

Subtopical Response TR-RC-1.8: Supplemental versus Replacement Airports

A number of comments related to the use and expansion of Palmdale Airport indicate the desire for a partial or complete shifting of passenger and all-cargo service from LAX to Palmdale. This frequent comment subject raises the issue of Palmdale Airport's future use as either a *supplemental* (i.e., reliever) or *replacement* airport for LAX.

As a *supplemental* airport, Palmdale appears as a feasible long-term option depending upon its accessibility to a sufficiently large passenger population base over the long term. Palmdale as a *replacement* airport to LAX is infeasible for a number of economic reasons including unamortized investments at LAX, costs of relocation, demand suppression of both the passenger and air cargo market due to its location in relation to the most dense market area, and recent and strong objections to "remote" replacement airports including Montreal Mirabel, Chicago Peotone and Milan, Italy to name a few.

To ensure the success of supplemental airports in Washington, DC and Dallas, the existing primary airports were restricted legislatively. Restrictions on Washington National allowed the success of Washington Dulles. Restrictions on Dallas Love Field paved the way for Dallas/Ft. Worth. Denver Stapleton was closed upon the opening of Denver International north of the city.

International Gateway

Historically, U.S. international air traffic has been concentrated at three entry points, or "gateways." John F. Kennedy International Airport in New York City has dominated the Atlantic air routes, Miami International Airport is the main connecting point for Latin American traffic, and Los Angeles International Airport has been the primary gateway to the Asia-Pacific region. As a result of this historic position, the regions around each of the three primary gateway airports have developed specialized industries, including customs processing, warehouses, international packing, storage, and other import-export facilities.

Commercial aviation between countries is governed by bilateral air service agreements that have been negotiated between the United States and its trading partners. Historically, these bilateral agreements have been restrictive and were designed to protect national flag carriers from competition. Most of these agreements imposed significant restrictions on airline operations by limiting the destinations served, the number of airlines permitted to serve the market and the level of fares levied.

While the basic framework of bilateral agreements remains in effect, the U.S. government has advocated "open skies" agreements aimed at increasing competition, lowering fares and air cargo rates, and increasing air service. Open skies agreements permit unrestricted international air service between participating countries, allowing each country's airlines to fly between any city (i.e., origin gateway) in its home country and any city (i.e., destination gateway) in participating countries. This type of agreement maximizes potential competition. So far, the U.S. has signed approximately 60 open skies agreements, which eliminate all restrictions on airline service between the signatory countries. In many cases, air service rights (i.e., bilateral authority) have been granted between the signatory countries and a third country (i.e., 7th Freedom Rights) thereby providing additional and liberalized bilateral authority.

In many U.S. and foreign aviation markets there are multiple gateway destinations that are capable of sustaining international air service. In the United States, there are now dozens of international gateways. During the post-Deregulation era in the United States and the subsequent development of new and expanded airport infrastructure (i.e., hubs) and Federal Inspection Services ("FIS"), many new U.S. gateways became eligible for direct international air service. In international markets, emerging economies combined with the break-up of the former Soviet Union and the other former Eastern Block countries opened new markets for new and expanded air service.

According to the Air Transport Association of America, the United States has approximately 100 air service bilateral agreements with its trading partners. An analysis of these agreements in the context of

the critical importance of the Los Angeles gateway was conducted. LAX is a Named Gateway in 19 or approximately 46 percent of the bilateral agreements in which Named Gateways are specified for U.S. or foreign flag carriers. Named Gateways are those that are specifically identified in a bilateral agreement as a point of entry permitted (i.e., requested) to be served by air. Of the approximately 100 air service bilateral agreements, 41 have one or more Named Gateways. A Named Gateway is most often a destination that is highly desirable for either the U.S. or foreign flag carriers for its economic, cultural, and/or ethnic concentrations as well as other key market features. **Table 2** provides an accounting of Named Gateways and LAX-specific Named Gateways.

Table 3 compares the top U.S. gateway airports for calendar years 1990, 1995, and 2000. The data in the table highlight the concentration of activity around the nation's top international facilities. In 1990, 17.2 percent of the total U.S. international enplanements departed from the top three U.S. gateway facilities, and 33.1 percent from the top fifteen facilities. By 2000, the market share for the top three U.S. gateway airports had grown to 20.2 percent. However, the total percentage of U.S. enplanements grew from 33.1 percent at the top 15 airports to 45.7 percent from these same airports. When international air service is expanded, it is typically expanded at these facilities. The second and third sections of this table present international enplanements excluding Canada and Transborder (Canada only) enplanements, respectively.

This data is intended to show the importance of the U.S. Gateway location relative to the international destination. In the third section, showing only Canadian enplanements, Chicago O'Hare becomes the first ranked city for enplanements to Canada.

The Immigration and Naturalization Service (INS) records show that New York is the dominant gateway for travel from the U.S. to the Atlantic Region (Europe, Middle East, and Africa). Miami is the dominant gateway to Latin America (Central and South America and the Caribbean), although Los Angeles is the primary gateway to Central America. Los Angeles is the primary gateway to the Pacific Region (Far East, Australia, and Oceania), followed closely by Honolulu. Due to the expansion of international air service at mid-continent airports, New York and Miami lost market share between 1995 and 2000 to their respective world regions. In contrast, Los Angeles' market share of the Pacific Region increased between 1995 and 2000. Detailed tables of INS international passenger data for 1995 and 2000 are presented in Appendix C.

This material was originally addressed in Chapter 1, Subsection 1.3.5, of the Draft LAX Master Plan Addendum.

Table 2

U.S. Air Server Agreement Analysis - Named Gateways

U.S. Air Service Agreements	U.S. Air Service Agreements with Named Gateway	U.S. Air Service Agreements with LAX as Named Gateway
Argentina	X	X
Australia	X	X
Barbados	X	
Bolivia	X	
Brazil	X	
China	X	X
Columbia	X	X
Cote d'Ivoire	X	
Cuba	X	
Dominican Republic	X	
Ecuador	X	X
Egypt	X	X
Fiji	X	X
Greece	X	
Hong Kong	X	
Hungary	X	X
India	X	X
Iran	X	X
Ireland	X	X
Israel	X	
Jamaica	X	
Japan	X	X
Lebanon	X	
Liberia	X	
Macau	X	
Mexico	X	X
Netherlands	X	
Paraguay	X	
Philippines	X	X
Poland	X	X
Russia	X	X
Saudi Arabia	X	
South Africa	X	
Spain	X	X
Thailand	X	
Trinidad & Tobago	X	
Ukraine	X	X
United Kingdom	X	X
Uruguay	X	
Venezuela	X	
Zaire	X	
Totals	41	19

Source: Air Transport Association of America, Inc. - Air Service Rights in U.S. International Air Transport Agreements

Table 3

International Gateway Comparison U.S. Airports with Greater Than 1 Million International Enplanements Calendar Year 2000, 1995 and 1990

			International Enplanements					
Rank	Airport	Code	2000	% Share	1995	% Share	1990	% Share
1	New York Kennedy	JFK	8,661,911	7.1%	8,152,973	8.1%	7,851,101	7.8%
2	Los Angeles International	LAX	8,193,272	6.7%	6,088,838	6.1%	4,291,889	4.3%
3	Miami International	MIA	7,840,523	6.4%	7,364,534	7.3%	5,162,925	5.1%
4	Chicago O'Hare	ORD	5,118,227	4.2%	3,193,141	3.2%	2,235,167	2.2%
5	Newark International	EWR	4,206,049	3.5%	1,727,741	1.7%	1,195,683	1.2%
6	San Francisco International	SFO	3,733,067	3.1%	2,766,313	2.7%	1,849,922	1.8%
7	Atlanta Hartsfield	ATL	2,815,326	2.3%	1,388,189	1.4%	824,445	0.8%
8	Houston Intercontinental	IAH	2,707,086	2.2%	1,366,437	1.4%	979,354	1.0%
9	Honolulu International	HNL	2,643,679	2.2%	3,018,233	3.0%	2,862,381	2.8%
10	Dallas/Ft. Worth International	DFW	2,194,048	1.8%	1,457,443	1.4%	1,241,025	1.2%
11	Washington Dulles	IAD	1,995,118	1.6%	1,346,921	1.3%	617,399	0.6%
12	Boston Logan	BOS	1,925,914	1.6%	1,430,193	1.4%	1,383,141	1.4%
13	Guam International	GUM	1,414,366	1.2%	1,186,534	1.2%	998,257	1.0%
14	Detroit Wayne County	DTW	1,278,650	1.0%	1,287,421	1.3%	705,362	0.7%
15	San Juan Luis Munoz	SJU	1,007,453	0.8%	972,471	1.0%	1,095,493	1.1%
	Total		55,734,687	45.7%	42,747,382	42.5%	33,293,542	33.1%
	Total U.S. Int'l Enp		121,862,000		100,629,964		88,862,892	
			International Enplanements Excluding Canada					
Rank	**Airport**	**Code**	**2000**	**% Share**	**1995**	**% Share**	**1990**	**% Share**
1	New York Kennedy	JFK	8,377,863	7.5%	8,018,762	8.6%	7,768,382	9.5%
2	Miami International	MIA	7,546,090	6.8%	7,122,874	7.7%	4,938,221	6.0%
3	Los Angeles International	LAX	7,537,717	6.8%	5,628,893	6.1%	3,899,929	4.7%
4	Chicago O'Hare	ORD	3,830,679	3.4%	2,219,132	2.4%	1,540,670	1.9%
5	Newark International	EWR	3,668,656	3.3%	1,435,672	1.5%	927,475	1.1%
6	San Francisco International	SFO	3,246,694	2.9%	2,441,194	2.6%	1,573,427	1.9%
7	Atlanta Hartsfield	ATL	2,533,937	2.3%	1,221,239	1.3%	824,445	1.0%
8	Honolulu International	HNL	2,457,151	2.2%	2,883,630	3.1%	2,718,315	3.3%
9	Houston Intercontinental	IAH	2,439,645	2.2%	1,285,737	1.4%	979,354	1.2%
10	Washington Dulles	IAD	1,871,578	1.7%	1,251,088	1.3%	609,306	0.7%
11	Dallas/Ft. Worth International	DFW	1,791,482	1.6%	1,205,569	1.3%	1,095,316	1.3%
12	Guam International	GUM	1,414,366	1.3%	1,186,534	1.3%	998,257	1.2%
13	Boston Logan	BOS	1,385,011	1.2%	911,716	1.0%	866,124	1.1%
14	San Juan Luis Munoz	SJU	1,007,453	0.9%	972,471	1.0%	1,085,881	1.3%
15	Detroit Wayne County	DTW	932,968	0.8%	750,762	0.8%	306,748	0.4%
	Total		50,041,290	45.1%	38,535,273	41.5%	30,131,850	36.7%
	Total U.S. Intl Enp excluding Canada		111,063,258		92,898,000		82,166,000	
			Transborder (Canada Only) Enplanements					
Rank	**Airport**	**Code**	**2000**	**% Share**	**1995**	**% Share**	**1990**	**% Share**
1	Chicago O'Hare	ORD	1,287,548	11.9%	974,009	12.6%	694,497	10.4%
2	Los Angeles International	LAX	655,555	6.1%	459,945	5.9%	391,960	5.9%
3	Boston Logan	BOS	540,903	5.0%	518,477	6.7%	517,017	7.7%
4	Newark International	EWR	537,393	5.0%	292,069	3.8%	268,208	4.0%
5	San Francisco International	SFO	486,373	4.5%	325,119	4.2%	276,495	4.1%
6	Dallas/Ft. Worth International	DFW	402,566	3.7%	251,874	3.3%	145,709	2.2%
7	Detroit Wayne County	DTW	345,682	3.2%	536,659	6.9%	398,614	6.0%
8	Miami International	MIA	294,433	2.7%	241,660	3.1%	224,704	3.4%
9	New York Kennedy	JFK	284,048	2.6%	134,211	1.7%	82,719	1.2%
10	Atlanta Hartsfield	ATL	281,389	2.6%	166,950	2.2%	0	0.0%
11	Houston Intercontinental	IAH	267,441	2.5%	80,700	1.0%	0	0.0%
12	Honolulu International	HNL	186,528	1.7%	134,603	1.7%	144,066	2.2%
13	Washington Dulles	IAD	123,540	1.1%	95,833	1.2%	8,093	0.1%
14	Guam International	GUM	0	0.0%	0	0.0%	0	0.0%
15	San Juan Luis Munoz	SJU	0	0.0%	0	0.0%	9,612	0.1%
	Total		5,693,397	52.7%	4,212,109	54.5%	3,161,692	47.2%
	Total Transborder Enp		10,798,742		7,731,964		6,696,892	

Source: Department of Transportation (DOT), T3/T100 Combined/INS Form I-92 Data for Foreign Carrier Enplanements and U.S. Carrier International Enplanements

Subtopical Response TR-RC-1.9: Regional Economic Contribution

An important function of a gateway airport is to serve both local O&D passengers and connecting passengers with quality air service. The value to the region is better international air service than could be justified based on O&D passengers alone. With 50 percent connecting passengers, an airline can operate twice as many flights as the local market alone could support.

The value of a single international flight can be several times greater than the average domestic flight. LAX Master Plan Alternative D would result in employment gains by 2005 that equal those projected for the other LAX Master Plan alternatives. However, by 2015, LAX would serve approximately 78 MAP and would yield just slightly larger economic output than the No Action/No Project Alternative. There is a direct correlation between the number of passengers served and the character of the passengers (domestic vs. international) at LAX and the airport's contribution to the local and regional economy.

LAX's international gateway role is crucial to the economics of Los Angeles and Southern California. The international gateway role is threatened in the future by limited facilities at LAX and the other regional airports. Except for Ontario, the other airports in Southern California would have limited market strength and facilities to supplement LAX's role. Other competing U.S. cities and regions stand to benefit from this limitation because of their growing market base and their available or planned infrastructure.

This material was originally addressed in Chapter 1, Subsection 1.3.6, of the Draft LAX Master Plan Addendum.

Subtopical Response TR-RC-1.10: Airport Roles in the Region and Projected Regional Capacity Estimates

Table 4 lists each of the airports in the Los Angeles region and the role each plays within the region. Secondary airports augment the service provided by the region's primary airport (LAX). In other words, these airports enhance the air service to the region but cannot sustain the level of air service provided by the primary airport.

Table 4

Existing and Potential Commercial Service Airports in the Los Angeles Region

Primary Airport - the region's dominant international and domestic air service airport providing most of the region's air service.

Los Angeles International Airport (LAX)

Secondary Airports - smaller airports that augment air service provided by the primary airport.

Ontario International Airport (ONT)
John Wayne Airport (SNA)
Burbank-Glendale-Pasadena Airport (BUR)
Long Beach Airport (LGB)
Palm Springs International Airport (PSP)

Commuter Airports - provide connecting air service by offering commuter flights to the region's primary and secondary airports.

Oxnard Airport (OXR)
Palmdale Regional Airport (PMD)[1]

Other Airports with Potential for Commercial Aviation Use[2] - former military bases.

San Bernardino International Airport (SBD)
March Air Reserve Base (RIV) (March Inland Port)
Naval Air Station Point Mugu (NTD) (possible joint use)
Southern California Logistics Airport (VCV)

1 There are currently no airlines with scheduled service to Palmdale.
2 El Toro Marine Base has been removed from this list due to Orange County's acceptance of Measure W legislation.

Source: Landrum & Brown, Inc.

This material was originally addressed in Chapter 1, Subsection 1.3.1, of the Draft LAX Master Plan Addendum.

Subtopical Response TR-RC-1.10.1: SCAG Regional Transportation Plans - The 2001 Regional Transportation Plan (RTP) for Southern California, approved in April 2001, provides a regional allocation of forecast passenger demand for 2025. SCAG is required to update and revise the RTP at least once every three years. SCAG is currently preparing the 2004 RTP. The draft 2030 Preferred Regional Aviation Plan is SCAG Aviation Task Force's recommended passenger demand allocation for the 2004 RTP.

As of 2001, the SCAG estimated the existing airport capacity in the region at approximately 120 MAP.[80] The 2015 regional demand is expected to total 146.5 MAP. Approximately 73 percent, or 107 MAP, will be O&D demand by 2015. Table 5 below summarizes SCAG's estimated 2025 and 2030 passenger forecast allocation to the region's airports.

80 SCAG 2001 Regional Aviation Plan for the 2001 Regional Transportation Plan.

Table 5

SCAG RTP Passenger Allocation
Los Angeles Region Estimated Passengers in Millions

	2025	2030
Primary		
Los Angeles Int'l.	78.0	78.0
Secondary		
Ontario	30.0	30.0
El Toro[1]	29.7	0.0
John Wayne	8.4	10.8
Burbank	9.4	10.8
Long Beach	3.0	3.8
Palm Springs	2.8	3.2
Commuter		
Palmdale	1.7	12.8
March	1.7	8.0
San Bernardino	1.8	8.7
So. California Logistics	0.8	4.0
Total Passenger Activity	**167.3**	**170.1**

[1] As a result of the passage of Measure W in March 2002, El Toro is no longer considered as a commercial airport use.

Sources: SCAG 2001 and draft 2004 Regional Transportation Plans

The 2001 RTP included El Toro as an integral part of the region plan to meet the forecast demand. Without the conversion of El Toro to a civilian airport, the region's airports would have a projected shortfall of approximately 30 MAP, and would not have the capacity to accommodate the 2025 forecast for air services. In developing the draft 2004 RTP allocation, SCAG assumed many changes to the current character of the region's airports. For example, Palmdale would have long-haul domestic and international service.

These scenarios assume that demand not accommodated at LAX will remain in the region by simply shifting it to other airport resources, including several former military bases and other facilities far removed from the region's population and employment centers. It should not automatically be assumed that these airports will be able to provide the necessary additional capacity to handle future aviation demand. In several cases the airport owner/operator has no plans to pursue passenger air service. Other issues could undermine the validity of the SCAG scenario. For example, a third runway at Ontario may not be physically and politically feasible. Airspace conflicts between Ontario and San Bernardino could limit potential aircraft operations. March Inland Port may not choose to restrict service to only cargo flights. Even with high-speed rail lines, substantial numbers of air passengers may choose not to travel great distances to Palmdale or Southern California Logistics airports.

Subtopical Response TR-RC-1.10.2: Primary Airport - Los Angeles International - Much of LAX's existing competitive advantage is due to the foresight of the City thirty to forty years ago building sufficient facility capacity to handle long-term growth in aviation demand. As the first jet facility in the region, it was well established by the time the region had grown enough to support a multiple airport system. Many businesses in the region that depend on air transportation chose to locate near LAX and made substantial investments in facilities and improvements. Airlines and other service providers have supported LAX by making major commitments to this facility. The level and diversity of service provided at LAX has also created a synergy unmatched by other airports in the Los Angeles region.

LAX has more airline service and more in-place facilities such as runways, terminals, customs, cargo processing, and other facilities than any other airport in the region, it is projected to remain the region's primary international airport, with or without any expansion of facilities.

Subtopical Response TR-RC-1.10.3: Secondary Airports - The following sections discuss the existing conditions and published plans for each of the secondary airports in the Los Angeles region.

Ontario International Airport

Ontario International Airport (ONT), owned by the City of Los Angeles and operated by LAWA, is located approximately 35 miles east of downtown Los Angeles. About one-third of the airport's 1,463 acres is available for future expansion. The airport is well located within the regional ground transportation system, lying between the I-10 Freeway on the north and the SR-60 Pomona Freeway on the south; it is also accessible via a well-developed system of arterial and local roadways. ONT has two parallel runways, both of which are capable of accommodating large jet aircraft, but are too closely spaced to permit independent aircraft arrivals. The airport has two 265,000 sq. ft. passenger terminals with 26 contact gates available. Space is available for terminal development between and adjacent to the existing terminals. ONT's air service has grown over the past 15 years as development in the region has expanded into the eastern end of the Los Angeles region, known as the Inland Empire, and air travel demand in the area has correspondingly increased. ONT served 6.5 MAP in 2002. Scheduled passenger service remained predominantly short-haul (68.7 percent) in 2002, but medium-haul represented 27.6 percent and long-haul 3.7 percent. ONT is the only secondary airport to offer international non-stop air service. ONT offers service to two Mexican cities: Guadalajara and Hermosillo. Service to Hermosillo was added in 2002.

An update of the master plan for Ontario is currently underway. The ONT master plan will recommend the improvements needed to address the projected demand. The local community supports the airport's growth, and Ontario has the potential to capture a much larger share of total regional demand.

The draft ONT Master Plan Phase I passenger demand forecast includes both regionally unconstrained and constrained scenarios. The unconstrained forecast represents the demand generated within the airport's catchment area. The regionally constrained scenario assumes that other airports in the Los Angeles region will be constrained to capacities less than their collective shares of regional demand. Collectively, LAX, Long Beach, John Wayne, and Burbank airports are expected to reach their capacity and/or policy limitations between 2010 and 2015.

The regionally constrained scenario assumes that local passenger demand in excess of the capacity of the other airports in the region would flow, in part, to ONT. Even if ONT captures a larger share of the local Los Angeles region O&D demand, significant passenger activity would still be lost to airports outside of the Los Angeles region. Some connecting passengers would be routed over other domestic hubs and international gateways in other cities.

Through 2010, the regionally unconstrained and the regionally constrained forecasts for ONT are identical. O&D traffic at ONT is forecast to increase significantly between 2010 and 2015, when other regional airports would no longer be able to accommodate growth.

The preliminary regionally constrained forecast developed for the ONT Master Plan projects passenger demand to reach 9.9 MAP in 2010, 17.6 MAP in 2015, and 25.4 MAP in 2020. This 2015 activity level represents an increase of approximately 5.6 MAP over the regionally unconstrained scenario.

Just as LAX today serves a larger percentage of regional demand than the demand generated within its catchment area, under the regionally constrained scenario ONT is forecast to absorb a portion of the unserved demand from the constrained airports in the region beginning between 2010 and 2015. This level of captured passenger demand is forecast to reach approximately 11 MAP in 2020 and 13 MAP in 2030.

The ONT master plan forecast assumes that the percentage of domestic connecting passengers would be maintained at the historical level of 6 to 7 percent throughout the forecast horizon. International passengers are forecast to increase from 40,447 in 2002 to 1.9 MAP by 2030.

The regionally constrained scenario is recommended for use in future planning for ONT. However, future expansion will be phased to serve demand as it grows.

SCAG's estimates indicated in the 2001 RTP and draft 2004 RTP that ONT would need a new third runway to accommodate its forecast of 30 MAP in 2025 and 2030. SCAG recognizes that "a new third runway at ONT may be physically and politically infeasible" and may have unacceptable airspace conflicts with nearby San Bernardino International. It is beyond the scope of this study to determine whether a

third runway is needed at ONT, and if so, whether constructing a third runway is feasible. Potential airspace conflicts between ONT and San Bernardino are also outside the scope of the LAX EIS/EIR. The ONT Master Plan will recommend appropriate airside and airspace improvements to address the projected demand at the airport. Please see Topical Response TR-MP-2 for more details on issues related regional airport assumptions made by SCAG in developing the RTP.

Even with the expansion of passenger capacity at ONT anticipated by SCAG and demand forecast in the airport's master plan update, the ability of the Inland Empire and other regional airports to serve the regional demand in excess of LAX's capacity is questionable.

The regionally constrained scenario assumes that local passenger demand in excess of the capacity of the other airports in the region would flow, in part, to ONT. Even if ONT captures a larger share of the local Los Angeles region O&D demand, significant passenger activity would still be lost to airports outside of the Los Angeles region if the capacity of other regional is not expanded. Some connecting passengers would be routed over other domestic hubs and international gateways in other cities. LAWA has determined that ONT cannot feasibly replace the need for modernization of LAX under Alternative D.

John Wayne Airport-Orange County

About 28 percent of the region's 2015 domestic O&D demand (23.8 MAP) will be located within John Wayne Airport-Orange County's 60-minute access zone, but only 5.6 MAP in its catchment area. The airport served 7.9 MAP in 2002. The airport has only one relatively short air carrier runway (and a general aviation runway), limited facilities, significant environmental constraints, and severe policy restrictions. A court order issued in 1985 restricts passenger activity to 8.4 MAP and caps daily air carrier operations until 2005. The Orange County Board of Supervisors and the Newport Beach City Council adopted an amendment to this settlement agreement that provides for the addition of up to 6 terminal gates and allows annual passenger activity to grow to 10.8 MAP through 2015. The FAA has agreed to the amendment of the 1985 settlement agreement that continues limits on the number of daily commercial operations. The FAA agreed to the amendment because the operating restrictions were already in place prior to the passage of the Aviation Noise and Capacity Act (ANCA) of 1990. ANCA generally prohibits airport sponsors from imposing airport access restrictions such as passenger caps and curfews. Restrictions that were in place prior to ANCA are "grandfathered." The airport's 2003 Business Plan stated that the settlement amendment authorizes "significant enhancements to commercial airline operating capacity and significant improvements to commercial airline facilities at JWA." It further stated that the airport staff will "focus on the design, planning, concession, financing, operations, and communications requirements of a new master plan process."

The Airport is currently developing a short list of development concepts. The selected alternative and associated improvements will become part of the settlement amendment Implementation Plan, including a new terminal building that would provide up to six passenger loading gates. The design process is expected to be completed by mid-2005, with the following construction effort to be completed in 18 to 30 months.

The Airport is in an urban setting with residential development predominately on the south and southwest sides, commercial areas primarily east, west, and north, and an important natural area, Upper Newport Bay, south of the airport that provides habitat to many wildlife species. In en effort to balance the environmental, political, social, and economic demands and concerns regarding operations at the Airport, operations are subject to a number of regulations and restrictions including noise-based limitations on the type of aircraft permitted, a nighttime curfew on aircraft exceeding certain specified noise levels, and limitations on the number of average daily departures.

Based on these factors, the airport is expected to continue to provide service primarily to short-haul markets (59.6 percent in 2002), with limited service to major medium- and long-haul markets (32.6 percent and 7.8 percent in 2002, respectively).

Burbank-Glendale-Pasadena Airport

Burbank's catchment area is the second largest in the region, with 17.7 percent of the region's 2015 domestic O&D demand (14.9 MAP). Approximately 24 million domestic air travelers are projected to originate their trips within the 60-minute access zone in 2015. However, the forecast that was prepared as part of the recently completed Part 161 study shows Burbank with an activity level of only 7.2 MAP in 2020. The airport served 4.6 MAP in 2002. The forecast took into account the physical constraints of the

airport's infrastructure and the policy constraints of the governing body that owns the airport. The forecast found that the airport has environmental, physical, and policy constraints that will severely limit its ability to fully serve the demand potential of its market area. The airport authority has abandoned plans to build a replacement terminal. Scheduled passenger service remains almost exclusively short-haul (80.7 percent) and medium-haul (16.9 percent) in 2003, with only 2.4 percent of scheduled departures destined for long-haul markets (Hawaii). There is a voluntary operational curfew in effect from 10:00 p.m. to 7:00 a.m.

Long Beach Airport

The Long Beach Airport is owned and operated by the City of Long Beach. Approximately 43 percent of the region's domestic O&D market is projected to fall within Long Beach's 60-minute access zone by 2015, making it the airport most accessible to the greatest number of the region's O&D passengers after LAX. However, the catchment area for Long Beach overlaps the 60-minute access zones for LAX and John Wayne Airport, both of which have more extensive existing airline service. Long Beach's potential to attract additional passenger activity is further constrained by the current City of Long Beach policy limiting air carrier departures to 41 per day. With new service by jetBlue Airways and renewed interest from American Airlines, the airport is currently operating close to its policy limit of air carrier departures. Scheduled air carrier departures for April 2004 range from 30 (weekend days) to 32 (weekdays). The City is currently conducting a noise study for the purpose of determining whether supplemental slots (exceeding the 41 air carrier slot limit) will be allocated. The airport's scheduled service in 2002 was split fairly evenly among short-haul (25.0 percent), medium-haul (32.6 percent), and long-haul (42.4 percent) destinations. The policy limit allows an additional 25 daily commercial departures by smaller commuter aircraft, but an average of only 3.9 daily flights are scheduled for April 2004.

Palm Springs International Airport

This airport is located 105 miles from Los Angeles in Riverside County, at the edge of the Los Angeles region, and is a resort destination--not an alternative arrival location for Los Angeles. Palm Springs' scheduled air service is limited to commuter aircraft (89.3 percent) and only 3.6 percent of departures bound for destinations east of the Pacific and Mountain Time zones. Palm Springs served approximately 1.3 MAP in 2002.

Palm Springs International Airport is owned by the City of Palm Springs and operated by the Department of Transportation. The airport is located in Riverside County and serves the Coachella Valley. The City of Palm Springs' plans do not call for any major expansion to serve passengers from anywhere beyond the Coachella Valley and surrounding desert communities.

Palm Springs International Airport currently occupies approximately 923 acres. Like John Wayne Airport, Palm Springs has two runways--one for air carriers and the other for commuter/general aviation. Passenger facilities at Palm Springs consist of a single terminal building with 14 air carrier gates and 8 commuter gates. Automobile parking is limited. I-10 and local roadways provide the primary ground access to the airport.

There are no environmental or policy factors effecting operations, except for the potentially significant air quality impacts that would result from increased ground access traffic and the potential difficulty in meeting federal Clean Air Act conformity requirements.

Subtopical Response TR-RC-1.10.4: Commuter/Reliever Airports - The following sections discuss commuter/reliever airports in the Los Angeles region.

Palmdale Regional Airport

Palmdale Regional Airport is located on land leased from the Air Force at the Palmdale Production/Test Installation Air Force Plant No. 42, a military installation. This facility is separate and apart from the adjacent 17,000 acres purchased by the City of Los Angeles in the 1960s for future airport development. Civilian use of the Plant 42 airfield is permitted under a joint use agreement with the Air Force. The airfield includes two air carrier-length runways. The terminal facilities on the Plant 42 property consist of one 9,000-square foot terminal with two aircraft parking positions. The airport is approximately 61 miles from the Los Angeles Central Business District with access from State Route 14 (no direct freeway access is provided).

Palmdale's remote location and limited local passenger market have made it difficult for airlines to maintain air service at the airport despite past subsidies by LAWA. Palmdale's only air service in the past consisted of commuter operations to LAX and other western hubs. About 19,000 passengers used the airport in 1997. In early 1998, the sole airline providing service at Palmdale ceased operations. Currently, Palmdale has no scheduled air service; however, an airline has shown interest in serving the airport, and new service is expected to start up in 2004.

LAWA is actively planning to make this airport into a viable supplemental airport in the region. The development of a master plan for Palmdale is underway. The master plan and associated environmental impact report are expected to be completed in 2005. The master plan study is in the process of identifying facility needs and conceptual plans for the development of the airport on Plant 42 or LAWA's own property. However, LAWA has determined that Palmdale cannot feasibly replace the amount of increased air traffic projected to go to LAX through 2015. See also Topical Response TR-RC-5, Transferring LAX Operations to Palmdale.

Oxnard Airport

Oxnard Airport is located approximately 65 miles from downtown Los Angeles. The airport is owned by the County of Ventura and operated by the Oxnard County Department of Airports. Oxnard's catchment area in 2015 is forecast to contain 3.9 MAP in 2015. The airport consists of a single short runway with limited terminal, parking, and ground access facilities. The airport's only scheduled air service is to LAX. Increased air service at Oxnard will depend primarily on local demand and the willingness of airlines to establish service to other markets. In addition, the airport sponsor has no plans to improve airport facilities, thus limiting the airport's potential to provide direct service to most markets. About 80,000 passengers used the airport in 2000.

Subtopical Response TR-RC-1.10.5: Other Airports - The following sections discuss the existing conditions and published plans for other airports in the Los Angeles region.

Point Mugu

NAS Point Mugu is located on the California coast, approximately 65 miles northwest from downtown Los Angeles, near the cities of Oxnard, Port Hueneme, and Camarillo. Point Mugu has more extensive airfield facilities with greater potential capacity compared to nearby Oxnard Airport. Point Mugu's air carrier-length runways could accommodate commercial service by jet aircraft under a joint use agreement, although terminal and ground access facilities would need to be developed to facilitate commercial air service. While feasibility studies have been conducted, NAS Point Mugu has not been designated for closure or realignment pursuant to the Defense Base Closure Act of 1990, and this facility is presently not available for civilian use.

March Air Reserve Base/March Global Port

This is a civilian/military joint use facility is located 65 miles east of downtown Los Angeles and within Ontario Airport's current catchment area. Three hundred acres have been set aside for commercial cargo operations with the name of March Global Port. It is currently marketed only for cargo operations. The March JPA has considered restricting the March Global Port to serving only air cargo. Consequently, its ability to attract scheduled passenger air service is untested and uncertain.

San Bernardino International Airport

San Bernardino International's primary market area overlaps with much of the existing catchment areas of Ontario and Palm Springs. San Bernardino International Airport is 23 air miles east of Ontario International Airport. The close proximity of these two airports and the fact that Ontario has established air service with additional unused capacity makes the establishment of passenger service at San Bernardino International more difficult. Terminal facilities have been improved and the airport is attempting to attract passenger service. Currently it serves only as an aircraft maintenance facility. Its potential to attract air service is dependent on its ability to compete with well-established service at other airports, and with proposed commercial air service at March Air Reserve Base/March Global Port.

Southern California Logistics Airport

Southern California Logistics Airport is located in San Bernardino County near the City of Victorville along I-15 approximately 100 miles northeast of LAX. The airport is focusing its efforts on attracting cargo

activity and has no plans to pursue scheduled passenger service. Also, past modeling indicates that Southern California Logistics Airport is located too far from population and employment centers to serve substantial numbers of passengers.

Subtopical Response TR-RC-1.10.6: General Aviation Airports - The following sections discusses general aviation airports in the Los Angeles region.

Hawthorne Municipal Airport

The Hawthorne Municipal Airport is a general aviation reliever airport (FAA designation), owned and operated by the City of Hawthorne. Of the total 80 acres that constitute the airport, 53 are used as aircraft operation areas with 27 used for terminal, aircraft storage facilities and leases. The lighted runway is 4,956 feet long and 100 feet wide and can accommodate aircraft weighing up to 90,000 pounds (dual tandem wheel loading). The airport has a FAA operated Air Traffic Control Tower and a FAA Automated flight Service Station. Hawthorne Municipal Airport is also home to Northrop Grumman Aviation, Inc., a subsidiary of Northrop Grumman Corporation.

Van Nuys Airport

Located in the heart of the San Fernando Valley, Van Nuys Airport (VNY) is ranked as the world's busiest general aviation airport. VNY averages approximately one-half million takeoffs and landings annually, with 504,303 total operations in 2002. More than 100 businesses are located on the 730-acre airport, including six major fixed-base operators and numerous aviation service companies. VNY is one of four airports owned and operated by LAWA.

VNY plays a vital role in the Southern California airport system, serving a variety of private, corporate and government aviation needs. By providing a place for general aviation, VNY enhances both safety and efficiency at the region's commercial airports by reducing congestion and diminishing flight delays at Los Angeles International and other nearby airports. The economic impact from activities at VNY is estimated at $1.2 billion annually to the Southern California economy. The airport also provides a base and maintenance facilities for fire, police, air ambulance, search and rescue, and news media aircraft that serve the local community.

TR-RC-2: The Role of Deregulation in Aviation Planning

Introduction

Numerous comments were received calling for a more strict regulation of airline activities at LAX, and proposing that airlines be required to use other airports in the region and not LAX. This topical response briefly describes the role of deregulation in aviation planning. Additional detailed information on the role of deregulation in aviation planning is contained in Attachment 2, *The Role of Deregulation in Aviation Planning*, of the Final EIS/EIR.

Discussion

The Airline Deregulation Act in 1978 transformed the highly regulated aviation industry into a market-driven industry as domestic route and rate/fare restrictions were eliminated over a four-year period. Although the Airline Deregulation Act provided for new market freedoms (e.g., fare setting, scheduling, etc) and market consequences (e.g., consolidation and competition) for airlines, airports remain a highly regulated component of the transportation infrastructure at both the federal and local levels. A more coordinated airport system approach from a demand management/capacity enhancement perspective may well be, at first glance, more prudent and efficient, but the political and regulatory obstacles to achieve such coordination may prove discouraging in light of the likely and intense industry opposition from commercial, corporate and leisure aviation stakeholders. The use of price as either an incentive/disincentive to affect demand distribution among a set of regional airports is untested and non-compliant with current federal aviation regulations. With that said, aviation remains a pioneering industry and new rational approaches to demand management/capacity enhancement within an airport system (or among a set of airports with different owners/operators) may yet be achievable.

TR-RC-3: High-Speed Rail as a Solution to Airport Capacity and Demand

Introduction

Many comments were received promoting High Speed Rail (HSR) to a remote airport such as Palmdale as a way to address the regional aviation demands and/or to provide a suitable alternative to intra-state air travel. This topical response addresses these issues.

Discussion

Please see the Executive Summary, pages 1-27 and 1-28, of the Draft EIS/EIR for a narrative discussion of rail technology and its role in modifying passenger demand to airports in the Southern California region. As stated on page 1-28, it is highly speculative to forecast the number of air trips that could be reallocated to high-speed rail.

California High-Speed Rail Authority

The California High-Speed Rail Authority (CHSRA) is mandated by state legislation to develop plans for a statewide high-speed rail system and is pursuing the development of a 700-mile long network of electronically powered high-speed trains capable of speeds of up to 220 miles per hour on dedicated, grade-separated tracks with state-of-the-art safety, signaling and automated train control systems. Their publicly released Draft Business Plan, dated January 2000, set forth a recommended route to be studied in the environmental clearance process and also set forth a proposed development schedule. The route to be studied would connect several cities in the Bay Area, San Francisco International Airport, Sacramento, Bakersfield, Palmdale, Burbank, downtown Los Angeles, LAX, Riverside, Anaheim, San Diego, and several cities in between.

The development schedule for the CH-SRA system is 16 years. The process began with a three year "EIR/federal-level Tier 1 Environmental Impact Statement (EIS)", at which the *Draft Program EIR/EIS for he Proposed California High-Speed Train System* was released on January 27, 2004 and the 90-day public review period began on February 13, 2004. The Draft Program EIS/EIR evaluates three alternatives including: (1) a No Project/No Action Alternatives that assumes the state's regional transportation system (highway, air, and conventional rail) as it exists today, as well as after implementation of programs and projects that are currently in regional transportation plans and have identified funding for implementation by 2020; (2) a Modal Alternative that assumes a combination of highway and aviation system improvements; and (3) a High-Speed Train Alternative. The Draft Program EIS/EIR is available for public review and comment until May 13, 2004, after which written responses to comments received on the document will be prepared. That will be followed by public hearings by the California High-Speed Rail Authority and the U. S Department of Transportation Federal Railroad Administration, which, should they approve the High-Speed Train Alternative, will provide the basis for selecting a preferred corridor/alignment, general station locations, and recommended mitigation strategies. Preliminary engineering for that system will then occur and a project-level EIR/EIS will be completed over the course of approximately 3 years.

Environmental work and preliminary engineering is expected to cost $370 million. The state budget for 2000 included $5 million to begin the environmental work. Construction of the entire 700-mile system is expected to require a total of 10 years following environmental clearance (i.e., system is scheduled to begin operation in 2017) and the cost to implement the representative high-speed train system, which reflects a similar network of alignment and station options to that presented in the Authority's Business Plan, is estimated to range between $33 billion and $37 billion (2003 dollars), depending on the alignment and station options selected. The first segments completed are expected to be intra-regional, and links between San Francisco, Los Angeles, and San Diego are not expected to be completed until later in the construction period.

The High-Speed Train Alternative proposes a system that would stretch from San Francisco, Oakland and Sacramento in the north, through the Central Valley, to Los Angeles and San Diego in the south. It would be connected to the state's existing transportation network, with station links to airports, inter-city rail and bus lines, commuter rail lines and urban rail transit lines. The proposed high-speed rail alignment

would not connect to LAX; Los Angeles Union Station (LAUS) is proposed as the Los Angeles terminus for the high-speed rail system.

Travel times, fares, and passengers for the high-speed rail are forecast in the Draft Business Plan and the Draft Program EIR/EIS. Typical express travel times are expected to be one hour between the downtowns of Los Angeles and San Diego and two and one-half hours between the downtowns of Los Angeles and San Francisco. Total travel costs (not just fares) for high-speed rail express service between Los Angeles and either San Francisco or San Diego are expected to be about 40 percent of the cost of air travel. (Air travel cost includes, in addition to fares, travel time to and from the airport and other costs.)

A potential high-speed rail system would compete with the airlines providing service at each of the Los Angeles region airports. Reallocation of this demand among the region's airports and a future potential high-speed rail system would depend on the relative convenience of the inter-city travel options and the passengers' sensitivity to those convenience factors. The two primary convenience factors are travel time and cost. The passenger would weigh each option's relative total travel time and cost in making a choice of travel modes. The passenger would also consider the perceived risk of delays with each of the options. If the proposed CH-SRA system is developed as outlined in the business plan, it is likely that some air trips would be reallocated to high-speed rail trips.

In the Los Angeles region, it is uncertain how much demand would be reallocated from air trips to high-speed rail trips and which airports would have reduced air trips as a result of the new service. It is most likely that airports with the least convenient travel options - due to lower service, higher travel times, or higher cost - could see a reduction in demand. Given the high level of air service from LAX to these high-speed rail markets, LAX would likely see the lowest passenger diversion to high-speed rail. Also, LAX's growing markets are in the international markets, which high-speed rail will provide a supporting role to LAX by providing more connecting opportunities for some passengers. However, even for the airports that currently have less air service to these markets, the reallocation would depend on the airlines' response to this competitive service mode.

The California HSR Authority's Business Plan suggests that up to 56 percent of the LAX to Oakland/San Francisco/San Jose/Sacramento passenger traffic would be diverted to HSR. If this assumption were realized, approximately 4.5 MAP would be diverted to HSR. However, the forecasted unconstrained aviation demand is nearly 98 MAP at LAX in 2015. Demand for air service at LAX would not be dramatically affected by the operation of a state-wide HSR system that would provide an alternative transportation mode to other California population centers. This is especially true relative to the LAWA staff-preferred alternative for the LAX Master Plan - Alternative D, being designed to serve a future (2015) airport activity level of 78.9 MAP is anticipated to have a portion of the unmet demand go to other airports and transportation facilities in the region.

Even on a larger, regional scale, the Southern California commercial airport system recommended by the Southern California Association of Governments (SCAG) in the Draft 2004 Regional Transportation Plan (RTP) is planned to only partially accommodate the future regional aviation demand. The regional aviation system passenger demand for 2030 is approximately 192 MAP; however, the Preferred Aviation Plan recommended in the Draft 2004 RTP is designed to only accommodate approximately 170 MAP, with the remaining 22 MAP of unmet demand likely to leave the region. The increased likelihood of passengers in the Southern California area to use other means of intercity travel, such as high-speed rail should it be developed, is a possible outcome of an undersized regional aviation system, which is unlikely to materially affect the future demand- at, and operation of, LAX as addressed in the Final LAX EIS/EIR.

Funding for the HSR system has not been determined. Half of the financing for construction is planned to come from a statewide bond issue scheduled for the November 2004 ballot. If this measure is defeated, high-speed rail projects throughout the state would be delayed or terminated. Most of the rest of the funds for construction are slated to come from federal surface transportation programs. Those funds have not yet been authorized or appropriated by the U.S. Congress.

Intra-Regional (Southern California) Maglev System

(SCAG has identified a 275-mile system of high-speed magnetically levitated (Maglev) train alignments to connect major activity and transportation centers in Los Angeles, Orange, Riverside, and San Bernardino Counties. SCAG envisions that the Maglev system would ultimately connect to San Diego as well. The

Maglev trains would ride on a cushion of air along a monorail guideway at speeds up to 310 mph. The trains would be levitated and propelled magnetically through a propulsion system located in the guideway, which can either be elevated or at grade. Proponents of the technology maintain that Maglev will be able to efficiently transport passengers and cargo in an environmentally friendly and energy-efficient manner. They also argue that the elevated guideway can be built on existing rights-of-way, with land consumption and related impacts minimized.

As described in SCAG's adopted 2001 RTP for Southern California and their Draft 2004 RTP, SCAG has been studying the feasibility of deploying four Maglev corridors in the Southern California region. According to the Draft 2004 RTP's listing of Regional Maglev Milestones, these corridors would connect LAX to the March Inland Port in Riverside County by the year 2020, LAX to Palmdale by 2024, Los Angeles Union Passenger Terminal (LAUPT) to Orange County by 2030, and LAX to the Irvine Transit Center in Orange County by 2030. SCAG also envisions that the Maglev system would include a connection to San Diego and a connection between San Bernardino and Palmdale via a high-desert alignment and interlining with the proposed California High Speed Rail System sometime after the year 2030. In October 2003, SCAG completed an assessment of the right-of-way along the freeway and railroad corridors, and an analysis which included potential ridership, Los Angeles Union Passenger Terminal capacity, financial feasibility, and an identification of an Initial Operating System (IOS).

This 56-mile IOS of the Maglev system would connect West Los Angeles via Union Station in downtown Los Angeles to Ontario Airport. The IOS is a component of the 92-mile corridor connection LAX with March Inland Port. The Draft 2004 RTP for Southern California anticipates that the private sector would build the IOS between the years 2015 and 2018. The Maglev system would be financed through tax-exempt bonds and the Federal Transportation Infrastructure Finance and Innovation Act (TIFIA) and repaid through project-generated revenues. No operating subsidies would be required. As the next steps in the development of the Initial Operating System, SCAG's Draft 2004 RTP states that SCAG is planning to conduct preliminary engineering, form a Joint Powers Authority, market projects to public/private stakeholders, secure funds at the local, state, and federal levels, and seek community and legislative support.

The SCAG-sponsored Maglev studies closely analyzed the effects that a high speed Maglev system would have on the system of regional airports in Southern California. The studies demonstrated that the capacity needs at LAX would be little changed by a high-speed mass transportation connection to the intra-regional system. The technical studies demonstrated that small shifts might take place in certain categories of air passenger trips from LAX to other airports in the region. However, these shifts would be offset by new air passenger trips being attracted to LAX in other categories. The net effect is that forecasted air passenger demand would remain virtually unchanged at LAX airport if connected to the sub-area system of Maglev routes.

The same conclusion was reached about a high speed Maglev line between LAX and Palmdale Airport. The LAX to Palmdale High Speed Ground Access Study sponsored by SCAG closely analyzed the potential effect of a high speed link to/from LAX to Palmdale with intermediate stops in West Los Angeles and the San Fernando Valley. Once again, the study concluded that minor shifts in air passenger demand from LAX to Palmdale would be offset by newly-attracted air passenger trips to LAX. The study concluded that the attractiveness of LAX would be too great to lose activity to other airports, when connected to other airports by high speed intra-regional mass transportation links.

In the Draft 2004 Regional Transportation Plan for Southern California, SCAG's list of Regional Maglev Milestones does not anticipate that the IOS corridor connecting West Los Angeles to Ontario will be operational by 2015. This proposed corridor would not connect to LAX until after 2018. Therefore, LAX operations would not be impacted by the proposed Maglev system throughout the 2015 forecast horizon for the LAX Master Plan.

Conclusions

If and when high-speed rail systems are constructed in the state and/or Southern California region, its potential impact on the Los Angeles regional airports in general and LAX in particular remains uncertain. Based on current information, it is clear that increased use of rail, which may occur as a result of a potential future high-speed rail system, is not a reasonable alternative to meeting the future regional air travel demand.

At this time, and particularly with the State of California's current fiscal crisis, there is no assurance that either the statewide HSR system or SCAG's proposed regional Maglev system will ever be funded and constructed. The City of Los Angeles has neither the authority nor the financial resources to construct any high-speed rail systems proposed for the state or the Southern California region.

TR-RC-4: Orange County Air Transportation Demand

Introduction

Many comments were received on the Draft EIS/EIR recommending that the former Marine Corps Air Station (MCAS) El Toro be converted to civilian commercial use and questioning why Los Angeles County, in particular LAX, should provide airport facilities for residents of Orange County. This topical response addresses, in general, those types of comments.

Discussion

Based on the type of comments received regarding Orange County air transportation demand and plans for MCAS El Toro, the discussion provided in this topical response is divided into five subtopics.

Subtopical Response TR-RC-4.1: Elimination of El Toro as a Commercial Airport

Marine Corps Air Station (MCAS) El Toro was designated for base closure in 1993 under the Defense Base Closure and Realignment Act. Orange County was designated by the Department of Defense as the Local Redevelopment Authority and the County began planning the development of a commercial service airport as their preferred base reuse alternative. The County developed an El Toro Airport Master Plan and prepared extensive Environmental Impact Reports in accordance with CEQA. The El Toro Master Plan projected activity levels of 23.4 MAP in 2015 and 28.8 MAP in 2020. SCAG's 2001 RTP, approved in April 2001, anticipated the development of a commercial service airport at El Toro and projected 2025 demand at El Toro to be 30 MAP. Recent actions, however, appear to have eliminated the likelihood of future air service at El Toro.[81]

On March 5, 2002, voters in Orange County passed Measure W that designated non-aviation land uses, primarily in the form of a proposed regional park (i.e., the "Orange County Great Park"), for 4,700 acres of land at the former MCAS El Toro. Passage of Measure W changed the County's official land use designation for the property from that of a commercial airport to a mix of recreational, educational, cultural, and open-space uses.

On April 23, 2002, the Department of the Navy issued its Record of Decision (ROD) for the disposal of MCAS El Toro and determined that it would dispose of the base in a manner consistent with state and local land use plans, and in accordance with lawful disposal authorities, including public sale. In making its determination, the Department of the Navy determined that "mixed land use is consistent with the Orange County General Plan, as recently amended by the passage of the Orange County Central Park and Nature Preserve Initiative (Measure W) on March 5, 2002, and the City of Irvine General Plan. Mixed land use also will meet the goals of local economic redevelopment and job creation set out in the [Defense Base Closure and Realignment Act of 1990]." With respect to future aviation uses of MCAS El Toro, the ROD also noted that "Passage of Measure W, which limits the use of MCAS El Toro to non-aviation re-use, prohibits the FAA and the Department of the Navy from being able to consider the preferred alternative [the Reduced Commercial Airport Alternative that was based upon a publicly adopted amendment to the Orange County General Plan] identified in the Final EIS. FAA therefore at this time has no further role in the decision making process for the disposal of MCAS El Toro. That function solely rest now with the Department of the Navy."

In December 2002, SCAG acknowledged that El Toro is no longer available for use as a commercial airport.[82] SCAG directed staff to terminate all planning for aviation services at El Toro, unless and until a further vote of the citizens of Orange County repeals Measure W (requires a two-thirds majority approval

[81] El Toro Reuse Planning Authority, Press Release, March 6, 2002.

[82] Settlement Agreement Between the El Toro Reuse Planning Authority and the Southern California Association of Governments, December 5, 2002.

by voters), further appellate court proceedings invalidate Measure W, or the federal government acts to preempt Measure W.

In April 2003, the City of Los Angeles submitted a memorandum to the U.S. Department of Transportation (DOT) requesting that the DOT intervene in the Navy's base closure process. The City asked the DOT to seek special legislation that would convey ownership of El Toro to the DOT for ultimate transfer to the City of Los Angeles to operate the site as a commercial airport as part of the Los Angeles World Airports (LAWA) system. The DOT returned the City's memorandum with a recommendation that the City discuss issues of ownership and transfer with the Navy. The DOT took this action in keeping with the DOT policy that decisions regarding development of civilian airports rest with local authorities. The Navy indicated their intent to dispose of the property as specified by their April 2003 ROD for a non-aviation use.

The City of Irvine has actively supported the development of a major park ("Orange County Great Park") and related non-aviation uses on the former MCAS El Toro for many years. In May 27, 2003, the City of Irvine published the Final Program EIR for the Orange County Great Park. As part of the continuing process required to realize the objective, the City addressed in the Final Program EIR issues related to annexation, general plan amendment, and zoning, as well as related actions. Subsequently, the Airport Working Group of Orange County, Inc. (AWG), a non-profit, pro-airport organization, along with the Orange County Regional Airport Authority (OCRAA) and Citizens for Jobs and the Economy, filed a lawsuit against Department of the Navy, challenging the validity of the Navy's EIR for disposal of the El Toro property. Currently, the Department of the Navy is seeking to reach a settlement with the plaintiff.

The September 30, 2003 headline news of the El Toro Info Site stated that it was previously forecasted that the land auction and sale would take place in 2003. The City of Irvine must first annex the property, as it is federal land owned by the United States Navy, before allowing the public auction to commence." However, the annexation hearing was postponed until November 12, 2003. The November issue of the UCI campus paper reported: "The decommissioned El Toro USMC Air Station is set for auction in early 2004." This new timeline could be further be delayed by additional litigation brought by airport proponents.

Subtopical Response TR-RC-4.2: John Wayne Airport-Orange County

The airport has only one relatively short air carrier runway (and a general aviation runway), limited facilities, significant environmental constraints, and severe policy restrictions. The capacity of the existing airport (runway and terminal system) will limit its ultimate growth. The airport's small size and limited opportunities for expansion due to adjacent land uses constrain its ultimate expansion potential. Based on these factors, the airport is expected to continue to provide service primarily to short-haul markets, with limited service to major medium- and long-haul markets. The airport served 7.9 MAP in 2002.

The Orange County Board of Supervisors and the Newport Beach City Council amended a court order issued in 1985 that restricted passenger activity to 8.4 MAP. The settlement agreement amendment provides for the addition of up to 6 terminal gates and allows annual passenger activity to grow to 10.8 MAP through 2015. The FAA has agreed to the amendment of the 1985 settlement agreement that continues limits on the number of daily commercial operations. Shortly after the FAA's approval of the amendment in 2002, John Wayne Airport received the necessary court order signed by the Honorable Terry J. Hatter, Jr. of the Central District Court of California to fully implement the new agreement. The airport's 2003 Business Plan stated that the settlement amendment authorizes "significant enhancements to commercial airline operating capacity and significant improvements to commercial airline facilities at JWA." It further stated that the airport staff will "focus on the design, planning, concession, financing, operations, and communications requirements of a new master plan process."

The Airport is currently developing a short list of development concepts. The selected alternative and associated improvements will become part of the settlement amendment Implementation Plan, including a new terminal building that would provide up to six passenger loading gates. The design process is expected to be completed by mid-2005, with the following construction effort to be completed in 18 to 30 months.

The Airport is in an urban setting with residential development predominately on the south and southwest sides, commercial areas primarily east, west, and north, and an important natural area, Upper Newport Bay, south of the airport that provides habitat to many wildlife species. In an effort to balance the environmental, political, social, and economic demands and concerns regarding operations at the Airport,

operations are subject to a number of regulations and restrictions including noise-based limitations on the type of aircraft permitted, a nighttime curfew on aircraft exceeding certain specified noise levels, and limitations on the number of average daily departures.

Subtopical Response TR-RC-4.3: User Fees for Orange County Residents

LAX is a public facility and is supported by grants from the FAA. It is illegal to charge different fees to users of the same facility and thus discriminate among users.

Subtopical Response TR-RC-4.4: LAWA Role in Regional Planning

The City of Los Angeles owns and LAWA controls the operation and potential expansion of four airports: LAX, Ontario, Palmdale, and Van Nuys. The other regional airports are controlled by other jurisdictions that are responsible for their respective operation and expansion.

Even if the other airports in the region were to start assuming a greater role in accommodating the region's aviation demand, LAX would likely continue to serve as the region's predominant airport for international passenger and cargo activity in the short-term. This is a result of the specialized facilities and services that have developed around LAX over time to serve the needs of international customers. Despite being one of the busiest airports in the country in terms of cargo tonnage, much of the cargo handled at LAX is flown on passenger flights. Moving this segment of the region's cargo is not feasible.

Subtopical Response TR-RC-4.5: Ontario International Airport

An update of the master plan for Ontario is currently underway. The ONT master plan will recommend the improvements needed to address the projected demand. The Phase I Forecast document of the ONT Master Plan projects passenger demand at ONT of 17.6 MAP in 2015. The local community supports the airport's growth, and Ontario has the potential to capture a much larger share of total regional demand. Space is available for terminal development between and adjacent to the existing terminals. ONT's air service has grown over the past 15 years as development in the region has expanded into the eastern end of the Los Angeles region, known as the Inland Empire, and air travel demand in the area has correspondingly increased.

ONT served 6.5 MAP in 2002. ONT is the only secondary airport to offer international non-stop air service. Just as LAX today serves a larger percentage of regional demand than the demand generated within its catchment area, ONT is forecast to absorb a portion of the un-served demand from the constrained airports in the region beginning between 2010 and 2015. This level of captured passenger demand is forecast to reach approximately 11 MAP in 2020 and 13 MAP in 2030.

The draft passenger demand forecast for the ONT master plan update includes both regionally unconstrained and constrained scenarios. The unconstrained forecast represents the demand generated within the airport's catchment area. The regionally constrained scenario assumes that other airports in the Los Angeles region will be constrained to capacities less than their collective shares of regional demand. Collectively, LAX, Long Beach, John Wayne, and Burbank airports are expected to reach their capacity and/or policy limitations between 2010 and 2015.

The regionally constrained scenario assumes that local passenger demand in excess of the capacity of the other airports in the region would flow, in part, to ONT. Even if ONT captures a larger share of the local Los Angeles region O&D demand, significant passenger activity would still be lost to airports outside of the Los Angeles region. Some connecting passengers would be routed over other domestic hubs and international gateways in other cities.

Through 2010, the regionally unconstrained and the regionally constrained forecasts for ONT are identical. O&D traffic at ONT is forecast to increase significantly between 2010 and 2015, when other regional airports would no longer be able to accommodate growth.

The preliminary regionally constrained forecast developed for the ONT Master Plan projects passenger demand to reach 9.9 MAP in 2010, 17.6 MAP in 2015, and 25.4 MAP in 2020. This 2015 activity level represents an increase of approximately 5.6 MAP over the regionally unconstrained scenario.

The ONT master plan forecast assumes that the percentage of domestic connecting passengers would be maintained at the historical level of 6 to 7 percent throughout the forecast horizon. International passengers are forecast to increase from 40,447 in 2002 to 1.9 MAP by 2030.

The regionally constrained scenario was recommended for use in future planning for ONT. However, future expansion will be phased to serve demand as it grows.

SCAG's estimates indicated in the 2001 RTP and draft 2004 RTP that ONT would need a new third runway to accommodate its forecast of 30 MAP in 2025 and 2030. SCAG recognizes that "a new third runway at ONT may be physically and politically infeasible" and may have unacceptable airspace conflicts with nearby San Bernardino International. It is beyond the scope of this study to determine whether a third runway is needed at ONT, and if so, whether constructing a third runway is feasible. Potential airspace conflicts between ONT and San Bernardino are also outside the scope of the LAX EIS/EIR. The ONT Master Plan will recommend appropriate airside and airspace improvements to address the projected demand at the airport. Please see Topical Response TR-MP-2 for more details on issues related to regional airport assumptions made by SCAG in developing the RTP.

TR-RC-5: Transferring LAX Operations to Palmdale

Introduction

Many comments were received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR suggesting that development of new facilities at the Palmdale Regional Airport and relocation of some or all airline operations from LAX to Palmdale Regional Airport should be pursued in lieu of the LAX Master Plan. This topical response describes some of the key factors affecting the development and use of Palmdale Regional Airport as an alternative to LAX.

Discussion

Based on the type of comments received regarding the suggested transfer of LAX operations to Palmdale Regional Airport, this topical response has been divided into eight subtopics.

Subtopical Response TR-RC-5.1: LAWA's Efforts to Encourage Operations at PMD

Since LAWA entered into a Joint Use Agreement with the USAF in 1989, LAWA has actively worked with City of Palmdale in marketing the airport to commercial air carriers, commuter airlines, cargo operators, and aircraft maintenance and repair facilities to encourage airline operations to transfer to Palmdale. In an effort to open the facility to international maintenance and cargo carriers, LAWA also obtained a commitment from the Department of Treasury to coordinate for customs and federal inspection services at Palmdale as the need arises.

In 1996, LAWA and USAF prepared a joint administrative Draft EIR/EIS for the proposed expansion of commercial aviation at the Palmdale Airport as envisioned in the 1989 Joint Use Agreement. The administrative Draft EIR/EIS was reviewed by the USAF and was determined to insufficiently address air quality conformity for the proposed increase from 200 to 400 operations a day. The Draft EIR/EIS has not been completed and is on hold by the USAF.

In 1998, LAWA commissioned a study to determine the maximum theoretical long-term potential of Palmdale Airport, without regard to costs, to improve access or develop airport facilities. The study was completed in October 1999 and concluded that the Palmdale facility was unlikely to be an international gateway or major domestic airport in the 2020 timeframe. Although the study recognized that the passenger potential was highly speculative, it did conclude that the airport could take a role in meeting the regional demand for air cargo service and aircraft fleet maintenance.

As a result of LAWA's active marketing efforts, in December 1999 LAWA entered into an agreement with SR Technics America, Inc., a subsidiary of the SAir Group (formerly Swissair Group), to establish its North America headquarters for aircraft maintenance and conversion operations at Palmdale Airport. Under the agreement, SR Technics leased 150 acres of the 17,000-acre airport site owned by the City of Los Angeles. To support that role, LAWA, the City of Los Angeles, and the members of a Palmdale Working Group have aggressively supported the development of high-speed rail to Palmdale as well as various road and highway improvements for access to Palmdale Airport. LAWA has actively supported development of a high-speed rail system that will serve the Antelope Valley in general and Palmdale in particular. LAWA and the Palmdale Working Group have been working with California Department of

Transportation (Caltrans) to identify key projects in the Route 14/138 corridor that would improve freeway access to the Palmdale Airport. The City of Los Angeles approved transfer of an easement from LAWA to Caltrans, allowing Caltrans to expand Route 138 on LAWA property. In March 2002, the Los Angeles Board of Airport Commissioners approved a draft Cooperative Agreement with Caltrans. The draft Cooperative Agreement, granting a 309-acre easement for constructing the SR-138 bypass in Palmdale, will be valid for a period of 25 years, and is subject to an extension of an additional 25 years. This action is another example of LAWA's effort in collaboration with the City of Palmdale and Palmdale's Community Redevelopment Agency to improve the transportation infrastructure around Palmdale Airport to help attract more businesses to the airport.

In the aftermath of September 11th terrorist attacks and the general downturn in the airline industry, Swiss Air declared bankruptcy, and, therefore, SR Technics was forced to close its facility by the end of February 2003. On February 18, 2003, the Los Angeles Board of Airport Commissioners authorized airport management to negotiate a purchase agreement with SRTP Liquidation, Inc, which subsequently took over the former SR Technics facility. The Board's action demonstrate LAWA's continuing commitment to promote development of Palmdale by acquiring the facility, which would play an important role in attracting new businesses to the airport.

LAWA also provided subsidies to the airlines operating at Palmdale. Despite such incentives, the airport's remote location and limited local passenger market have made it difficult for airlines to maintain air service at the airport. Palmdale's only air service in the past consisted of commuter operations into LAX and other western hubs. About 19,000 passengers used the airport in 1997. Cargo enplaned at the airport during the same period was less than 1 ton. In early 1998, the sole airline providing service at Palmdale ceased operations. Although Palmdale currently has no scheduled air service, LAWA is actively engaged in seeking a carrier to reinstate passenger service as quickly as possible. In fact, an airline has shown interest in serving the airport, and new service is expected to start up in 2004.

Currently, plans are underway to construct a new cargo ramp and bypass taxiways to improve cargo facilities at the airport. The project is part of LAWA's ongoing efforts to expand operations at Palmdale, which began in 1999 with a Cooperation Agreement between the cities of Los Angeles and Palmdale to actively market the airport. Also, underway is a Master Plan for Palmdale Airport, which will provide a guide for the development of the airport and define its role in the regional airport system over the next 25 years. The Palmdale Airport Master Plan and associated environmental impact report are scheduled to be completed in 2005.

Despite the strong commitment and continuous efforts LAWA has made over the years, it is unlikely that Palmdale will serve increasing regional passenger and cargo demand in the near term because of its distant location from the major population and employment centers. The following sections discuss the principles of airline economics and passenger demand.

Subtopical Response TR-RC-5.2: Multi-Airport Markets

Most major population and commercial centers throughout North America and beyond are multi-airport markets including Los Angeles, New York, Chicago, Miami, London, Paris and Tokyo to name a few. In these major markets, the evolution and development of multiple commercial and reliever airports has been demand-driven: that is, passenger and air cargo growth has required increasing aviation capacity (i.e., supply) to accommodate demand that is financially feasible to users. The laws of supply and demand are at work and observable in the aviation economic question. In the modern era (i.e., post-World War II to present), aviation demand has outpaced both economic output and, in many major markets, available capacity. Such capacity or supply-side constraints are increasingly challenging airport operators, regulators, policy makers, citizens, and stakeholders, particularly with respect to the very real and quantifiable trade-off of the resulting economic benefits and environmental impacts generated by aviation activity.

The emergence of multiple airport markets has been a function of many factors including but not limited to Capacity, Geography and Accessibility, and Airline Economics. Each of these factors is discussed in detail below and in context with the Palmdale Option.

Subtopical Response TR-RC-5.2.1: Capacity

Airport planners typically consider several capacity components including airfield (i.e., runways), landside (i.e., roadways, parking, curb frontage), facility (i.e., terminal) and airspace. Capacity can be measured

and examined at a single airport or cumulatively for multiple airports within a region. In addition to these airport capacity components, airlines, too, have capacity components including the size of aircraft (i.e., aircraft gauge - number of seats) and flight frequency (i.e., number of arrivals and departures).

- **Shifting Airline Capacity** - An airline's decision to initiate or expand air service is comprised of a number of market and airport facility criteria. From the market perspective, airline route planners examine and measure criteria such as:
  - **Potential Passenger Volumes -** An estimate of daily and annual passenger volumes are calculated through an analysis of population, the mix of business and leisure travelers, airline market share and the overall local demographic and economic conditions. Passenger volume estimates are then used to determine city-pair markets, frequency, and aircraft type.
  - **Revenues/Fares -** Major carriers employ complex airfare models to forecast demand and revenues. Historical fares by domestic carriers are available from the U.S. Department of Transportation so revenue estimates can be developed based on passenger price elasticity.
  - **Competitive Response -** Airlines remain highly competitive and a competitor's response to initiating or expanding service is an important criterion. Of local note is the competitive dynamics recently observed between American Airlines and jetBlue Airways at Long Beach Airport.

  These and other route planning criteria must be sufficiently attractive for the profit-driven airline to initiate and sustain air service. Among the facility criteria an airline considers are:

  - **Location/Access** - An airport's location in relation to both residential and commercial concentrations is a key determinant for sustainable air service.
  - **Terminal and Airfield Features -** The availability of sufficient terminal (i.e., gates) and airfield capacity is required yet not always available. Note Burbank and Long Beach airports' severe terminal capacity constraints.
  - **Airport Rates & Charges** - The direct airport operating costs should not be onerous as measured by the cost per enplanement metric. Airlines have withdrawn from markets due to high airport costs: for example, Southwest Airlines withdrew from both Denver and San Francisco due to high airport costs.
  - **Splitting Airline Passenger and Air Cargo Services** - There is a perception among many observers and commentors that air cargo and passenger aircraft can be easily "split" between or among airports in a multi-airport market. While in some cases and for select airlines this may be feasible, there are several significant barriers including but not limited to:
  - **Combination Service -** Many foreign flag carriers and at least one U.S. carrier (i.e., Northwest Airlines) provide both passenger and all-cargo flights at LAX. Typically, the local management and operations (i.e., ground handling/warehousing, etc) of this combination of passenger and cargo service is inseparable and economically undesirable.
  - **U.S. Postal Service** - The U.S. Postal Service ("USPS") is a major contractor with both U.S. passenger airlines and more recently FedEx. Splitting all-cargo flights between or among airports would likely degrade airmail service as it has been structured since the dawn of commercial aviation.
  - **Promise to Deliver** - The express all-cargo carriers, mostly notably FedEx and United Parcel Service ("UPS"), argue that relative proximity to population/commercial density is critical to achieve the overnight "promise to deliver," the hallmark service of express carriers.
  - **Unamortized Investment** - As with any decision to relocate, even involuntarily, an air carrier to a new or reliever airport, any unamortized facility investment should be considered.
- **Segregation of Segments and Sectors -** In the post-Deregulation environmental and with the emergence of cross-border airline alliances (e.g., Star Alliance), the segregation of airline segments (i.e., mainline and regional) between airports within a region would defeat the airline business model that is highly dependent on coordinating segments and sectors for scheduling, marketing and revenue purposes.
  - **Mainline and Regional -** The expansion of mainline (i.e., United Airlines jets) and regional (United Express aircraft) scheduling coordination is expected to accelerate going forward given the highly successful proliferation of regional jets.

- **U.S. and Foreign Flag Carriers -** Although there are strict ownership restrictions regarding international equity in flag airlines, U.S. and foreign flag carriers have increasingly expanded their marketing and operating relationships to include sharing passenger traffic through code-sharing and other joint marketing agreements. In addition, in order to reduce airport station costs, cooperating U.S. and foreign flag carriers will often share facilities and staff including ticket counters and ground handling personnel and equipment.
- **Case in Point - Montreal Mirabel -** In the 1970s, Transport Canada constructed a new international airport located approximately 30 miles from Montreal's central business district and segregated the international and transborder (i.e., U.S. flights) to Mirabel while keeping all domestic Canadian flights at Dorval. This sector segregation is often cited as a major reason why several European airlines withdrew service from the Montreal market. The sector segregation also resulted in the near elimination of connecting activity in Montreal, a once vibrant airline hub.

Subtopical Response TR-RC-5.2.2: Geography and Accessibility

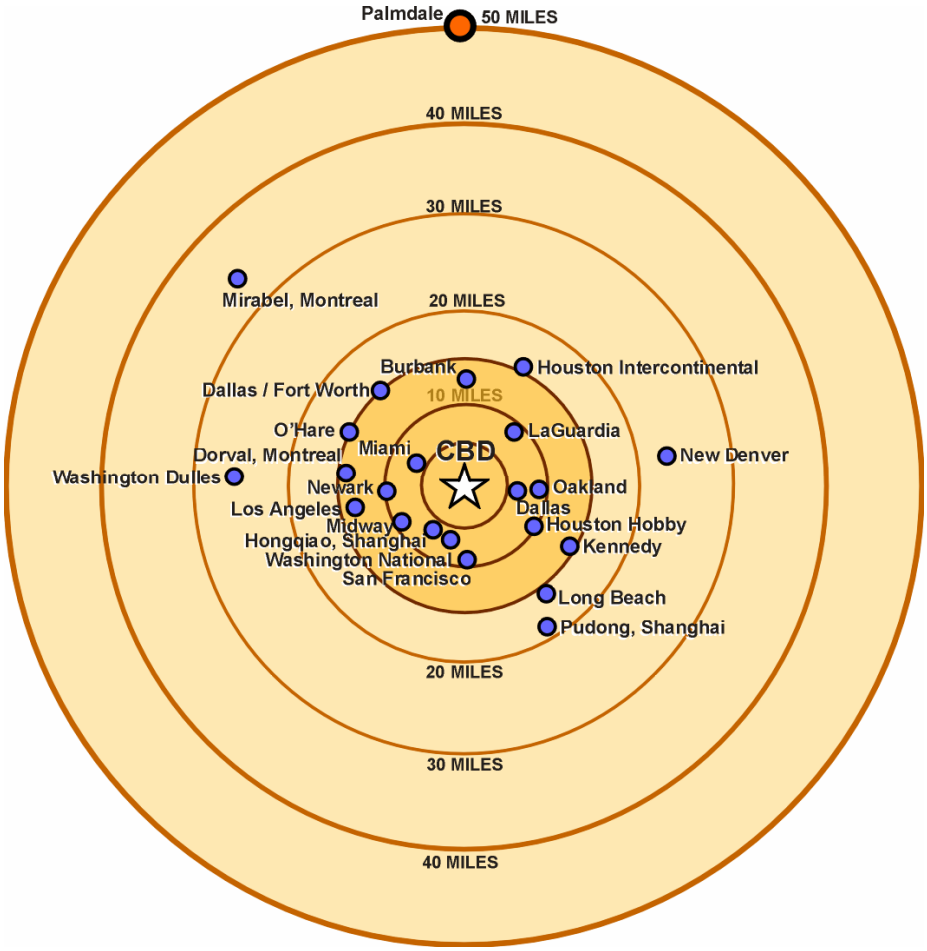
The location of commercial service airports within a multi-airport region is often the result of historical airfield development sponsored by either local entities or the joint/adapted use of military airfields. An airline's decision to serve a "reliever" airport within a region is a function of many factors. With respect to geography (and assuming estimated passenger volumes within the reliever airport's catchment area), air carriers consider a range of factors including those related the following:

- Total Elapsed Travel Times - Travel professionals, airlines, and passengers do consider the total time of their trip on all modes; therefore, time and distance metrics to/from an airport to final destination are a key part of the travel choice calculus.
- Promise to Deliver - Air cargo express carriers like FedEx and UPS are obligated to deliver their overnight packages by a pre-determined local time to avoid refund penalties.

Subtopical Response TR-RC-5.2.3: Accessibility/Demographics

From a commercial air service perspective, convenient landside access is a key determinant in the decision to initiate and expand scheduled air service for both passenger and all-cargo operations. Airlines and passengers consider what is called total elapsed travel time ("TETT").

Without high speed/dedicated landside access, growth at Palmdale would be limited to a local catchment area (a geographically defined area encompassing a local passenger base) and exclude large portions of the greater Los Angeles metropolitan market area.



Subtopical Response TR-RC-5.2.4: Airline Economics

In the post-Deregulation era, major and regional carriers have developed extensive hub and spoke systems where a full range of air service options are provided to multiple markets, both domestic and international. Prior to Deregulation, the airline approach to route and scheduling decisions was largely based on providing point-to-point air service in the regulated marketplace. Illustrated below are two exhibits that describe the pros and cons of both the Hub & Spoke and Point-to-Point schedule models.

The Old "Point-to-Point" Route System

Pre-Deregulation (1978)

THE SCENARIO

BOSTON PASSENGERS
25 pax to Chicago
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
100 pax *from* Boston

NEW YORK PASSENGERS
25 pax to Chicago
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
100 pax *from* New York

WASHINGTON PASSENGERS
25 pax to Chicago
25 pax to Los Angeles
25 pax to Seattle
25 pax to Phoenix
100 pax *from* Washington

CHICAGO PASSENGERS
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
25 pax to Phoenix
100 pax *from* Chicago

THE RESULTS
400 pax traveling
16 aircraft required
4 aircraft departing each city
Lower Load Factors
Unnecessary airspace congestion
Poor profitability and aircraft utilization

Revised March 4, 2003 10:24 AM
c:\docs\d4000\aviation\hub and spoke system.ppt

In this highly simplified illustration, the point-to-point route system required a considerable number of aircraft (16) operating at lower load factors. An economically infeasible and inefficient industry was "profitable," only because fares were set in collaboration with the Civil Aeronautics Boards in order to insure break-even or better financial results. Today, Point-to-Point service is limited to only the largest city-pair markets (e.g., LAX-NYC).

The Hub Concept

Post-Deregulation, airlines optimized operations and maximized profitability.

THE SAME SCENARIO

BOSTON PASSENGERS
25 pax to Chicago
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
100 pax *from* Boston

NEW YORK PASSENGERS
25 pax to Chicago
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
100 pax fly *from* New York

WASHINGTON PASSENGERS
25 pax fly to Chicago
25 pax fly to Los Angeles
25 pax to fly to Seattle
25 pax fly to Phoenix
100 pax fly *from* Washington

CHICAGO PASSENGERS
25 pax to Los Angeles
25 pax to Seattle
25 pax to San Francisco
25 pax to Phoenix
100 people *from* Chicago

THE RESULTS
Same number of people traveling 400
Only 7 aircraft required instead of 16
Higher Load Factors

Revised March 4, 2003 10:21 AM
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In the hub and spoke model, fewer aircraft (7) are needed to carry the same number of passengers leading to impressive economic efficiencies in a very capital-intensive industry. Although some industry observers suggest from time to time that the hub and spoke system is not working, there is no evidence that suggests it will be abandoned. In fact, even the highly successful low-fare carriers including Southwest, jetBlue, American Trans Air, and AirTran use the hub & spoke model at their respective "focus" cities (i.e., hubs).

An airline's decision to initiate air service at a new airport station is often the result of a number of economic and other considerations. Typically, an airlines route planning staff develops detailed pro formas that estimate and project revenues and expenses in addition to traffic volumes for passenger and air cargo. A sample list of such pro forma line items is summarized below in **Table 1** in addition to other considerations that are weighed which are largely non-quantitative in nature.

Table 1

Revenues	Expenses	Other Considerations
Average Fares	Landing Fees	Competitive Response
Air Mail Revenues	Airport Rents and Fees	Presence of Alliance Partners
Air Cargo Revenues	Crewing Costs	Airport Access
Airport-Airline Revenue Sharing (Residual)	Marketing/Advertising	Aircraft Maintenance Facilities
3rd Party Ground Handling Revenue	Ground Service Personnel and Equipment	Available Employment Pool
	Fuel Costs/Fees	Terms of Airport Use Agreement
	Wages & Benefits	Airspace Constraints
	Revenue Dilution from Other Airports	Peak Hour Delays
	Catering Fees	Political Constraints
	Other	

Subtopical Response TR-RC-5.3: Supplemental versus Replacement Airports

A number of comments related to the use and expansion of Palmdale Airport indicate the partial or complete shifting of passenger and all-cargo service from LAX to Palmdale. This frequent comment subject raises the issue of Palmdale Airport's future use as either a *supplemental* (i.e., reliever) or *replacement* airport for LAX.

As a *supplemental* airport, Palmdale appears as a feasible long-term option depending upon its capacity and accessibility to a sufficiently large passenger population base over the long term. Palmdale as a *replacement* airport to LAX is infeasible for a number of economic reasons including unamortized investments at LAX, costs of relocation, demand suppression of both the passenger and air cargo market due to its location in relation to the most dense market area, and recent and strong objections to "remote" replacement airports including Montreal Mirabel, Chicago Peotone and Milan, Italy to name a few.

Subtopical Response TR-RC-5.4: Airline Pricing

In the post-Deregulation era, air carriers have been free to price airfares as they see appropriate so long as anti-competitive predatory pricing is not employed. With the proliferation of information technology, air carriers quickly applied the new computing power in order to establish highly sophisticated airfare pricing programs, which are generally referred to as "yield management." Yield management, first pioneered by American Airlines through its Sabre computer system, enables air carriers to price tickets by time-of-day, day of week, length of haul, duration of travel, origin & destination specific, seasonality, class of service and a myriad of other economic and pricing considerations *including* airport-specific pricing (i.e., LAX vs. Burbank).

As indicated in **Table 2**, since 1992, average domestic airfares at Los Angeles area airports have been higher at LAX than other regional airports.

Table 2

Los Angeles Area Airport Average Domestic Fares 1991-2002

Year	Burbank BUR	Los Angeles Intl LAX	Long Beach LGB	Ontario ONT	John Wayne SNA
1991	76	149	100	110	143
1992	78	144	111	108	147
1993	76	153	118	110	158
1994	70	143	101	101	143
1995	69	139	96	99	141
1996	76	143	85	102	145
1997	77	147	97	105	141
1998	78	152	132	108	152
1999	83	153	152	111	155
2000	89	165	151	118	165
2001	86	153	148	110	150
2002	**87**	**149**	**138**	**108**	**133**
2002 LAX: Other	171%	N/A	107%	138%	111%

Source: Department of Transportation (DOT) 10% Ticket Sample

However, when airfares are examined on the basic unit of revenue (i.e., revenue per seat per mile), the cost of airfares at LAX has remained materially lower than other regional airports. In 2002, the full low-fare effect of jetBlue Airways' aggressive entry into Long Beach has pushed average yield (i.e., revenue per seat per mile) below the LAX average yield. **Table 3** provides historical average domestic yield in cents per seat mile by airports in the Los Angeles area.

Table 3

Los Angeles Area Airports Average Domestic Yield (CPM) 1991-2002 Cents per Seat Mile

Year	Burbank BUR	Los Angeles Intl LAX	Long Beach LGB	Ontario ONT	John Wayne SNA
1991	15.28	10.21	12.89	11.4	12.92
1992	14.9	9.83	12.95	10.75	12.41
1993	14.82	10.81	13.95	11.74	13.44
1994	13.76	10.19	12.51	11.22	12.64
1995	13.45	10.2	14.36	11.06	12.91
1996	14.55	10.55	13.19	11.19	13.76
1997	15.18	10.52	9.84	11.42	13.28
1998	15.23	10.66	12.48	11.62	14.1
1999	16.03	10.74	13.86	11.75	14.01
2000	16.63	11.33	13.3	12.1	14.75
2001	15.27	10.18	10.99	10.9	13.15
2002	**14.08**	**9.61**	**8.19**	**10.3**	**11.66**
2002 LAX: Other	68%	N/A	117%	93%	82%

Source: Department of Transportation (DOT) 10% Ticket Sample

Therefore, although average domestic fares remain higher at LAX, the cost of air travel as measured by the yield metric (which accounts for longer trip lengths) is lower at LAX than other regional airports. This empirical data confirms commentors' observations that LAX is "cheaper" and therefore draws traffic from passengers who might choose a regional airports if airfares were the same or cheaper than LAX.

In addition to the basic airfare, an increasing number of taxes and fees are levied on top of airfares. **Table 4** lists some examples of these surcharges.

Table 4

As of January 1, 2003	Rate	Unit of Taxation
Passengers		
Federal Flight Segment Tax	$3.00	Domestic Enplanement
Federal Security Surcharge	$2.50	Enplanement at U.S. Airport
Airport Passenger Facility Charge	Up to $4.50	Enplanement at Eligible U.S. Airport
International Departure Tax	$13.40	International Passenger Departure
International Arrival Tax	$13.40	International Passenger Arrival
INS User Fee	$7.00	International Passenger Arrival
Customs User Fee	$5.00	International Passenger Arrival
APHIS	$3.10	International Passenger Arrival
Shippers		
Cargo Waybill Tax	6.25%	Waybill for Domestic Freight
Sales/Operations		
Frequent Flyer Tax	7.50%	Sale of Frequent Flyer Miles
APHIS Aircraft Fee	$65.25	International Aircraft Arrival
Jet Fuel Tax	$0.043	Domestic Gallon
LUST Fuel Tax	$0.001	Domestic Gallon
Air Carrier Security Fee	Carrier-Specific	Domestic/International Enplanement

Source: Air Transport Association

Subtopical Response TR-RC-5.5: Airport Choice

A passenger's decision to depart from a particular airport in a multi-airport market involves a number of factors including but not limited to:

- **Fares** - Certainly airfares are a significant factor in influencing airport choice in a multi-airport market. The establishment of a low fare carrier (e.g., Southwest or jetBlue Airways) has proven the power of lower fares in luring passengers to major (e.g., LAX) or regional airports (e.g., Long Beach, Burbank). At airports that have an array of airlines in which competition is enhanced, lower fares are typically observed as well.
- **Access** - Surface or public transportation access to any commercial airport is a key determinant for airline service and passenger choice.
- **Total Elapsed Travel Time** - Passengers also consider what the total time requirements are from the point of origin (i.e., home/office) to the point of destination including travel time in automobiles and/or other modes.
- **Network** - The total number of non-stop destinations and the frequency of service is a significant factor influencing airport choice as well, particularly for business travelers who highly value the flight selection that higher frequency offers.
- **Airport Facilities** - Airport parking rates and proximity to the terminal can also influence airport choice. In some cases the overall quality of airport/terminal facilities (e.g., presence of airline clubs, etc) can also be a factor in airport choice.

Curiously enough, these same factors are weighed by air carriers when deciding on the level of scheduled service at a regional airport. Another factor considered by air carriers in a multi-airport market is leakage: that is, how does adding flights/seats at a regional airport dilute passenger volumes at the major airport? Air carriers view the market in total with an economic hesitancy to dilute a larger operation while committing incremental staff, aircraft, and ground equipment (i.e., increased capital and operating costs) to service the regional airport segment.

Subtopical Response TR-RC-5.6: Global Alliances

Insofar as the international aviation market remains a regulated segment of the industry, both U.S. and foreign flag carriers began forming extensive marketing alliances throughout the 1990s as part of a strategy to increase international market penetration, reduce operating costs and provide better service

levels for shared passengers. Alliances have become "branded" products complete with joint marketing efforts, shared airport facilities, pooled frequent flyers program credits, and even shared aircraft liveries and logos.

Alliances often require that the "host"/hub carrier (e.g., United at LAX) to maintain a sufficiently robust domestic route network at their respective gateways in order for the alliance partner (e.g., Singapore Airlines) to fully exploit domestic connecting opportunities. Again, it is often the ability to sustain and grow connecting traffic (either on-line or via interline agreements) that contributes to an alliance airline's flight profitability. Therefore, the combination of domestic hub/international gateway activity (which largely defines LAX's air service) becomes inseparable by economic necessity.

Summarized in **Table 5** are the major global airline alliances and their respective members:

Table 5

Geographic Coverage of Major Airline Alliances

Alliance	North America	Europe	Asia	South America
Star	United Airlines Air Canada Mexicana	Lufthansa SAS British Midland Austrian Airlines Tyrolean Airways Lauda Air	All Nippon Airways Thai Airways Singapore Airlines Air New Zealand	Varig
oneworld	American Airlines	British Airways Iberia Finnair Aer Lingus	Qantas Cathay Pacific	LanChile
SkyTeam	Delta Air Lines Aeromexico	Air France Alitalia CSA Czech	Korean Airlines	
Wings	Continental Airlines Northwest Airlines	KLM Royal Dutch		

Source: Deutsche Bank Securities Inc. and Landrum & Brown, Inc.

Subtopical Response TR-RC-5.7: An Airport Operator's Role in Allocating Air Service

Insofar as *airlines* were deregulated (i.e., free to set routes/fares) while airports remain highly regulated (with respect to setting fees and charges), airports have few options to influence either airport choice or demand/airline allocation particularly in multi-airport markets in which multiple airport operators have conflicting needs and constraints with respect to scheduled air service. Facility constraints may discourage travelers from choosing a particular airport and several airport operators have enforced artificial air service barriers such as New York-LaGuardia and Washington-Reagan National's perimeter rules limiting the distance of non-stop flights. Local airport operators remain subordinate to federal aviation regulations which do not permit airport operators to deny access to any aviation user group without proving greater benefits to costs, a high hurdle not yet fully tested.

Subtopical Response TR-RC-5.8: Demand, Capacity and Control

In addition, given that airport capacity (supply) in the form of airfield, terminal, and landside facilities may well be available at regional facilities, passenger activity (demand) is not easily accommodated by a geographical shift. Certainly improved access, air service development, airline incentives, marketing campaigns, etc. can facilitate a geographic shift where demand (passenger activity) would move to the supply (airport capacity). However, the existing fractured management of Los Angeles Basin airports

combined with the extensive capital investment at LAX and resistance by the owners of the region's secondary airports will make a shift of this nature difficult.

Conclusion

LAWA has made a commitment to promote the development of Palmdale Regional Airport as a supplemental airport in the Los Angeles airport system. LAWA has provided subsidies to the airlines operating at Palmdale and has granted an easement to Caltrans to improve access to the Antelope Valley and Palmdale. Despite such incentives, the airport's remote location and limited local passenger market have made it difficult for airlines to maintain air service at the airport. Palmdale's only air service in the past consisted of commuter operations into LAX and other western hubs. LAWA is actively engaged in seeking a carrier to reinstate passenger service as quickly as possible. Also underway is a Master Plan for Palmdale Airport, which will provide a guide for the development of the airport and define its role in the regional airport system over the next 25 years. Despite the strong commitment and continuous efforts LAWA has made over the years, it is unlikely that Palmdale will serve increasing regional passenger and cargo demand in the near term because of its distant location from the major population and employment centers.

The discussion above based on the principles of airline economics and passenger demand suggests that shifting, splitting or segregating airline operations (as opposed to supplemental expansion) through regulation could jeopardize airline financial performance and therefore, the levels and sustainability of scheduled air service.

The availability of airport capacity alone is not a sufficient condition to generate (or relocate) demand within a regional system of airports. Aviation is a mass transportation market requiring appropriately located capacity proximate to (or adequately accessible) so that air transportation economies of scale can be achieved. Air transportation economies of scale are observed in the concentrated development of hub and spoke systems in the post-Deregulation era, a system that is unlikely to materially change in the foreseeable future. As a *supplemental* airport, Palmdale is arguably feasible; as a replacement airport to LAX, Palmdale is economically and geographically unattractive and, therefore, infeasible.

Airport choice involves a number of factors not the least of which is the price of air travel - fares. Average fares are actually higher at LAX than other regional airports in the Los Angeles Basin; however, the average trip length at LAX compared to other regional airports in considerably longer. When examining fares at the unit cost level, airfares at LAX have been significantly lower than all commercial airports in the region with the newest exception of Long Beach where jetBlue Airways has driven fares lower with its low cost service. Many other factors discourage air carriers from expanding air service at regional airports including, but not limited to, dilution of traffic at the primary airport as well as increased operating and capital costs. Although airport capacity (supply) may well be available at other regional airports (e.g., Palmdale), "moving" demand is no simple task and air carriers (and other users) cannot be compelled to relocate air service activity under the current federal aviation regulations and airport pricing constraints.

TR-SAF-1: Aviation Safety

Introduction

A number of comments received on the Draft EIS/EIR pertained to aviation safety at and near LAX, both as it exists today and under the Master Plan alternatives. In particular, a number of commentors were concerned that an increase in aviation operations would increase runway incursions at LAX and/or aviation accidents at or near LAX. As such, this topical response addresses existing aviation safety at LAX, the relationship between the number of aviation operations and accidents/incidents, and the airspace capacity in the Los Angeles basin. In addition, this topical response summarizes the airfield modifications that would be implemented under the proposed LAX Master Plan build alternatives that would reduce the risk of runway incursions at LAX.

Discussion

As discussed in Section 4.24.3, Safety, of the Draft EIS/EIR, the FAA is charged with regulating, promoting, developing, and ensuring the safety of civil airports, including LAX. As a result of these efforts, aviation is one of today's safest forms of public transportation. LAWA, as operator of LAX, also

serves a lead role in providing for, and maintaining, the high level of aviation safety that exists at the airport. FAA's statutory mission is to ensure the safe and efficient use of navigable airspace in the United States. Any decision to further develop LAX is the responsibility of the City of Los Angeles. FAA's role in the Master Plan process is to ensure that whatever development proposal is selected by the City of Los Angeles will be operated in a safe and efficient manner.

FAA's Airport Design Standards establish, among other things, land use related guidelines to protect people and property on the ground. These include the designation of safety zones that keep areas near runways free of objects that could interfere with aviation activities and that provide smooth, flat areas around the boundaries of a runway. Additionally, the FAA provides standards for runway, taxiway, and taxilane design, including width, length, separation, radius of turns, layout, and pavement material composition. These standards are published in FAA Circular 150/5300-13, Airport Design and are intended to provide for a high degree of safety in any setting, be it a densely populated urban area or a rural area. For the most part, the current design and operation of LAX are responsive to FAA Airport Design Standards. However, the size of today's larger aircraft have resulted in the need to employ some special procedures for such aircraft to operate safely on the ground in areas that were originally designed for smaller aircraft. The existing airfield at LAX was originally designed to serve the first commercial jet aircraft, such as the Boeing 707 and Douglas DC-8. Today's commercial aircraft fleet includes larger aircraft, such as the Boeing 747-400 with a wingspan approximately 50 percent wider than those earlier jet aircraft with even larger aircraft, such as the Airbus A380, programmed to enter commercial service in 2006.

Under all Master Plan build alternatives, all modified (all build alternatives), and new (Alternatives A and B only) runways would satisfy FAA airport design standards and increase the operational efficiency of the airfield. The proposed improvements under each of the build alternatives, described in Chapter 3, Alternatives, of the Draft EIS/EIR (Alternatives A, B, and C), and Supplement to the Draft EIS/EIR (Alternative D) would increase runway and taxiway separations for larger aircraft by adding parallel taxiways between runways, and by increasing safety areas to meet current FAA standards. These changes would reduce controller workload and the associated risk of runway incursions, as discussed below, as well as reduce the risk of aircraft damage in the event of a runway overrun.

Runway Incursions at LAX

As discussed in Chapter 3, Alternatives, of the Supplement to the Draft EIS/EIR, a runway incursion, as defined by the FAA, is any occurrence in the airport runway environment involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in a loss of required separation with an aircraft taking off, intending to take off, landing, or intending to land. In June 2002, FAA published a study entitled, "FAA Runway Safety Report: Runway Incursion Trends at Towered Airports in the United States - CY 1998 - CY 2001." This report identified a total of 1,460 runway incursions out of 268 million airport operations in the U.S. that resulted in three collisions and four fatalities over the four years studied. LAX had 38 total runway incursions during the period of the FAA study and had an average rate of occurrence of 1.24 incursions per 100,000 operations. Annual runway incursions at LAX totaled 12, 10, 8, and 8, respectively, for the years 1998 through 2001. The annual rates of runway incursions for the same period marked 1.55, 1.28, 1.02, and 1.08 per 100,000 operations, respectively, as well.

In July 2003, the FAA published the updated Runway Safety Report, which, unlike the previous version, compiled the data on a fiscal-year basis (i.e., October through September) in order to comply with the Government Performance and Results Act (GPRA) requirements. This FAA Runway Safety Report reflected the runway incursion trends for fiscal years 1999 through 2002. The report indicated that the annual runway incursions at LAX totaled 9, 10, 9 and 6, respectively, over the four years studied. The rate of the runway incursions at LAX for the same period marked 1.17, 1.28, 1.15 and 0.94 per 100,000 operations, as well. It is important to note that the discrepancies in the annual runway incursion figures between the 2003 report and the 2002 report were inevitable since the two reports used different measurements in compiling the data (i.e., fiscal year vs. calendar year).

In order to better understand what LAX's runway incursion figures truly mean, it is necessary to compare its data with that of other airports. The annual runway incursion rates at the other airports with similar airport layouts and volume of operations are provided below:

Atlanta Hartsfield (ATL)
- 1998: 0.24 per 100,000 operations
- 1999: 0.66 per 100,000 operations
- 2000: 0.33 per 100,000 operations
- 2001: 0 per 100,000 operations
- 2002: 0.45 per 100,000 operations

Dallas Ft. Worth (DFW)
- 1998: 0.54 per 100,000 operations
- 1999: 0.81 per 100,000 operations
- 2000: 0.35 per 100,000 operations
- 2001: 0.75 per 100,000 operations
- 2002: 0 per 100,000 operations

Phoenix Sky Harbor (PHX)
- 1998: 1.32 per 100,000 operations
- 1999: 0.53 per 100,000 operations
- 2000: 0.94 per 100,000 operations
- 2001: 1.65 per 100,000 operations
- 2002: 1.04 per 100,000 operations

Data listed above for the years 1998 through 2001 were obtained from the 2002 FAA Safety Runway Report while data for 2002 were obtained from the 2003 counterpart of the report. During the period of 1998 through 2001, ATL had 11 total runway incursions and had an average rate of occurrence of 0.31 incursions per 100,000 operations. DFW had 21 total runway incursions during the same period and had an average rate of occurrence of 0.61 incursions per 100,000 operations. PHX had 26 total runway incursions during the same period and had an average rate of occurrence of 1.11 incursions per 100,000 operations. Of these three airports, ATL should be more closely observed since it is the most similar to LAX in terms of operational characteristics (e.g., runway layout and the volume of operations). During the same period of time, LAX had four times the average rate of occurrence of runway incursions than ATL although it had approximately 20 percent fewer operations than ATL. LAX ranked first as the airport that had the greatest number of runway incursions for the four-year period, followed by North Las Vegas Airport (32) and St. Louis-Lambert International (31).

FAA also classifies runway incursions by their relative severity. The highest severity is given to an incursion in which extreme action is needed to avoid a collision or if a collision occurs. Five of the 38 runway incursions at LAX during the period of the 2002 FAA report were in this category and none of the five resulted in a collision. Over 80 percent of these incursions took place on the South Airfield Complex.

The goal of FAA is to raise awareness of runway incursions, identify solutions, and implement strategies to reduce their severity and frequency as well as the risk of a runway collision. Airport surface radar technology and airport infrastructure implementation at key airports like LAX are some of the strategies identified by FAA to help solve the problem. LAWA has already implemented improvements to airfield lighting, taxiway marking, runway signage, and has sponsored on-going seminars on airfield familiarization with airport users. For example, in September 2001, the FAA commissioned the Airport Movement Area Safety System (AMASS) at LAX. AMASS increases the safety of aircraft and vehicles operating on the surface of the airport. However, more improvement is needed. Taxiway system configuration is one of the key infrastructure methods to solving the problem.

The airfield modifications, including changes to the taxiway system configuration, under Alternatives A, B and C, and under Alternative D are described and illustrated in Chapter 3, Alternatives, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, respectively.

The airfield modifications proposed under Alternatives A, B, C, and D present a physical solution that would reduce the risk of runway incursions through the elimination of the existing high-speed taxiway exits directly linking parallel runways at LAX. The existing airfield requires landing aircraft to exit the outboard runways onto high-speed taxiways that provide an unimpeded route to a neighboring parallel runway on which simultaneous aircraft departures are occurring. The existing airfield has four full-length

taxiways providing east-west routes for aircraft to maneuver on the airfield, none of which are between either pair of runways. Two new parallel taxiways, one between each pair of parallel runways, would be constructed under each of the proposed build alternatives. The number of taxiways directly linking parallel runways would be reduced under each of the build alternatives. Alternative D would reconfigure all of the existing high-speed exit taxiways that directly cross the inboard departure runways to direct arriving aircraft onto the new center parallel taxiway. The reduction or elimination of unimpeded high-speed access for arriving aircraft to the neighboring departure runway would reduce the likelihood of a pilot inadvertently taxiing beyond a runway hold bar and into the path of a departing aircraft.

In addition to the proposed parallel taxiways between each pair of runways, each build alternative would extend existing Taxiway D, which is located north of existing Terminals 1, 2 and 3, to the west boundary of the airfield increasing available east-west taxi routes to taxiing aircraft. The airfield improvements proposed under Alternatives A, B, C, and D would increase the number of available east-west taxi routes at LAX from four to at least seven. Each improved or proposed taxiway would be constructed to meet current FAA airfield design standards for wide-body aircraft enhancing access to contact gates designed specifically for wide-body aircraft and eliminating the need to bus passengers across the airfield to remote aircraft hardstands for boarding.

Aviation Incidents and Accidents

Section 4.24.3, Safety, and Technical Report S-9b, of the Supplement to the Draft EIS/EIR present historical U.S. aviation accident information, updated from that provided in the Draft EIS/EIR to include Year 2000 data, from the FAA's Bureau of Transportation Statistics (BTS), the National Transportation Safety Board (NTSB), and the Airline Transportation Association (ATA). At the local level, information on the incident and accident history at LAX was obtained from the FAA and the NTSB for reference purposes and updated through the Year 2000 as part of the Supplement to the Draft EIS/EIR.

As indicated in Section 4.24.3, Safety, of the Draft EIS/EIR and Supplement to the Draft EIS/EIR, the number of passengers carried on large U.S. commercial airlines, as well as flight hours, miles flown, and departures by these same carriers have more than doubled since 1982. However, the fatal and non-fatal accident rates have significantly fallen during this same period of time. As discussed in Section 4.24.3, Safety, of the Draft EIS/EIR, aircraft incidents and accidents are usually the result of random sequences of unusual events that rarely repeat in the same way with the same result. The accident rate data information provided in the Draft EIS/EIR and Supplement to the Draft EIS/EIR offer little or no predictive reliability for specific types of incidents and accidents at specific airports because of the low number of accidents (as compared to operational measures such as the number of passengers carried, hours flown, miles flown, or aircraft departures).

Therefore, while the number of aircraft operations under each of the Master Plan alternatives are projected to increase compared to baseline conditions, there is no statistical correlation between the number of operations and number of incidents and accidents. Because of the lack of statistical correlation, it is not possible to quantify an increase in aircraft incidents or accidents due to the increased operations. Strict adherence to FAA rules and regulations pertaining to aircraft safety would ensure that no compromise in aviation safety would occur, although additional operations may necessitate increases in air traffic control personnel at LAX.

Airspace Capacity in the Los Angeles Basin

The National Airspace System (NAS) is an arrangement of navigational facilities, federal regulations, air traffic control separation standards, surveillance capabilities, and personnel including pilots and air traffic controllers. The FAA is responsible for the seamless operation of the NAS that ensures the safety and efficiency of the air transportation system.

Airspace capacity is the capacity of a given airspace area to accommodate the flow of aircraft at the times desired by aircraft operators including the commercial air carriers, military and general aviation populations. Safe airspace capacity is made possible by an organized system of communications, navigation, surveillance and regulatory systems, air traffic control facilities and controllers. All of which, combine to provide the highest level of safety to persons and property in the air and on the ground.

Theoretically, airspace capacity within the NAS is infinite as the cubic volume of airspace is sufficient to allow all existing aircraft to be airborne simultaneously and not be in conflict with one another. This

theory does not hold true in major metropolitan areas where routes to and from multiple airports become congested at peak travel times.

Airspace capacity is negatively impacted when airport capacity is incapable of meeting the demand. The inability of the airport to meet demand may be a function of runway and taxiway configuration, lack of sufficient gates to accommodate aircraft, the types of navigational facilities or weather that is occurring at the airport. The resulting delay in accommodating demand at the airport causes a ripple effect in the surrounding airspace. When this occurs air traffic control implements various flow management techniques that ensures airspace capacity is not exceeded, thus ensuring the highest levels of safety are maintained.

Airport capacity, and thus the surrounding airspace capacity are greatest during good (Visual Flight Rules) weather conditions. During VFR conditions, all runways can be used for landing and take-off without regard for the increased separation required under Instrument Flight Rules (IFR) conditions. Simultaneous operations landings and takeoffs can more readily be accommodated increasing airspace throughput. Additionally, during VFR conditions air traffic control rules provide pilots and controllers the opportunity to space aircraft closer behind the preceding aircraft than would be permitted if radar separations were applied.

During IFR conditions strict adherence to FAA-mandated separation standards are applied by air traffic controllers. The separation standards may define a minimum vertical separation between aircraft on crossing flight paths, minimum lateral separation for aircraft at the same altitude on parallel courses, and minimum longitudinal separation for aircraft following one another on an instrument approach. Other instrument approach criteria established by FAA delineates the minimum runway separation that must be met to conduct simultaneous operations during IFR. The increased separation requirements during IFR conditions reduces the capacity of the airspace, thus FAA employs a variety of traffic flow management techniques to ensure airspace capacity is not exceeded. The traffic flow management techniques employed may include increased longitudinal separation during the en-route phase of flight, delays at the departure airport or restrictions on the numbers and types of aircraft that are permitted in the airspace. All of these techniques are intended to ensure airspace capacity is not exceeded and to provide the highest level of safety.

Airspace and airport capacity combine to create a system capacity that is designed to accommodate system demand. The system capacity will vary dependant upon prevailing weather conditions and airport configuration; however, there is sufficient airspace capacity in the Los Angeles basin to accommodate any of the proposed Master Plan alternatives. Prior to conducting any operations at LAX with any modified airfield, the FAA would develop air traffic control producers that ensure the continued safety of flight operation at LAX

The primary purpose of air traffic control is to prevent a collision between aircraft. When a preceding aircraft does not exit the landing runway as anticipated, a succeeding aircraft may be instructed by the tower to execute a "go-around." On other circumstances, pilots may initiate a "go-around."

The incidence of "go-arounds" as a percentage of operations is very small. When they occur, air traffic control will provide specific instructions to maintain required separation from a preceding departing aircraft. The standard procedure is to require the aircraft to fly runway heading until reaching the shoreline west of LAX at which point the aircraft is sequenced with other arriving traffic for another approach to the airport. In rare instances, Air Traffic Control may direct an early turn, but this is an unusual circumstance.

Southern California TRACON and Los Angeles Airport Traffic Control Tower are among the most technologically advanced in the nation, equipped with the latest FAA equipment and a skilled cadre of professional air traffic controllers. Intervention by the tower that results in a "go-around" is an indication that the integrity of runway separation was maintained.

TR-SEC-1: Security

Introduction

Numerous comments were received on the Supplement to the Draft EIS/EIR pertaining to security issues at LAX, both as they exist now and as related to the design of Alternative D. This topical response addresses, in general, most of those comments. Other security-related comments are addressed separately on a comment-by-comment basis.

Discussion

The terrorist attacks of September 11, 2001 have had a substantial influence on how airports now operate, including increased attention to, and provisions for, airport safety and security. LAX structures and processes were designed with efficiency as the main goal to facilitate the flow of passengers, aircraft, cargo, and the associated support operations. As air travel increased, facility expansion was limited, and over time the airport became increasingly more congested. Immediately after the September 11, 2001 attacks, airport security and operations changed significantly. LAWA was forced to take the existing regulations and procedures and modify them to the ever-changing environment. This resulted in improved security, but the existing terminals were not built to handle post-9/11 security and operations. The current LAX physical layout limits some potential security enhancements.

Alternative D was formulated and refined in 2002 to provide an additional option for the LAX Master Plan and is designed to protect airport users and critical airport infrastructure in response to the increased risk of terrorism aimed at aviation and commercial assets. The plan is designed with the flexibility to incorporate evolving federal airport security requirements and allows for the dispersal of people and security processes away from critical points on the airport complex. This allows for consistent levels of screening, an increased ability for law enforcement and security personnel to respond to threats, and the protection of people and critical facilities essential to the continued operation of the airport.

The purpose of the environmental analysis provided in the Supplement to the Draft EIS/EIR was to assess the environmental impacts of the Alternative D design approach, e.g., the impacts on land use, noise, traffic, and air quality. Enhancing safety and security is an important public policy goal of Alternative D; however, this public policy goal is not an environmental issue in itself. Numerous comments pertaining to security issues were received during the public review period for the Supplement to the Draft EIS/EIR. Such comments particular to security issues do not raise or pertain to any environmental issues that are subject to NEPA or CEQA review requirements. While the public policy comments received on the security aspects of Alternative D raise important issues about the plan, such issues can and should be considered by federal, state, and local public safety officials during the decision-making process for the project.

This topical response addresses the most frequently raised security-related concerns received on the Supplement to the Draft EIS/EIR that relate to the public policy aspects of Alternative D security. More specifically, this topical response provides discussion on the following subjects of concern addressed in the comments received: 1) Purpose of Alternative D Security Improvements; 2) RAND Issue Paper; 3) Concentration of Airport Activity in a Single Location, 4) GTC; 5) Security Screening of People and Baggage; 6) Automated People Mover Security; and 7) Security Improvements and Passenger Convenience. The discussion is based in part, on information contained in the Appendix I, Comparative Security Analysis of Alternative D and the No Action/No Project Alternative, of the Draft LAX Master Plan Addendum. While, as noted above, these concerns do not raise or address environmental issues that are subject to NEPA or CEQA review requirements, the following information is provided in response to those concerns for consideration during the decision-making process.

Subtopical Response TR-SEC-1.1: Purpose of Alternative D Security Improvements

The postulated threat against LAX is terrorist actions that include primary threats such as using a vehicle or truck bomb and secondary threats such a baggage bomb, suicide bomber, or use of lethal weapons. A truck bomb is considered a primary threat because it has the ability to create high casualty numbers from a large initial explosion and high secondary casualty numbers resulting from major structural collapse of

roadways and buildings. Analysis shows that the potential of a vehicle bomb to cripple LAX and inflict a high number of casualties is the primary vulnerability and focus of security planning. Alternative D represents a new design approach to securing airports for the future. By limiting access by private vehicles to the main airport infrastructure, significant threats can be identified and mitigated in new facilities designed for the new security environment. This approach reduces the risk to airport users while also protecting the airport infrastructure and its link to the economy.

Alternative D's unique effectiveness as an enhanced safety and security plan lies in the establishment of a new and more effective concept of security operations for LAX. This concept involves the use of multiple concentric rings of security that provides security measures around each primary LAX facility. The establishment of these multiple concentric rings of security will allow LAWA to begin its security process long before any passenger or vehicle enters the Central Terminal Area (CTA). The use of concentric rings in the development of a deterrent and mitigation strategy is based upon the concept of protecting, detecting, assessing, and responding (PDAR) to threats to passengers and the airport. This is best accomplished through the dispersal of potential hostile events in such a manner as to allow increased distance and time from a threat to give law enforcement and security personnel time to assess the threat and respond appropriately to it.

In terms of security, the purpose of Alternative D is to create the space necessary to create hardened structures with proper standoff distances from potential large car or truck bombs. A number of the comments received stated that security improvements could be made in the existing CTA for less cost than under Alternative D. Neither the structural hardening nor the proper standoff distances can be achieved in the existing CTA without significant cost and operational disruption, thus the desire to look for new solutions to this geometric and operations design problem. The existing buildings were not originally designed to face the threats now recognized. In fact, the terminals were designed to make passenger-walking distances as short as possible from the curbfront to ticketing and onto aircraft gates. These short distances and outdated terminal design now present a security challenge that does not allow for proper separation between passengers and large car or truck bombs that can be driven to the curb anywhere in the CTA. All of the required building modifications must happen around a fully operational airport that is one of the three busiest origin and destination airports in the world. If there were room to harden the existing CTA, it would already be underway. The reality is that there is not enough space to protect the airport from large car or truck bombs in the CTA. If further hardening were made to the existing CTA, the space to process passengers would be further eroded and efficiency further degraded. This would simply pack more people into less space and increase the effective threat of smaller bombs and weapons.

The following is a list of constrained and/or insufficient areas within the existing CTA that hamper redevelopment and are a focus of the design solutions contained within the Alternative D design concept:

- Departure curbside check-in space
- Ticketing/check-in halls
- Passenger circulation/queuing space
- Passenger security checkpoint space
- Passenger hold room space
- Passenger lounge space
- Federal Inspection Services (FIS) space
- Arrival baggage claim space
- Arrival hall and meter/greeter space
- Arrival curbside passenger pickup space
- Terminal evacuation area is a combination of the airside terminal-parking apron, existing terminal curbfronts and terminal roadways
- Constrained arrival and departure roadway/curbfront space
- Constrained automobile parking in the CTA

The creation of operating facilities capable of meeting future security needs without retrofitting current facilities ensures that the most efficient design can be incorporated without impacting passenger throughput. These benefits cannot occur under the No Action/No Project Alternative due to the limited

space of the current physical facility. No taxpayer dollars would be used to pay for any of the on-airport improvements proposed under the No Action/No Project and Master Plan build alternatives. The proposed Master Plan improvements under all of the alternatives would be funded with a combination of FAA Airport Improvement Fund grants, passenger facility charges, general airport revenue bonds, airline fees, and other state/federal grants.

Subtopical Response TR-SEC-1.2: RAND Issue Paper

Congresswoman Harman is the Ranking Member on the Intelligence Committee of Congress and was appointed to the House Select Committee on Homeland Security. On May 14, 2003, U.S. Congresswoman Jane Harman released an issue paper prepared at her request by the RAND Corporation. The eight-page RAND issue paper, *Designing Airports for Security: An Analysis of Proposed Changes at LAX*, raises security concerns about LAX Master Plan Alternative D.

The RAND paper is based on a two-page fact sheet pulled from the LAWA web site and on RAND's largely unpublished and independent research, to which no peer review has occurred. The authors did not possess the complete facts and details of Alternative D at the time the paper was written. No discussions regarding the LAX Master Plan were held between anyone connected with LAWA or the City of Los Angeles and RAND or Representative Harman's office nor were any discussions requested prior to the release of the RAND paper. The paper itself contains a disclaimer that, "Although issue papers are formally reviewed, authors have substantial latitude to express provocative views without doing full justice to other perspectives. The view and conclusions expressed in issue papers are those of the authors and do not necessarily represent those of RAND or its research sponsors."

The RAND paper demonstrates many fundamental misunderstandings of existing LAX facilities and operations, security threats facing major U.S. international airports and the intent of the LAX Master Plan Alternative D design concept.

Subtopical Response TR-SEC-1.2.1: Flawed Conclusions Based on Flawed Assumptions

Three primary assumptions are stated in the RAND issue paper on Page 2, beginning in the last paragraph in the first column. They state the following:

> First, we assume that ongoing security expenditures are equal for each [Master Plan] alternative, or that any security personnel and equipment that would be added under Alternative D could be added to the existing [airport] configuration.

The existing airport cannot add space to the existing terminals for further security improvements without breaking out of the "box" that is the existing central terminal area (CTA). Alternative D specifically creates the new space necessary to accommodate improvements needed now and new space to react to future needs not yet identified. One of the primary problems facing LAX today is the lack of space to efficiently implement new equipment already available to improve the rate of baggage screening. To meet Congress's one hundred percent baggage screening mandate by December 31, 2002, LAWA was forced to implement an interim baggage screening solution in the lobbies of the existing ticketing halls. By placing the baggage screening equipment in this location, passengers must share this space with the equipment and handle their own bags once they check them in with the airline. Even if Congress had allowed more time for LAX to implement an "in-line" baggage screening system, the space necessary to construct such a system will take extensive modifications to the existing baggage distribution system. Even after LAWA's implementation of an interim in-line baggage screening system into the existing terminals, it will only be sized to activity levels experienced in the year 2000. Alternative D creates a new terminal area that would be uniquely designed to safely and efficiently screen passenger baggage.

> Second, we assume that additional security resulting from hardening structures in the reconfigured facility could also be achieved by hardening structures in the existing structure. We evaluate only the configuration of the airport, not the actual structures, because the engineering details of the structures specified in the plan are not yet available.

The purpose of Alternative D is to create the space necessary to create hardened structures with proper standoff distances form potential large car or truck bombs. Neither the structural hardening nor the proper standoff distances can be achieved in the existing CTA, thus the desire to look for new solutions to this geometric and operational design problem. As stated above, the existing terminal buildings were not

originally designed to face the threats now recognized. In fact, the terminals were designed to make passenger-walking distances as short as possible from the curbfront to ticketing and on to aircraft gates. These short distances and outdated terminal design now present a security challenge that does not allow for proper separation between passengers and large car or truck bombs that can be driven to the curb anywhere in the CTA. All of the required building modifications must happen around a fully operational airport that is one of the three busiest origin and destination airports in the world. Alternative D is a concept that not only provides the proper standoff distances and hardened structures in the end state; it contemplates a dynamic operational airport during the entire time that new construction is underway.

> Third, we assume that attackers will exploit the security weaknesses of each design, and that attacks would be conducted to maximize their damage. This means terrorists will adapt to changes in security, so that improving one weakness in security will provide only minimal benefit if a more substantial weakness remains.

This holds true for any changes made to the existing CTA. The only long-term protection for passengers, the airport and the CTA infrastructure comes from separating the threat of a car or truck bomb from the CTA and developing systems and procedures over time that thwart the on-going threat of other types of small bombs, firearms, missiles, rocket-propelled grenades, and mortars. Further, a hardened target is a deterrent. Terrorists are opportunists looking for high value, vulnerable targets. Time spent on finding weaknesses in a hardened target can more efficiently be spent in finding soft targets and exploiting them.

Subtopical Response TR-SEC-1.3: Concentration of Airport Activity in a Single Location

Many of the comments received on Alternative D expressed concern that consolidated facilities such as the Ground Transportation Center (GTC) would serve high concentrations of people, thus making them vulnerable targets in one single location. Just the opposite is the case. The GTC, ITC, RAC, and FlyAway represent four secured entry points to the future airport under Alternative D. This in contrast to one roadway used by all passengers coming to the airport today.

The real icons of the airport that set it apart from just another crowded shopping mall or building exist in the CTA. They are the "Theme Building," the air traffic control tower, and the closely parked aircraft near the roadways. Alternative D provides for the elimination of unauthorized roadway traffic in the CTA. This restriction will nearly eliminate the threat to the most populated area of the airport as well as critical infrastructure. By moving traffic to outlying areas and consolidating operations, the ability to observe and assess threats is significantly enhanced. By increasing the distance between the critical areas of the airport and the various detection points, it allows for consistent levels of screening, additional time for law enforcement officers and security personnel to assess and respond to potential threats, and the protection of people and critical facilities essential to the continued operation of the airport.

Subtopical Response TR-SEC-1.4: GTC

The GTC would be planned and created with the most recent understanding of blast protection design. The design would also include the proper standoff distances between the parking garages and the GTC. The GTC is designed to act primarily as a train station, so there will be constant movement and dispersion of people over a large area, minimizing dwell times. Passengers will not be queuing in either a ticketing lobby or baggage claim area at the GTC. This is significantly different from the existing CTA where at peak hour there are hundreds of people queuing on the second level for ticketing, security and on the first level at baggage claim all within 25 to 50 feet of open and accessible lanes of traffic.

The LAX Draft Master Plan Addendum addresses the GTC in Chapter 2, Alternative D Development and Refinement, Section 2.3.2.2, Ground Transportation Center (GTC) and in Appendix I, Comparative Security Analysis of Alternative D and the No Action/No Project Alternative.

Subtopical Response TR-SEC-1.5: Security Screening of People and Baggage

Alternative D would utilize the concept of multiple concentric rings of security that provide security measures around each primary LAX facility. The establishment of these multiple concentric rings of security would allow LAWA to begin its security process long before any passenger or vehicle enters the CTA. The use of concentric rings in the development of a deterrent and mitigation strategy is based upon the concept of protecting, detecting, assessing, and responding (PDAR) to threats to passengers and the airport. This is best accomplished through the dispersal of potential hostile events in such a manner as to

allow increased distance and time from a threat to give law enforcement and security personnel time to assess the threat and respond to it.

By providing new, flexible space through the terminal area, Alternative D increases passenger-processing efficiency and adds new passenger screening systems to protect against small explosives, firearms and small weapons. LAWA personnel would screen all entrances to the CTA. The role of Level 1 screening is the protection of the CTA and the AOA, and does not usurp the role of the federal government in protecting the passengers, crew and aircraft as it departs the airport. The focus is to screen out anything that could cause harm to multiple passengers or their companions or to the air facility itself while at the same time keeping the screening lines flowing so as to not cause a passenger buildup in an unscreened area, thus minimizing a potential target opportunity for an attacker. The federal government continues to perform Level 2 (TSA) screening prior to passengers boarding aircraft. This allows LAWA to be flexible in its approach to screening, adjusting the requirements to existing and current threats.

Alternative D proposes a single point of vehicle access to the Ground Transportation Center allowing a single control point to monitor vehicles approaching arrival and departure curbs as well as parking. The GTC would be designed to create layers of security profiling prior to passengers boarding the people mover. Immediate profiling would be done prior to any vehicle reaching a curb. Specialized "screening areas" would be designed within the system to allow for any vehicle to be searched. Level 1 security screening would take place before anyone entered the APM platform. This security step would consist of a series of flow through detectors capable of explosives and weapons detection. Security personnel would only monitor these devices as airport users flow into the facility. Alternative D reconfiguration would allow the ability to screen all bags and passengers prior to departure to the CTA. This is a key concept that is being considered for implementation within the concept design.

Should the people mover route be part of an attack, access to the CTA would be accommodated through dedicated bus lanes directly to the Terminal Area. This same approach was used successfully after September 11, 2001. There will always be the ability to screen passengers and bags prior to entering the people mover. Alternative D will have several layers of screening to assure the best possible deterrence to any attack.

The LAX Draft Master Plan Addendum addresses passenger and baggage screening in Chapter 2, Alternative D Development and Refinement, Section 2.2 Terminal/Passenger Processing Facilities - Alternative D and in Appendix I, Comparative Security Analysis of Alternative D and the No Action/No Project Alternative.

Subtopical Response TR-SEC-1.6: Automated People Mover Security

The automated people mover (APM) system is the primary connection between the GTC, RAC, ITC, and CTA. The trains would be designed to accommodate passengers, employees, meeters and greeters, baggage, and baggage carts. One APM route would operate from the ITC to the RAC, ultimately ending at the CTA. An additional APM route would operate from the GTC to the CTA. Each of these routes consist of two and four track combinations that provide the high levels of service required to make this the primary access mode to the airport terminals. Likewise, these various routes and multiple tracks provide redundancy in the APM system in the event of a major failure or terrorist attack. A secure airside APM would operate past Level 2 (TSA) screening and the Tom Bradley International Terminal (TBIT) and West Satellite Concourse. Each supporting LAX landside transportation facility (GTC, ITC, and RAC) would accomplish Level 1 security screening of passengers prior to boarding the APM. Additional passenger screening prior to the boarding the people mover system would mitigate this threat.

The APM is a key component to dispersal of vehicular traffic from the CTA roadway network and would contribute greatly to the mitigation of vehicle bombs at the CTA facilities. Currently, vehicles move through the CTA roadway without constraint or inspection (except for increased security measure during DHS declared High and Sever national threat conditions) exposing the CTA routinely to the threat of vehicle delivered explosives.

The people mover could become a target similar to the hundreds of other public transportation systems around the country. As an acknowledged target, the APM support structure would be developed to withstand a large vehicle improvised explosive device (LVIED). Current and future security technologies in the areas of protecting the rail system include the ability to detect and assess potential threats, thus allowing more time for security officers to respond to a threat. Appendix I, Comparative Security Analysis

of Alternative D and the No Action/No Project Alternative, of the Draft LAX Master Plan Addendum addresses the security of the APM system on page I-24 of Section 6.6, Automated People Mover Alternative D Concept.

Subtopical Response TR-SEC-1.7: Security Improvements and Passenger Convenience

The current physical layout of LAX contributes to added passenger inconvenience and delay. Currently, the threat from a vehicle or truck bomb is unconstrained and traffic congestion is a serious problem. Vehicles ranging from light cars to buses and large trucks are in the CTA roadways at all times of the day with significant increases during peak operating hours. Also, vehicle inspections upon entry to the CTA require extensive increases in security staffing, causing traffic backups that result in significant operational delays. The congestion seriously degrades emergency response times.

Under Alternative D, airport access road modifications would provide for improved access to proposed parking areas and would ease access and relieve congestion on local area streets. Under the No Action/No Project Alternative, current traffic congestion in and around LAX would continue and get worse even after operational improvements were employed to increase average vehicle occupancy. Traffic congestion is further compounded by the limited access points to LAX and the inability to establish concentric rings of security outside of the CTA.

Today, one of the greatest problems is that terminal concourse evacuations force people onto the upper and lower level roadways required for emergency vehicle access. This problem was readily apparently on July 4, 2002 during the shooting that took place in the Tom Bradley International Terminal. Under Alternative D, evacuation of a terminal concourse would not require use of the people mover to disperse people to an area of refuge. Alternative D would provide immediate refuge to people exiting the building by simply walking out of the door of the building.

As stated in Chapter 3, Section 3.3.2, Alternative D - Enhanced Safety and Security Plan, of the Supplement to the Draft EIS/EIR, by creating additional space for passenger terminals, efficient passenger and baggage screening facilities can be implemented at the airport. Accessing the airport from four landside points provides redundancy in the passenger access system and also solves many of the traffic congestion problems associated with the current airport access. The end goal of this design concept is to achieve a new balance between the needs of both passenger security and passenger convenience.

TR-ST-1: Cargo Truck Traffic

Introduction

Many comments were received on the Draft EIS/EIR and the Supplement to the Draft EIS/EIR with questions regarding truck/cargo impacts of the LAX Airport Master Plan alternatives. These include comments pertaining to the growth in airport related truck activity due to air cargo growth at LAX Airport, possible increases in air cargo and trucking at other airports to lessen growth at LAX, the use of good planning principles for handling truck traffic and minimizing truck impacts on land uses adjacent to the airport, impacts of airport related trucking, and truck diesel pollution. This topical response responds to such questions and comments about cargo truck traffic.

Discussion

Based on the types of questions and comments received regarding cargo truck traffic, this topical response is divided into six subtopics.

Subtopical Response TR-ST-1.1: Truck Traffic Plan for LAX Airport Master Plan Alternatives

The planned location of cargo activities in the LAX Master Plan alternatives, with their improved access to the regional transportation (freeway) network, as well as a more extensive internal roadway system, will minimize truck use of surface streets near the airport.

Alternatives A, B, C and D have significant project roadway components which will accommodate a great deal of additional project-related traffic, including airport-related truck traffic. Alternatives A, B and C include the LAX Expressway (connecting to the I-405 Freeway) and Airport Ring Road (connecting to the I-105 Freeway) which will be directly accessible from major airport cargo activity areas, thereby reducing the number of trucks on surface streets near the airport. While it does not have these two major roadway improvements, Alternative D proposes new interchanges on the I-105 east of Aviation Boulevard and on the I-405 interchange at Lennox Boulevard. These proposed traffic mitigations will allow both passenger and cargo traffic to enter and exit the regional highway system more easily.

Subtopical Response TR-ST-1.2: Cargo/Truck Use of Other LAWA Airports in the Los Angeles Region

In 1996, LAX handled approximately 1,896,764[83] annual tons of air cargo. By the year 1999, this number grew to 2,165,855[84] annual tons of air cargo. For Alternative C in horizon year 2015, air cargo activity at LAX is projected to grow to 4,172,000 annual tons[85]. These volumes represent increases of approximately 120 percent over the 1996 Baseline, and 93 percent over 1999 levels. These volumes show a compounded annual growth rate of 4.5 percent for the years 1996 to 1999, and a compounded annual growth rate of 4.2 percent for the years 1999 to 2015.

LAWA is currently performing new Master Plan Studies of Ontario International Airport (ONT) and Palmdale Airport (PMD). Both of these Master Planning efforts will explore the development of new air cargo facilities and increases in air cargo handling at these LAWA airports for the future.

In 1999, airports in the region processed approximately 2,759,933 tons of air cargo.[86] This means that LAX accounted for 78.5 percent of the regional total. Based on studies by the FAA and the Southern California Association of Governments (SCAG), by 2020 the region is expected to process 8,901,000 tons of cargo.[87] This represents a compounded growth rate of 5.6 percent, which would yield approximately 6,735,000 tons in 2015. This shows that under Alternative C, LAX Airport will have reduced its share of regional cargo from 78.5 percent in 1999 to approximately 61.9 percent in 2015. Since cargo activity in Alternative D is about 20 percent less than Alternative C, the regional share of cargo activity drops to about 50 percent of the region under Alternative D.

Recent studies performed by SCAG[88] indicate that greater shifts in air cargo (beyond those described above) from LAX Airport to other airports in the region will only occur if market forces support those shifts in the future. At the present time, SCAG is conducting additional assessments of the regional aviation system, which may modify the projections and shares of air cargo in the Los Angeles Region.

Subtopical Response TR-ST-1.3: Planning Principles for Handling Truck Traffic

LAX Airport Master Plan Alternatives A, B, and C would consolidate and upgrade airport cargo facilities at LAX to better marshal trucking activity at on-airport locations. These facilities will be located within close proximity of the Airport Ring Road, the LAX Expressway and Interstate I-105, thereby minimizing truck traffic on surface streets. Alternative D includes these same basic principles of maintaining cargo facilities adjacent to major roadways and freeways.

Subtopical Response TR-ST-1.4: Neighborhood Impacts from Trucks

Several individual comments were received about the potential impacts on neighborhoods near the airport associated with forecast increases in LAX-related trucking. As mentioned above, nearly all of the LAX cargo facilities in the Master Plan alternatives will be close to adjacent freeways and thus will reduce the number of trucks on surface streets in the vicinity of the airport. Reducing trucks on surface streets will reduce congestion and allow vehicles to travel more efficiently on the surface streets. This improved

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83 Supplement to the Draft EIS/EIR, Table S3-1

84 SCAG Aviation Resource Center, Regional Data Statistics, Air Cargo in SCAG Region (Tons), Retrieved from www.scag.ca.gov/Aviation/regdata_AC.html, October 13, 2003.

85 Supplement to the Draft EIS/EIR, Table S3-1

86 SCAG Aviation Resource Center, Regional Data Statistics, Air Cargo in SCAG Region (Tons), Retrieved from www.scag.ca.gov/Aviation/regdata_AC.html, October 13, 2003.

87 SCAG 2001 Regional Transportation Plan, Technical Appendix B, Aviation, Table 8, May 2001.

88 SCAG Regional Aviation Plan for the 2001 RTP, August 2001.

operation will decrease the temptation for drivers of trucks and other vehicles to find shortcuts through neighborhoods.

Subtopical Response TR-ST-1.5: Truck Diesel Pollution/Air Quality

Several individual comments were received about potential air quality impacts from increases in truck traffic associated with the higher air cargo levels in the LAX Master Plan alternatives. Please see Air Quality Topical Response TR-AQ-3 Air Pollution Increase (Increased Pollution and Emissions Comparison).

Subtopical Response TR-ST-1.6: Technical Traffic Analysis of Trucking Forecasts of LAX Master Plan Alternatives.

A number of individual comments were received that implied that the technical analyses of traffic impacts on the roadway system surrounding the project were inadequate because truck forecasts associated with the higher cargo levels in the Master Plan alternatives were incomplete or not included. That is not correct. The technical traffic analysis for the Master Planning effort did include a complete assessment of truck volumes for all categories of trucking (expressed in Passenger Car Equivalents (PCE)) in the analysis of alternatives. The analysis accounted for all the trucking associated with the projected cargo activity of LAX Master Plan alternatives as well as projected background truck traffic in the local and regional transportation system for horizon 2015.

There were a number of comments advocating the use of a PCE higher than the 2.0 used in the Master Plan analysis to represent the mix of trucks that will travel within the LAX Airport study area in the future. The use of a PCE of 2.0 is the standard default value recommended by the Highway Capacity Manual (HCM2000: Transportation Research Board). This is the industry-accepted standard for analyzing the traffic impacts of trucks. Therefore, a standard PCE of 2.0 is justified for this analysis.

TR-ST-2: Surface Transportation Analysis Methodology

Introduction

Many comments were received questioning the surface transportation analysis methodology and results. This topical response addresses the main concerns expressed in such comments.

Discussion

Subtopical Response TR-ST-2.1: Definition of Study Area and Identification of Facilities Analyzed

NEPA/CEQA and CMP Requirements and Guidelines

Federal Requirements for ground access analysis are described in *Technical Report 3b, Off-Airport Ground Access Impacts and Mitigation Measures*, Sections 1.2 and 1.3 (pages 1-1 to 1-3). Federal documents considered in the definition of the study area and selection of facilities analyzed include Advisory Circular 150/5360-13 (FAA 1994) and Technical Advisory T6640.8A (FHWA 1987). In general, these two documents state that the airport access system is to be integrated with the surrounding regional transportation system and stress the importance of working cooperatively with local and regional transportation authorities in the planning and analysis of airport ground access.

Section 15126.6(e) of the CEQA Guidelines requires analysis of a "no project" alternative which reflects the existing conditions as well as accounts for what would reasonably be expected in the foreseeable future if the project were not approved.

Significant impacts of Master Plan Alternatives A, B, and C are shown in **Table 4.2** of *Technical Report 3b, Off-Airport Ground Access Impacts and Mitigation Measures*, of the Draft EIS/EIR. Locations of these impacts are shown in Attachment D of that report, together with tables showing the amount of impact at each location. Impacts to freeways and ramps are discussed in detail later in the same report in Section 6.2, *CMP Highway Analysis*. Significant impacts of the Enhanced Safety and Security Alternative, Alternative D, are shown in **Table S10** of *Technical Report S-2b, Supplemental Off-Airport Surface Transportation Technical Report*, with a discussion of CMP impacts in Section 6.0 of that report.

The Los Angeles County Metropolitan Transportation Authority (LACMTA) has developed a formal process for evaluating regional transportation impacts through the Congestion Management Program (CMP). Under the freeway segment and arterial segment analysis provisions of the CMP, CMP impacts are assessed for the recommended project alternative only at various CMP monitoring stations. Only those stations where the increase in peak hour traffic due to the proposed project exceeds pre-defined threshold values are to be included in this assessment. These provisions and requirements have been followed closely in the CMP analysis for the LAX Master Plan.

Subtopical Response TR-ST-2.2: Nature of Los Angeles International Airport

LAWA determined the appropriate range of transportation impacts to be analyzed in the EIS/EIR through the scoping process and consultation with the Los Angeles Department of Transportation, Caltrans, and the Federal Highway Administration. The scope of the study was determined to be reasonable based on comparison with other projects of a similar type (e.g., Alameda District Specific Plan), and the anticipated flow of ground traffic into and out of LAX via highway arteries and the airport ring road (as opposed to local streets). It should also be mentioned that Los Angeles International Airport is not a typical development project that acts as a trip generator. Rather, it is an element of the regional transportation infrastructure, and acts as an intermodal transfer facility. This special character of LAX has been recognized from the beginning of the LAX Master Plan process, and is documented in the *Memorandum of Understanding Between the Los Angeles Department of Airports and the Los Angeles Department of Transportation for the Los Angeles International Airport Master Plan Ground Access Element (June 1999)* as follows:

> LAX is a facility that exists to serve the national and international transportation needs of the Southern California region. As the region's population and employment grow, and as the movement of our nation into a more global era of trade and travel accelerates, so do the demands on LAX.
>
> In this sense, LAX is not a generator of trips in the traditional sense of a private development seeking agency review and approval of a traffic study. Rather, LAX is a regional infrastructure facility that provides a transition of 'ground-to-air/air-to-ground' access for people and goods coming to or from the Southern California region. In essence, LAX is a premier example of an Intermodal Center which serves as a 'transfer' facility from one mode of travel to another in our dynamic, growing region.

In this regard, LAX is much like Union Station in downtown Los Angeles. An Environmental Impact Report for the Alameda District Specific Plan, including transportation and ancillary development in and around Union Station,[89] was approved in 1996. That EIR evaluated 12 intersections and 28 roadway links, which was far less than the number of intersections and links that may have potentially been impacted by that project. This precedent confirms that it is not necessary in an environmental study of an intermodal transfer-type facility to identify and analyze every intersection that may be impacted by such a project.

Through consultation with LADOT, the LAX Master Plan has defined a 3-tiered study area. The facilities selected for analysis include 61 intersections, 30 roadway links, 4 freeway segments, and 39 freeway ramps, which is far more than was analyzed for Union Station. The size of the study area and the magnitude of facilities analyzed far surpass those of the Alameda District Specific Plan EIR. This is an indication that the study area and facilities analyzed in the LAX Master Plan traffic analysis go far beyond the requirements established by precedent in the City of Los Angeles.

In contrast to LAX, private sector development projects may require a larger study area and many more intersections. The Playa Vista project, which analyzed more than 200 intersections, is an example of such a private sector development project.

One could argue that the portion of the LAX Master Plan that includes new office and retail development should be analyzed in a manner consistent with private sector developments. To make such an argument would be improper in this case, however, for two reasons. First, the proposed LAX Master Plan

[89] The Alameda District Specific Plan proposed an expanded use of the Union Station platform to accommodate additional commuter and light rail service, a new subway station, and a new bus transfer facility. In addition, the Specific Plan proposed 10 million square feet of office and retail space.

actually reduces the amount of on-site ancillary development already approved and mitigated by prior action (this is discussed in more detail later in this topical response). It is concluded, therefore, that there could not be any significant traffic impacts associated with the ancillary development portion of the plan. Second, the precedent established by the Alameda District Specific Plan EIR has established that this type of ancillary development does not alter the definition of study area and selection of facilities analyzed, which are based on the character of the intermodal transfer facility.

Subtopical Response TR-ST-2.3: Tier I, II, and III Study Areas

As specified in the *Los Angeles Department of Transportation (LADOT) Traffic Study Policies and Procedures (April 1999)*, the Tier I and Tier II study areas were defined in the MOU between LAWA and LADOT. These areas are shown in Figure 4.3.2-1 of the Draft EIS/EIR and in Figure 2-1 of Technical Report 3b.

The Tier I study area comprises 61 intersections and 39 freeway ramps. A refined analysis of intersections was performed for Alternative C, which included 14 additional intersections. For Alternative D, an additional 10 intersections were added to the analysis, bringing the total intersections studied to 85. The Tier II study area comprises 30 arterial links and four freeway links. The Tier III area was defined following Los Angeles County CMP guidelines. It comprises 8 freeway monitoring stations and 39 CMP arterial segments along six CMP arterials. Of the 39 CMP arterial segments, 18 are CMP monitoring stations. The additional 21 arterial segments are analyzed, even though they are not specifically required in the CMP guidelines. All of the CMP facilities analyzed are identified in the tables in Attachment G to Technical Report 3b.

Subtopical Response TR-ST-2.4: Definition of Baseline Scenarios and Incorporation of Local/Regional Plans and Programs

NEPA/CEQA and CMP Requirements and Guidelines

In order to identify project impacts, it is necessary to define scenarios that represent the without-project conditions and to compare these conditions to those of the project alternatives. As described in Section 3.2.1 of the Draft EIS/EIR (page 3-8), LAWA evaluated a "no action/no project" scenario, which was defined to represent future year conditions without the LAX Master Plan.

NEPA requires the alternatives analysis to include the alternative of "no action," which includes the consequences of predictable actions by others in the absence of federal action or approval of the project. While a formal identification of significant project transportation impacts and mitigation measures is not required by NEPA, FHWA guidance[90] do include analyses in seven technical areas:

- Regional connectivity;
- Capacity;
- Transportation Demand;
- Social demands or economic development;
- Modal interrelationships;
- Safety; and
- Roadway deficiencies.

CEQA requires analysis of a "no project" alternative which reflects the existing conditions as well as accounts for what would be reasonably expected in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. This requirement is found in State CEQA Guidelines, Section 15126.6(e).

These requirements provide very little flexibility in defining the no action/no project scenario(s) against which the project alternatives are compared.

[90] USDOT Federal Highway Administration, Technical Advisory T6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents; October 30, 1987.

Subtopical Response TR-ST-2.5: No Action/No Project and Adjusted Environmental Baseline Alternatives

Following the NEPA requirements, a No Action/No Project alternative was defined which "describes existing conditions at and near LAX as modified by what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. This alternative involves the continuation of the existing plans, policies and operations at LAX in the future and assumes that certain projects (e.g., LAX Northside and Continental City) initiated under the existing plan will continue. Improvements that are currently approved, in the planning stages, or underway would go forward. These include minor taxiway improvements, 250,000 square feet of additional cargo building space and the now completed reconstruction of a parking structure." (Draft EIR, page ES-11).

The evaluation of off-airport surface transportation impacts under CEQA and development of mitigation measures for significant impacts identified in the analysis are based on a comparison of future year traffic conditions with the project to future year traffic conditions without the project. The future year baseline representing without-project conditions in the transportation analysis is referred to as the Adjusted Environmental Baseline. See discussion in the Introduction to Chapter 4 of the Draft EIS/EIR, page 4-7.

The Adjusted Environmental Baseline includes the same on-airport historical airport activity (1996) and physical facilities (1997) as the environmental baseline, but also includes off-airport land use activity and regional traffic development anticipated by the Year 2015. Except for these factors, the physical characteristics of the airport in the Adjusted Environmental Baseline are identical to the environmental baseline. Creation of the Adjusted Environmental Baseline for transportation analysis is consistent with the requirements of CEQA.

The primary objective of the transportation impact analysis under CEQA is to identify the impacts that the proposed project has on the surrounding transportation system. In order to accurately identify and quantify these impacts, it is necessary to separate traffic growth due to the project from unrelated regional traffic growth due to other causes (such as general population and employment growth and land development in areas outside the airport).

Procedures to isolate traffic growth due to the project from all other traffic growth have been in use for many years. These procedures simply operate under the assumption that there will be no change in trip generation on the project site in the without-project scenario, but that regional traffic growth due to all other factors will continue. Traffic impact analysis policies and guidelines for both the City of Los Angeles and the County of Los Angeles require such assumptions. Traffic growth due to the project is then added to the without-project scenario to create the with-project scenario. Transportation impacts are identified by comparing traffic levels in these two scenarios.

Use of the Adjusted Environmental Baseline for transportation impact and mitigation analysis is conservative in that it identifies more impacts and leads to more mitigation measures than would result if the No Action/No Project Alternative were to be used in the comparison. Because the Adjusted Environmental Baseline assumes no growth in airport traffic, the difference in total traffic between with-project and without-project conditions is much larger than it would be if the No Action/No Project Alternative (where airport traffic is allowed to grow substantially) were used in the comparison. If the current (unadjusted) environmental baseline (where off-airport traffic volumes are not allowed to grow) were used in the comparison, then the increase in traffic due to the project could not be differentiated from increases in traffic due to regional traffic growth unrelated to the airport.

Some comments were received that claimed the identification of off-airport project transportation impacts should be based on a comparison of future year with-project traffic conditions and existing traffic conditions. Such an analysis would be inconsistent with both NEPA and CEQA requirements. It would also be impractical for a single proposed project to perform such an analysis. In its simplest form, this request would require every proposed project to do an entire regional transportation plan and mitigate the impacts of all regional traffic growth in order to receive approval to proceed. This is clearly not the intent of NEPA or CEQA. It would also, in this case, put LAWA in the position of regional transportation planner, thereby usurping the roles of the Southern California Association of Governments (SCAG), the California Department of Transportation (Caltrans), LACMTA, LADOT, and other agencies tasked with responsibilities for local and regional transportation planning.

Subtopical Response TR-ST-2.6: Local and Regional Plans used in Development of Baseline Scenarios

Integration of local and regional plans into the baseline scenarios is described in Technical Report 3b of the Draft EIS/EIR, Sections 2.3 and 2.4 (for Alternatives A, B, and C), and in Technical Report S-2b of the Supplement to the Draft EIS/EIR, Sections 2.3 and 2.4 (for Alternative D). Tables 2.1 (Alternatives A, B, and C) and S1 (Alternative D) provide summaries of local and regional socio-economic assumptions used in the definition of the scenarios. Tables 2.2 and S3 provide lists of all planned development projects added to the background assumptions. Tables 2.3 and S4 list all of the transportation improvements assumed in 2005 and 2015. Tables 2.4 and S5 summarize local and regional public transit improvements.

All of the assumptions regarding future local/regional growth, development, and transportation improvements were developed through close coordination with the surrounding cities and regional agencies.

Subtopical Response TR-ST-2.7: Integration of Regional Plans into Baseline Scenarios

One of the earliest activities of the LAX Master Plan was to obtain local and regional growth plans from SCAG and the City of Los Angeles, specifically, the SCAG 1997 Regional Transportation Plan, which included the adopted regional land use plan. In addition, a second baseline scenario was defined which included more rapid employment growth within the City of Los Angeles, based on the 1995 Los Angeles Citywide General Plan Framework.

The transportation impact and mitigation analysis documented in the Draft EIS/EIR was based on the SCAG regional growth forecasts. A parallel transportation impact and mitigation analysis, based on the Framework growth assumptions, was performed for Alternative C. This parallel analysis is described in Technical Report 3b, Section 4.2.

Commitments for local and regional transportation improvements were determined through the meetings described above, plus the County and Regional Transportation Improvement Programs. Information on existing and future public transit services were obtained from LACMTA, Torrance Transit, Santa Monica Municipal Bus Lines, Culver City Municipal Bus Lines, and LADOT.

Some comments were received that questioned the validity of the growth forecasts given that SCAG has recently adopted a new Regional Development Plan and Guide. A comparison of the new SCAG forecasts to those assumed in the Draft EIS/EIR is provided in the following table.

Based on this comparison, the new SCAG growth forecasts actually assume less regional growth, and less growth in Los Angeles County than has been assumed in the Draft EIS/EIR.[91] Therefore the impact analysis in the Draft EIS/EIR is conservative, meaning that the determination of impacts is based on higher growth than currently predicted. As a result, the 1996 data was used in the analysis of Alternative D. For further information, see Technical Report S-2b of the Supplement to the Draft EIS/EIR, at pages 2-5 through 2-7.

[91] Year 2015 estimates from the 2001 RTP were derived by a straight-line interpolation between the 2010 and 2020 forecasts because no 2015 forecast was included in the 2001 RTP. The SCAG growth forecasts do not assume linear growth (as implied by a straight-line interpolation), but instead assume exponential growth. This means that the 2015 estimates in the table above are higher than would be achieved if an exponential growth rate were assumed. Even with these higher estimates, the 2001 RTP estimates are lower than the 1996 RTP forecasts used in the EIS/EIR.

Table 1

Comparison of SCAG 1996 and SCAG 2001 Socioeconomic Assumptions

	Single Dwelling Units	Multi Dwelling Units	Total Dwelling Units	Population	Retail Employment	Non-Retail Employment	Total Employment
LAX 1996 Data (SE Data from 1996 RTP)							
Primary Study Area	58,309	114,365	172,674	404,119	43,710	255,533	299,243
South LA County	1,422,447	1,473,970	2,896,417	8,206,468	672,764	3,585,759	4,258,523
North LA County	97,989	50,033	148,022	402,141	24,115	111,507	135,622
Orange County	451,958	415,129	867,087	2,418,488	226,341	1,083,053	1,309,394
Riverside/San Bernardino	513,428	212,581	726,009	2,064,141	129,245	531,174	660,419
Ventura County	154,170	84,386	238,556	690,887	52,357	231,635	283,992
Total	2,698,301	2,350,464	5,048,765	14,186,244	1,148,532	5,798,661	6,947,193
SCAG 2010 Data (SE Data from 2001 RTP)							
Primary Study Area	72,386	138,747	211,133	540,720	49,557	307,339	356,896
South LA County	1,424,597	1,540,971	2,965,568	9,450,936	581,363	3,694,644	4,276,007
North LA County	180,131	84,874	265,005	786,072	42,882	207,779	250,661
Orange County	503,988	506,995	1,010,983	3,162,059	281,955	1,514,095	1,796,050
Riverside/San Bernardino	739,789	394,196	1,133,985	3,587,268	278,272	1,166,735	1,445,007
Ventura County	170,346	100,681	271,027	835,903	64,072	316,565	380,637
Total	**3,091,237**	**2,766,464**	**5,857,701**	**18,362,958**	**1,298,101**	**7,207,157**	**8,505,258**
LAX 2015 Data (SE Data from 1996 RTP)							
Primary Study Area	60,434	153,506	213,940	489,620	53,206	359,770	412,976
South LA County	1,459,826	1,882,291	3,342,117	9,991,088	605,507	4,195,949	4,801,456
North LA County	233,233	150,313	383,546	1,043,783	51,934	305,156	357,090
Orange County	507,492	604,748	1,112,240	3,165,429	334,259	1,548,171	1,882,430
Riverside/San Bernardino	895,873	433,020	1,328,893	3,958,973	282,011	1,159,453	1,441,464
Ventura County	188,551	125,257	313,808	861,564	86,714	351,446	438,160
Total	**3,345,409**	**3,349,135**	**6,694,544**	**19,510,457**	**1,413,631**	**7,919,945**	**9,333,576**
SCAG 2015 Data (Interpolation of 2010 and 2020 SE Data from 2001 RTP)							
Primary Study Area	74,112	145,708	219,820	555,050	48,322	313,340	361,662
South LA County	1,456,903	1,644,163	3,101,065	9,752,783	581,225	3,792,927	4,374,152
North LA County	216,664	106,009	322,672	937,282	44,791	224,946	269,737
Orange County	512,810	519,686	1,032,495	3,253,872	292,944	1,595,751	1,888,695
Riverside/San Bernardino	828,658	451,497	1,280,154	4,023,237	309,808	1,286,953	1,596,761
Ventura County	176,137	106,740	282,877	871,011	66,770	329,141	395,911
Total	**3,265,284**	**2,973,803**	**6,239,083**	**19,393,235**	**1,343,860**	**7,543,058**	**8,886,918**
SCAG 2020 Data (SE Data from 2001 RTP)							
Primary Study Area	75,838	152,669	228,507	569,379	47,087	319,340	366,427
South LA County	1,489,208	1,747,354	3,236,562	10,054,630	581,087	3,891,210	4,472,297
North LA County	253,196	127,143	380,339	1,088,491	46,699	242,113	288,812
Orange County	521,631	532,376	1,054,007	3,345,685	303,933	1,677,406	1,981,339
Riverside/San Bernardino	917,526	508,797	1,426,323	4,459,205	341,343	1,407,171	1,748,514
Ventura County	181,927	112,799	294,726	906,119	69,468	341,717	411,185
Total	**3,439,326**	**3,181,138**	**6,620,464**	**20,423,509**	**1,389,617**	**7,878,957**	**9,268,574**

Subtopical Response TR-ST-2.8: Integration of Local Plans into Baseline Scenarios

Another of the earliest activities of the LAX Master Plan was to hold a series of meetings with the surrounding cities to ensure all of their local plans, development projects, and transportation improvements were integrated into the analytical process. These meetings, which continued over several months, included the following cities and agencies:

- LADOT;
- Los Angeles Department of Planning;
- Los Angeles County Department of Transportation;
- El Segundo;
- Manhattan Beach;
- Inglewood;
- Culver City;
- Santa Monica; and
- Caltrans.

Each of these cities and/or agencies was asked to submit their lists of planned development projects, programmed transportation improvements, General Plans, and other information as appropriate. All assumptions used in the analysis came from documented sources provided by the cities and agencies. In fact, subsequent to the completion of Technical Report 3b, Off-Airport Ground Access Impacts and Mitigation Measures, of the Draft EIS/EIR, three proposed development projects were added. These new projects were accounted for in the analysis of Alternative D, and are:

- El Segundo Corporate Campus;
- A 2,200 unit residential development near Long Beach Airport; and
- A new hotel in Marina Del Rey.

Subtopical Response TR-ST-2.9: Integration of Specific Development Projects into Baseline Scenarios

Comments were received with specific concerns regarding the integration of Playa Vista, LAX Northside, and Continental City into the transportation analysis. These specific projects are discussed below.

- Playa Vista

  The Playa Vista project is treated as a related project in this analysis. This means that all of the proposed Playa Vista development is assumed to be in place by the year 2015. Phase I of the project, which has already been approved, is assumed to be completed by 2005. The transportation improvements approved as mitigation measures for Playa Vista Phase I are included in the baseline transportation system for both 2005 and 2015. Since there is no approval for proposed mitigation measures in Playa Vista Phase II, none of the Phase II transportation improvements are included in the baseline assumptions for LAX. This creates a conservative or "worst-case" scenario for the LAX analysis of year 2015 conditions by adding all of the proposed Playa Vista Phase II development, but none of the Playa Vista Phase II transportation mitigations. As a result, the LAX traffic analysis tends to analyze traffic conditions that are worse than will actually occur when Playa Vista is developed and its mitigation measures are implemented.

  Phase I of Playa Vista is assumed to be fully mitigated in the baseline assumptions for LAX. Phase II of Playa Vista is not mitigated at all in the LAX analysis. When Playa Vista Phase II is built, additional transportation improvements, representing mitigation of its impacts, will be built as well. The addition of these Playa Vista transportation improvements will make the transportation system work better than shown in the LAX traffic analysis. It is the responsibility of the Playa Vista developer and LADOT to determine the transportation improvements to be implemented as mitigation for the traffic impacts associated with Playa Vista Phase II.

  Subsequent to the analysis of Alternatives A, B, and C, the Playa Vista project was revised such that Phase II of Playa Vista is now proposed to be much smaller than was assumed in the Draft EIS/EIR. This reduction in the development intensity of a large related project will mean that the magnitude of background traffic throughout the LAX study area will be lower than the travel demand forecasts previously estimated.

  By using the original assumptions for the Playa Vista Phase II development, the analysis presented in the Draft EIS/EIR is conservative in that it may tend to over-estimate the number of significant transportation impacts and therefore proposes more mitigation measures than would otherwise be needed. The analysis of Alternative D in the Supplement to the Draft EIS/EIR uses the same

assumptions for the Playa Vista development that were used in Alternatives A, B, and C, and, similar to the Draft EIS/EIR analysis, is conservative relative to both the extent of impacts identified for Alternative D and the amount of mitigation proposed.

- LAX Northside and Continental City

  LAX Northside and Continental City are approved projects that already have certified environmental impacts reports. These projects are on LAX property. The EIR for LAX Northside was approved by the City Council in Ordinance No. 159526 on November 7, 1984. Shortly thereafter, LAWA implemented nearly all of the transportation mitigation measures for the entire development, including the construction of Westchester Parkway between Pershing Drive and Sepulveda Westway. This project is fully entitled for 4.5 million square feet of commercial office and retail, hotel, and other land uses which can be developed without any new transportation improvements. The Continental City EIR was certified in 1985, and this project is also fully entitled. Transportation improvements for this project have not been implemented yet, but they are included as a part of the transportation network in all future year baseline scenarios.

  In the Adjusted Environmental Baseline scenario, both LAX Northside and Continental City are assumed to be built to their full entitlements by 2015, with a lesser amount completed by 2005. This assumption is fully consistent with the assumptions for all other related projects. It would be contrary to the NEPA requirements to exclude these entitled developments from this scenario. In the No Action/No Project scenario, these two projects are also included. For more information regarding the current plans to develop LAX Northside and Continental City in the absence of Master Plan approval, see Topical Response TR-GEN-2.

Subtopical Response TR-ST-2.10: Assumptions for the Arbor Vitae Interchange and the Marina Freeway (Rte 90) Bridge

Comments were received questioning whether the Arbor Vitae interchange or the Marina Freeway Bridge across Lincoln Boulevard should be included in the analysis as baseline transportation improvements. Assumptions used for these two baseline transportation improvements are discussed below.

- Arbor Vitae Interchange

  The south half of the Arbor Vitae interchange is identified as improvement number 69 in Table 2.3 of Technical Report 3b. Only the south half, or the ramps connecting Arbor Vitae Street to I-405 to/from the south are included in the baseline assumptions. Since 1996, the south half of the interchange has been included in the Regional Transportation Plan for Southern California. The north half of this interchange has not been included in the State Transportation Improvement Program (STIP), and is not assumed as a part of the baseline improvements. The southern half of the interchange continues to be a part of the Regional Transportation Plan in 2002. Therefore the assumption that the southern half of the Arbor Vitae interchange will be built some time between 2005 and 2015 continues to be a valid assumption.

- Marina Freeway (Rte. 90) Bridge over Lincoln Boulevard

  The Marina Freeway Bridge over Lincoln Boulevard, connecting to Admiralty Way in Marina Del Rey is identified as transportation improvement number 87 in Table 2.3 of Technical Report 3b. This project was originally a part of the mitigation program for Playa Vista Phase I, and was therefore included in the list of baseline transportation improvements. However, since that time, the County of Los Angeles is considering options to extend the Marina Freeway to Admiralty Way other than as a grade separation over Lincoln Boulevard. Because of the County's uncertainty regarding this project, the Marina Freeway Bridge was removed from the analysis of Alternative C. A procedure of manual adjustments was used to modify the turning movements at the intersections in the vicinity near the proposed Marina Freeway Bridge at Lincoln Boulevard to reflect estimated volumes along Lincoln Boulevard without the bridge. These manual adjustments were performed by LADOT staff. Similar adjustments were made in the analysis of Alternative D.

Subtopical Response TR-ST-2.11: Definition of Significant Impacts and Selection of Peak Hours for Analysis

Definition of Impact Based on Memorandum of Understanding with Los Angeles Department of Transportation

The general requirements of NEPA and CEQA have been considered by the LADOT, and have been incorporated into the *Los Angeles Department of Transportation (LADOT) Traffic Study Policies and Procedures (April 1999)*. The requirements of this document were refined in the MOU between LAWA and LADOT to allow an analysis of large arterial streets and increase the number of link impacts identified. As documented in Tables 2.5 and 2.6 of Technical Report 3b of the Draft EIR/EIS, the resulting definition of significant transportation impacts is as follows.

For Intersections

Using the current LADOT traffic impact study guidelines, an increase in the volume-to-capacity (V/C) ratio at an intersection is described as 'significant' in accordance with the following table:

Level of Service	Final V/C Ratio	Project-Related Increase in V/C
C	0.701 - 0.800	Equal to or greater than 0.040
D	0.801 - 0.900	Equal to or greater than 0.020
E, F	>0.901	Equal to or greater than 0.010

For Street Links

Use a similarly scaled impact definition for links, as follows:

Level of Service	Final V/ C Ratio	Project-Related Increase in V/C
C	0.701 - 0.800	Equal to or greater than 0.080
D	0.801 - 0.900	Equal to or greater than 0.040
E, F	>0.901	Equal to or greater than 0.020

Subtopical Response TR-ST-2.11.1: Comparison of Impact Thresholds with Those of Surrounding Jurisdictions

Some comments were received claiming that Los Angeles County impact definitions should have been used rather than LADOT definitions for intersections in unincorporated areas. There are differences between the City and County procedures in the thresholds for significant impacts, and in the way the with-project scenario is compared to the without-project scenario.

Subtopical Response TR-ST-2.11.2: Thresholds

The following table compares the County thresholds, as defined in Los Angeles County's *Traffic Impact Analysis Report Guidelines (January 1997)* to the LADOT thresholds.

Table 2

Comparison of LADOT and LA County Traffic Impact Definitions

Intersection Impacts	Level of Service	Final V/C Ration	Project Related Increase in V/C
LADOT Guidelines	C	0.701 - 0.800	Equal to or greater than 0.040
	D	0.801 - 0.900	Equal to or greater than 0.020
	E, F	>0.900	Equal to or greater than 0.010
	Pre-Project LOS	**Pre-Project V/C**	**Project V/C Increase**
LA County Guidelines	C	0.71 - 0.80	0.040 or more
	D	0.81 - 0.90	0.020 or more
	E, F	0.91 or more	0.010 or more
Street Link Impacts	**Level of Service**	**Final V/C Ration**	**Project Related Increase in V/C**
LADOT Guidelines	C	0.701 - 0.800	Equal to or greater than 0.080
	D	0.801 - 0.900	Equal to or greater than 0.040
	E, F	>0.900	Equal to or greater than 0.020

	Two-Lane Roadways (Used for Access)				
			% Increase in PCPH[1] by Project Pre-Project LOS		
	Directional Split	Total Capacity (pcph)	C	D	E/F
LA County Guidelines	50/50	2,800	4	2	1
	60/40	2,650	4	2	1
	70/30	2,500	4	2	1
	80/20	2,300	4	2	1
	90/10	2,100	4	2	1
	100/0	2,000	4	2	1

[1] passenger car per hour

Table 2 above shows that the definition of intersection impacts is generally the same for both agencies. The one difference is that the LA County definition determines impacts based on the pre-project LOS, while the LADOT definition determines impacts based on final (or with-project) LOS. Using the LADOT definition results in a larger number of impacts being identified, since it will include some intersections not captured by the LA County definition. For intersections captured by both definitions, the impacts are identical. Therefore the LADOT definition incorporates all of the LA County definition and also includes additional impacts not captured by LA County. It can therefore be concluded that the LA county definition of intersection impacts is fully utilized and exceeded by the LADOT definition.

For street links, the LA County definition is used only for two-lane streets used for project access. Currently the only two-lane roads which could be used to access LAX are roads that will be completely redesigned and/or re-aligned as a part of the Master Plan (e.g., Jenny Avenue, Concourse Way, and W. 98th Street). Therefore there are no two-lane roads to be captured under the LA County definition. The LADOT definition, on the other hand, includes roads with two lanes and roads with more than two lanes. It is therefore concluded that the LADOT definition of street link impacts exceeds the LA County definition for this project.

Subtopical Response TR-ST-2.11.3: Comparing With-Project and Without-Project Scenarios

The table below summarizes the requirements of the LA City and LA County guidelines for comparing with-project and without-project scenarios in order to identify significant traffic impacts.

Table 3

Procedures for Comparing With-Project and Without-Project Scenarios in Traffic Impact Studies

	LA City	LA County	LAX Master Plan
Study Area	Not defined, to be determined for each project	Generally within a one-mile radius of project site	Tier I - Extends one to two miles from airport boundary, stops at I-405 Tier II - Extends one to four miles from airport boundary
Area of Related Projects	Not defined, to be determined for each project	Approximately within a one-and-a-half mile radius of the project site.	Extends five miles or more from project boundaries
Test #1			
Without-Project Baseline	Existing plus ambient growth plus related projects	Existing conditions plus ambient growth	Existing plus ambient growth plus related projects
With-Project	Add project trips to baseline trips (manually or modeled)	Add project trips to existing plus ambient (manually or modeled)	Add project trips to baseline trips (manually or modeled)
Mitigation	Mitigate all significant impacts	Mitigate all significant impacts	Mitigate all significant impacts
Test #2			
Without-Project Baseline	No second test required	Existing conditions plus ambient growth	No second test performed
With-Project	No second test required	Add project trips and project mitigations plus related projects to existing plus ambient (manually or modeled)	No second test performed
Mitigation	No second test required	Mitigate project's share of all significant cumulative impacts	No second test performed

The primary differences between the LA City and LA County procedures are:

- LA County has two tests for significant impacts, while LA City has only one test.
- LA County's first test defines the without-project baseline as the existing condition plus ambient traffic growth, while LA City's first test defines the without-project scenario as the year of project completion, including ambient growth and related projects.
- LA County limits the traffic impact area to within a one-mile radius of the project site, while LA City has an undefined impact area, which is determined for each project.
- LA County limits related projects to within a one-and-a-half mile radius of the project site, while LA City does not place a limit on the location of related projects.
- LA County's second test (which is not required by LA City) adds related projects to the mitigated with-project scenario, and compares it to existing plus ambient conditions to see if there are any further significant impacts.

If the LA County procedures were to be used for the LAX Master Plan, the impact area would be smaller than currently being analyzed, and the number of related projects would be substantially smaller. The base scenario for the first test would have less traffic (since it would not include any future growth in traffic due to related projects), so there would be fewer impacts identified. In the second test (required only in the LA County procedures), a small number of related projects would be added to the mitigated project trips to determine whether any additional impacts would result. It is not known whether this second test would identify additional impacts. However, it is anticipated that such a second test would identify the same number or fewer impacts than have been identified using the LA City procedures, since a smaller number of intersections would be tested and the ambient growth assumptions based on SCAG's growth forecasts already encompass most of the growth due to related projects within 1½ miles of the airport.

It is therefore concluded that by considering the larger study area and related project growth assumptions under the LA City requirements, the magnitude of significant impacts identified in the LAX Master Plan is as large or larger than would have been identified under the LA County requirements.

Subtopical Response TR-ST-2.11.4: Analysis of CMP Impacts

The "rules" for evaluating CMP impacts are different than those for significant environmental impacts under NEPA and CEQA. The primary purpose of the CMP analysis is to assist transportation planning agencies in Los Angeles County in developing regional transportation plans and programs.

Identification of a CMP impact is really a notice to the LACMTA and other agencies that there may be a need for regional transportation improvements in the future in the area of the impact. The CMP represents a partnership of local jurisdictions and regional planning agencies to assess the need for regional transportation improvements in light of growth in population and employment. The CMP traffic impact analyses performed by developers and/or cities provides the regional agencies with much needed information about the future regional transportation system so that appropriate plans and financing programs can be prepared.

The CMP also requires cities to be good regional citizens by monitoring their local development projects and to implement actions to improve regional mobility. In Los Angeles County, debits and credits accrue to the cities over time based on their actions. Credits for taking actions in support of improved regional mobility can offset debits accrued for actions taken that reduce regional mobility. If a city were to accrue debits, actions can be taken at the regional level to reduce transportation funding or otherwise sanction the city for its non-compliance.

In the Draft EIS/EIR, CMP impacts are identified following the CMP guidelines, and the affect of the Master Plan on the City's debits and credits is evaluated. This analysis is documented in Section 6 and Attachment G of Technical Report 3b of the Draft EIS/EIR. For Alternative D, the CMP analysis is documented in Section 6 and Attachment G of Technical Report S-2b of the Supplement to the Draft EIS/EIR.

Subtopical Response TR-ST-2.11.5: Selection of AM and PM Peak Hours

LADOT, LA County and LA CMP guidelines all specify analyses of AM and PM weekday peak hours in the transportation analysis. In keeping with these requirements, the LAX Master Plan transportation study defined AM and PM weekday peak hours for analysis. The peak hours were defined after a thorough review of traffic counts in a 50 square mile area surrounding the airport. As described in Section 7.1.2.1 of Technical Report 2b of the Draft EIS/EIR, the hours with the highest combined background and airport traffic are 8:00-9:00 AM and 5:00-6:00 PM.

Subtopical Response TR-ST-2.11.6: Additional Selection of Airport Peak Hour

The LADOT traffic study policies provide for additional traffic impact analysis, including additional peak hours, in special circumstances. LADOT and LAWA jointly determined that the LAX Master Plan represented a special circumstance, and agreed to include a third peak hour. The third peak hour represents the highest hour of airport traffic during the busiest month of the year (August) at LAX. As described on page 2-16 in Section 2.6.1 of Technical Report 3a of the Draft EIS/EIR, the 11:00 AM - 12:00 noon hour in August represents the "greatest demand on the on-airport ground transportation network."

The reason that the airport peak hour was added to the analysis was to ensure that airport traffic at its peak would not create congestion on the off-airport transportation system that exceeded congestion levels during the weekday commute peaks. As stated in the MOU between LAWA and LADOT:

> Regionally, the commute peak hours have the highest traffic volumes, and those volumes are at their highest in the winter. It is anticipated that the combination of winter peak hour demand for regional (non-airport) and airport traffic during winter commute hours will generate the highest total traffic volumes at most of the study links and intersections, thus providing an opportunity to identify both ground access corridor needs, and to identify impacted links and intersections for mitigation.
>
> Airport traffic peaks during the month of August, and the highest hour of traffic generation is during the midday. Therefore, an analysis of summer midday conditions will also be analyzed to determine whether this scenario has any additional significant impacts.

> Significant impacts and mitigation plans will be based upon the scenario with the highest total volume (either winter commute peak or summer midday) at each link and intersection.

As specified in the MOU, airport peak impacts were identified only when the total airport peak hour volume at a link or intersection exceeded both of the weekday commute peak hour volumes. In the refined intersection analysis for Alternative C and in the traffic analysis of Alternative D, the airport peak hour analysis used the same significance thresholds that were used for the AM and PM commute peak hours. This was done at the request of LADOT, and much of the refined analysis itself was performed by LADOT after Technical Report 3b had been completed. The results of this refined analysis are shown in Tables 4.3.2-25 and 4.3.2-26 in the Draft EIS/EIR. The AM and PM thresholds were also used in the airport peak hour analysis of Alternative D. The results of this analysis are shown in Tables S4.3.2-4 and S4.3.2-8 in the Supplement to the Draft EIS/EIR.

Subtopical Response TR-ST-2.12: Development of Travel Demand Models and Sub-Models - 1995 Calibration/ Validation And 1996 Update

Development of the LAX Ground Access Model is described in the *LAX Ground Access Model Calibration and Validation Report (October 1998).* This document is provided in the Draft EIS/EIR, at the end of Technical Report 2b, following Appendix II-O.

Subtopical Response TR-ST-2.12.1: Purpose of LAX Travel Demand Model

As described in the Introduction to the model calibration and validation report, on page 3,

> The LAX Ground Access Model is a regional model which 'focuses' in on a 50 square mile area surrounding LAX. It includes a detailed LAX-area trip generation and distribution model, which comprises 55 Airport zones, each with unique trip making characteristics. The model is capable of analyzing detailed intersection turning movements anywhere within its 50 square mile focus area.

Subtopical Response TR-ST-2.12.2: Summary of 1995 Model Validation and 1996 Model Update

As further described in the introduction to the model calibration and validation report, the LAX Ground Access Model was initially calibrated to represent the base year of 1994, based on 1994 and 1995 data. When more detailed 1995 on-airport data became available, the model was re-calibrated to represent 1995 conditions. Validation of the model was achieved through a comparison of model estimates to observed traffic count data at 1,460 individual locations. These locations included over 200 intersections, over 100 links, and dozens of freeway interchanges. In addition, year 1995 airport trip generation was determined through traffic counts at every airport access point plus select traffic counts at such locations as private parking lots and rental car agencies.

Under NEPA, the "existing conditions" to be described in the Draft EIS/EIR are required to represent the most recent year completed at the time of the Notice of Preparation of the analysis. This was 1996. Therefore the model was updated to represent year 1996 conditions.

Subsequent to final model calibration, the model was updated to reflect 1996 conditions. To accomplish the update to 1996, new traffic counts were collected for the 61 Tier I intersections, 30 Tier II links, and 8 freeway segments. Updates of existing land use and socio-economic data were developed for the 50 square mile study area by adding all new development projects occupied between 1994 and 1996. For the areas outside the 50 square mile study area, a review of the Caltrans reports *Traffic Volumes on California State Highways* were reviewed for the years 1994 through 1996 to determine the level of traffic growth throughout the region by county. The estimated growth factors from this review were used to increase regional traffic outside the 50 square mile study area. A new set of airport trip generation estimates was developed for the year 1996. This was accomplished by adjusting the 1995 airport trip generation numbers based on the change in airport demand and cargo activities between 1995 and 1996. It should be noted that the 1996 update did not require re-calibrating and re-validating the model. The updated 1996 data were used in the post-processor. The database available for the 1996 update was much smaller than the data available for the 1995 calibration. To recalibrate and revalidate on such a smaller database would have actually reduced the accuracy of the model. Where new 1996 data were available, the adjustments were modified accordingly. At the remaining locations, the 1994-based adjustments were maintained.

Subtopical Response TR-ST-2.12.3: Sources of Count Data 1995 and 1996

An extensive data collection program was performed in 1995 to obtain traffic counts at numerous on-airport and off-airport locations. The traffic counts collected during this time consisted of recent counts submitted by the surrounding jurisdictions, recent traffic studies for Playa Vista and other development projects, and Caltrans monitoring data. Counts received in this manner were for the years 1993 through 1995. For those locations where an existing count was not available, or where the existing count did not meet project requirements (for example, a weekend count), new traffic counts were conducted. These counts were conducted by the LAX Master Plan consultant team under the supervision of LADOT staff.

The same procedure was followed in obtaining the year 1996 traffic counts. In this case counts received from others for 1995, 1996, and 1997 were used, and new counts were conducted as needed.

Subtopical Response TR-ST-2.12.4: Comparison of Actual Traffic Growth to Modeled Traffic Growth 1996-2005

Some comments were received questioning the validity of the modeling process because the model has not been updated to incorporate recent traffic counts. The model is designed to incorporate ambient growth throughout the region. The Adjusted Environmental Baseline model incorporates future traffic volumes, not existing or recent traffic counts. Therefore the model is as valid today as it was the day it was calibrated.

To illustrate how the model incorporates ambient growth in its forecasts, annual growth rates among several traffic intersections based on counts were compared to the ambient growth rates assumed in the model. Of the 61 intersections in the Tier I study area, new traffic counts for the year 2001 were obtained from LADOT for 52 intersections. The results of this comparison are summarized in the following table.

Table 4

Annual Traffic Growth Rates - Actual and Modeled

Scenario	AM Peak Hour	PM Peak Hour
Annual Growth Rate 1996-2001 Based on Traffic Counts	1.02%	0.70%
Annual Growth Rate 1996-2005 No Action/No Project	1.93%	2.77%
Annual Growth Rate 1996-2005 Adjusted Environmental Baseline and Project Alternatives	1.32%	1.83%

This table shows that the LAX Ground Access Model is estimating that traffic is growing at an annual rate of 1.9 to 2.7 percent for the No Action/No Project Alternative, and at a rate of 1.3 to 1.8 percent for the Adjusted Environmental Baseline Alternative. In comparison, the traffic counts themselves show an annual growth rate between 1996 and 2001 of 0.70 to 1.02 percent. The model is projecting growth at a somewhat more rapid pace than has actually occurred over the last five years.

The fact that the model marginally over-estimated traffic growth compared to current traffic counts means that the model's forecasts of future year traffic conditions may be conservatively high. As a result, the number of project impacts and the magnitude of the mitigation measures may be over-stated in the current analysis. Updating the model to incorporate year 2001 counts may reduce future year traffic estimates. However, the region is currently in an economic downturn, and may experience higher growth rates in the near future. Therefore it would be better to continue using the current model forecasts, which may be conservatively high than to reduce the forecasts and later discover that the revised estimates were too low.

Subtopical Response TR-ST-2.13: Trip Generation

Comments pertaining to trip generation are addressed as follows.

Subtopical Response TR-ST-2.13.1: Airport Trip Generation and Distribution

Documentation of the procedures to estimate airport trip generation and distribution is provided in Sections 4.3.1.2 and 4.3.2.2 of the Draft EIS/EIR, Sections 2, 3, and 4 of Technical Report 2a, Sections 7.3.1 and 7.3.2 of Technical Report 2b, Section 2.6 of Technical Report 3a, Chapter III of the LAX Ground Access Calibration and Validation Report, and Section 3 of Technical Report 3b. Estimating airport trip generation for existing and future year scenarios is a complex process that has required many pages to document. This topical response is not intended to reiterate the information provided in the Draft EIS/EIR and supporting documents. Rather, it is intended to highlight certain key items of information in response to various comments received.

Subtopical Response TR-ST-2.13.2: Summary of Existing On-Airport and Off-Airport Trip Generation Estimates

Estimates of airport trip generation for existing and all future year scenarios are exactly the same in the on-airport analysis and the off-airport analysis. The number of existing airport trips is tabulated in Table 3-1 of Technical Report 2a, and in Appendix A of Technical Report 3b. While these tables reflect exactly the same number of trips, they appear to have different grand totals. This is because they sum the various trip categories in different ways. The two tables are summarized and their differences illustrated, in the table below.

Table 5

Summary of Airport Trip Generation Estimates

Peak Hour	Trip Category	Vehicle Trips (TR 3b) Column 3	Vehicle Trip-Ends (TR 2a) Column 4	PCE Trip-Ends (TR 3b) Column 5
1996 AM Peak	Terminals	6,989	6,989	6,989
	Rent-A-Car	775	992	1,167
	Public Parking Lots	114	162	138[1]
	Employee Parking Lots	269	293	293
	Cargo Facilities	1,967	1,968	2,642
	Ancillary Driveways	1,064	1,064	1,383
	Sub-Total	11,178	11,468	12,612
	Private Parking and World Way West	800	(Not Incl.)[2]	942
	Grand Total	11,978	(Not Incl.)	13,554
1996 PM Peak	Terminals	7,755	7,755	7,755
	Rent-A-Car	827	1,041	1,225
	Public Parking Lots	148	196	172[2]
	Employee Parking Lots	521	545	545
	Cargo Facilities	2,180	2,181	2,829
	Ancillary Driveways	672	672	873
	Sub-Total	12,103	12,390	13,399
	Private Parking and World Way West	784	(Not Incl.)[3]	929
	Grand Total	12,887	(Not Incl.)	14,328
1996 Airport Peak	Terminals	11,439	11,439	11,439
	Rent-A-Car	1,493	1,855	2,183
	Public Parking Lots	183	231	207[2]
	Employee Parking Lots	285	309	309
	Cargo Facilities	1,975	1,976	2,693
	Ancillary Driveways	595	596	773
	Sub-Total	15,970	16,406	17,604
	Private Parking and World Way West	1,755	(Not Incl.)[3]	2,003
	Grand Total	17,725	(Not Incl.)	19,607

[1] Parking lot shuttles stop at several different lots during one trip. The PCE trip-end summary includes only one origin and one destination for these trips. In contrast, the vehicle trip-end total in column 4 includes all shuttle stops at all parking lots. Therefore the total PCE trip-ends for this category in column 5 is lower than the total vehicle trip-ends reported in column 4.

[2] Private parking lot and World Way West trips are not included in the summary found in Table 2-3 of Technical Report 2a.

Column 3 summarizes the trip generation estimates in vehicle trips. Every trip has two trip-ends, one origin and one destination. Most airport trips have one trip-end on the airport and one trip-end off the airport. Some airport trips, however (for example, parking lot shuttles), have both their origins and destinations on the airport. If both of the trip-ends are on-airport, then one of the trip-ends is omitted so that the trip is counted only once.

Column 4 summarizes the trip generation in vehicle trip-ends. In this case, trips that travel between two airport locations are counted twice--once for the origin, and once for the destination. This column is used in the on-airport traffic analysis.

Column 5 summarizes the trip generation in Passenger Car Equivalent (PCE) trip-ends. In this case all truck trip-ends are multiplied by 2. The PCE factor for trucks is applied because trucks are larger and slower than cars, and use about twice as much roadway capacity per vehicle as cars. This column is used in the off-airport traffic analysis.

Subtopical Response TR-ST-2.13.3: Summary of Future Year Airport Trip Generation

Summaries of future year airport trip generation assumptions used in the on-airport analysis are found in the following tables of Technical Report 3a, On-Airport Ground Transportation Report, and Technical Report S-2a, Supplemental On-Airport Surface Transportation Technical Report:

- For No Action/No Project, Technical Report 3a, Tables 4.1.1.1-1, 4.1.1.1-2 and 4.1.1.1-3;
- For Environmental Baseline and Adjusted Environmental Baseline, 1996 existing trip generation was used;
- For Alternative A, Technical Report 3a, Tables 4.2.1.1-1, 4.2.1.1-2, and 4.2.1.1-3;
- For Alternative B, Technical Report 3a, Tables 4.3.1.1-1, 4.3.1.1-2, and 4.3.1.1-3;
- For Alternative C, Technical Report 3a, Tables 4.4.1.1-1, 4.4.1.1-2, and 4.4.1.1-3; and
- For Alternative D, Technical Report S-2a, Tables S-7, S18 and S38.

Summaries of future year airport trip generation used in the off-airport analysis are found in Attachment A of Technical Report 3b. The tables in Attachment A that are comparable to the tables in Technical Report 3a are the with-mitigation tables.

Subtopical Response TR-ST-2.13.4: Comparison of On-Airport and Off-Airport Trip Generation Summaries

As is the case for the existing airport trip generation estimates, the future year trip generation estimates for on-airport and off-airport analyses are exactly the same. They appear to have different totals because they add up some categories of trips in different ways. Refer to the section above on the existing trip generation estimates for a discussion on how the trip categories are treated differently in the summaries. The on-airport summaries include both the total number of vehicle trips going to the west terminal and the number of vehicles parking in the west terminal parking lots. In the off-airport summaries, these trips are counted only once. There are also separate trip generation estimates for unmitigated and mitigated conditions. The differences between unmitigated and mitigated airport trip generation are found by comparing the trip generation tables in Attachment A of Technical Report 3b.

Subtopical Response TR-ST-2.13.5: Final Trip Generation of All Scenarios and Alternatives

Total airport trip generation for the various future year alternatives is summarized in the table below.

Table 6

Airport Trip Generation Estimates For Future Year Alternatives

Peak Hour/Trip Category[1]	2005 AEB	2005 NA/NP	2005 Alt A	2005 Alt B	2005 Alt C	2005 Alt D
AM PEAK HOUR						
Sub-Total Direct Airport Trips	13,554	18,189	18,554	17,850	17,482	n/a
Collateral Development	0	6,256	3,637	3,922	2,393	n/a
Trips Eliminated Due To Land Acquisition	0	0	(2,531)	(2,695)	(2,694)	n/a
Net Total Airport Trip Generation	13,554	24,445	19,660	19,077	18,336	n/a
PM PEAK HOUR						
Sub-Total Direct Airport Trips	14,328	18,563	18,822	18,204	17,841	n/a
Collateral Development	0	6,294	3,451	4,423	2,789	n/a
Trips Eliminated Due To Land Acquisition	0	0	(2,383)	(2,383)	(2,522)	n/a
Net Total Airport Trip Generation	14,328	24,857	19,890	20,244	19,403	n/a
AIRPORT PEAK HOUR						
Sub-Total Direct Airport Trips	19,607	24,226	24,353	23,429	23,282	n/a
Collateral Development	0	2,036	1,549	2,099	1,357	n/a
Trips Eliminated Due To Land Acquisition	0	0	(1,570)	(1,690)	(1,690)	n/a
Net Total Airport Trip Generation	19,607	26,262	24,332	23,838	24,951	n/a
Peak Hour/Trip Category	**2015 AEB**	**2015 NA/NP**	**2015 Alt A**	**2015 Alt B**	**2015 Alt C**	**2015 Alt D**
AM PEAK HOUR						
Sub-Total Direct Airport Trips	13,554	19,625	22,606	22,378	23,565	18,175
Collateral Development	0	12,540	4,356	4,134	4,134	4,134
Trips Eliminated Due To Land Acquisition	0	0	(2,590)	(2,741)	(2,739)	(2,150)
Net Total Airport Trip Generation	13,554	32,165	24,372	23,771	24,960	20,159
PM PEAK HOUR						
Sub-Total Direct Airport Trips	14,328	19,931	24,333	24,210	23,287	18,527
Collateral Development	0	12,479	4,860	4,656	4,656	4,654
Trips Eliminated Due To Land Acquisition	0	0	(2,373)	(2,505)	(2,505)	(1,973)
Net Total Airport Trip Generation	14,328	32,410	26,820	26,361	25,438	21,208
AIRPORT PEAK HOUR						
Sub-Total Direct Airport Trips	19,607	23,837	31,329	30,850	29,644	26,416
Collateral Development	0	3,984	2,409	2,261	2,261	2,260
Trips Eliminated Due To Land Acquisition	0	0	(1,608)	(1,693)	(1,693)	(1,170)
Net Total Airport Trip Generation	19,607	27,821	32,130	31,418	30,212	27,506

[1] The sources of these numbers are Table 4.3.2-4 in the Draft EIS/EIR and, for Alternative D, Table S4.3.2-1 of the Supplement to the Draft EIS/EIR. These tables contained some typographical errors, which have been corrected as shown in the attachment to this topical response.

Comments were received questioning the validity of the off-airport transportation impact analysis because the total AM and PM peak hour airport trip generation estimates were lower in the project alternatives than in the No Action/No Project alternative. As described earlier in this topical response, the identification of transportation impacts is based upon a comparison between the Adjusted Environmental Baseline and the Project Alternatives. Clearly, as the table above shows, the project alternatives generate many more trips than the Adjusted Environmental Baseline. The comparison between the project alternatives and the No Action/No Project Alternative is not used to identify impacts. Therefore, the fact that the No Action/No Project has more AM and PM peak hour airport trips than the project alternatives does not affect the impact analysis or the mitigation measures recommended in the Draft EIS/EIR.

Subtopical Response TR-ST-2.13.6: Trip Generation Considerations in Airport Acquisition Areas

The table above shows that some trips are eliminated due to land acquisition. These trip reductions reflect that fact that LAWA is purchasing already developed land and removing the existing structures in order to use the land for the airport. An example of this type of land acquisition is Manchester Square, where many existing homes are being purchased and removed. There are trips currently being made by the residents of these homes. Once the homes are removed, the trips will no longer be made from that location, and they must be removed from the traffic forecasts. The reduction of these trips eliminated due to land acquisition show up as negative numbers in the summary table above.

Subtopical Response TR-ST-2.13.7: Incorporation of Seasonal Variations in Airport Trips

Some comments noted that the off-airport traffic counts were taken during the winter months, while the airport peak occurs during the summer months and therefore questions whether the true airport traffic impacts were captured in the modeling process. Off-airport traffic counts were taken during non-summer months when airport traffic was not at its peak. But trip generation counts for airport passenger and employee trips were taken during August of 1996. As described in Technical Report 3a, Section 2.4, page 2-14:

> The commuter peak occurs during the spring (March) and reflects when the a.m. and p.m. volumes are the highest for the airport. The traditional airport peak occurs during the summer (August) when the noon volumes are the highest at the airport. Therefore, a summer design day was created by compiling the worst case scenario for each time period. This required the use of seasonal factors to adjust the a.m. and p.m. data collected in August of 1996 to reflect non-summer peak demand during these periods. The 8-9 a.m. and 5-6 p.m. demand volumes have been adjusted by appropriate seasonal factors to account for non-summer air traffic. The airport peak hour (11 a.m. to noon) was applied directly in the model without any adjustment factor.

The number of airport trips used in both the on-airport and off-airport analyses represented the highest peak hour volumes. The AM and PM weekday peak hour airport trips were based on non-summer conditions when these peaks are the highest at the airport. The airport peak hour was based on summer conditions, when this hour is the highest at the airport.

For regional (non-airport) trips, the AM and PM peak hour volumes are based on the non-summer traffic counts. For the summertime airport peak hour, adjustments were made to the regional trips to represent summertime conditions. These adjustments are described in the LAX Ground Access Model Calibration and Validation Report, Section VII.[92]

Subtopical Response TR-ST-2.13.8: Geographic Distribution of Airport Trips

Geographic distribution of airport trips is described in Technical Report 3b, Section 3.6, page 3-10, which states:

> The distribution of existing airport passenger trips was determined from passenger surveys. For future years, the distribution was modified based on changes in population and employment around the region. The distribution of existing employee trips was determined from employee surveys taken as a part of employer trip reduction programs (previously mandated under Regulation XV by the South Coast Air Quality Management District). Future employee distributions were modified based on changes in population. The distribution of existing cargo and ancillary trips were determined from interviews with cargo carriers serving the airport. These distributions were not modified for the future scenarios. Distributions of collateral trips (LAX Northside, Westchester Southside, and Continental City) were taken directly from the trip distribution module of the LAX Ground Access Model. This module is a 'gravity model' distribution module patterned after the SCAG and Los Angeles Citywide Framework models.

For future year passenger trips, adjustments were made to the geographic distribution based on projected population and employment growth. This was accomplished through the following steps:

- Each zone was assigned a percentage of airport passenger trips based on the distribution of existing trips obtained from passenger surveys;
- The percentage for each zone was then multiplied by - (future total of population and employment)/(existing total of population and employment);
- Zones without any existing population or employment were assigned future year percentages based on the characteristics (airport trip percentage/sum of population and employment) of the nearest non-zero zone;

[92] The LAX Ground Access Model Calibration and Validation Report (October 1998) is provided in the LAX Master Plan CDs, attached to the end of Technical Report 2b following Attachment II-O.

- The new distribution percentages totaled more than 100 percent, so each of the new zonal percentages was reduced by a uniform factor so that the new total would be 100 percent; and
- The new percentages were used to determine future year distributions of airport passenger trips.

For airport employee trips and cargo employee trips, the same adjustment procedure was followed to estimate the trip distribution of future year employee trips. Trips generated by LAX Northside/Westchester Southside and Continental City were distributed automatically within the model, following the same procedures used in the SCAG and Los Angeles Citywide Framework models. These procedures spread the trips into the surrounding region, after considering the size and locations of population and employment throughout the region, average trip lengths for these trips within the Southern California region, and other factors.

As shown in the LAX Ground Access Model Calibration and Validation Report, Section IIIE, page III-5, cargo truck trips for all existing and future year scenarios were distributed using the following percentages:

- North - 40 percent;
- South - 24 percent;
- Northeast - 12 percent;
- Southeast - 4 percent; and
- LAX area - 20 percent.

Truck trips to the north were assigned in the model to the northern boundary of Los Angeles County near I-5. Truck trips to the south were sent to the Ports of Los Angeles and Long Beach. Truck trips to the northeast were sent to eastern Los Angeles County near I-10. Truck trips to the southeast were sent to Orange County near I-5. Truck trips to the LAX area were assigned to zones with industrial land uses within one mile of LAX.

Subtopical Response TR-ST-2.14: Results of Travel Demand Forecasts

The results of the travel demand forecasts for on-airport surface transportation facilities are described in the Draft EIS/EIR in Sections 4.3.1.3 and 4.3.1.6. Additional documentation is provided in Technical Report 3a, Section 4.

The results of the travel demand forecasts for off-airport surface transportation facilities is described in the Draft EIS/EIR in Sections 4.3.2.3 and 4.3.2.6. Additional documentation is provided in Technical Report 3b, Section 4 and Attachments C, D, and E.

Several comments were received questioning the validity of the travel demand forecasts because several surface transportation facilities are predicted to have less traffic with the project than without the project. This and other issues regarding the results of the travel demand forecasting are addressed below.

Subtopical Response TR-ST-2.15: Future Conditions Without LAX Master Plan

The scenario defined to approximate future year conditions if the LAX Master Plan is not approved is the No Action/No Project Alternative. This alternative is defined to included estimated growth in air passenger demand, growth in air cargo activity, and development of the Continental City and LAX Northside developments to their full entitlements.

Subtopical Response TR-ST-2.15.1: Airport Trip Generation

The resulting increases in airport trip generation, in the scenario where the LAX Master Plan is not approved as compared to the Adjusted Environmental Baseline, are shown in Table 7 below.

Table 7

Airport Trip Generation Estimates if LAX Master Plan is Not Approved

Peak Hour/Trip Category	Adjusted Env. Baseline	2005 No Action/No Project	2015 No Action/No Project
AM Peak Hour			
Direct Airport Trips	13,554	18,189	19,625
Collateral Trips	0	6,256	12,540
Trips Eliminated Due to Land Acquisition	0	0	0
Total Airport Trips	13,554	24,445	32,165
PM Peak Hour			
Direct Airport Trips	14,328	18,563	19,931
Collateral Trips	0	6,294	12,479
Trips Eliminated Due to Land Acquisition	0	0	0
Total Airport Trips	14,328	24,857	32,410
Airport Peak Hour			
Direct Airport Trips	19,607	24,226	23,837
Collateral Trips	0	2,036	3,984
Trips Eliminated Due to Land Acquisition	0	0	0
Total Airport Trips	19,607	26,262	27,821

This table shows that direct travel to and from LAX during the AM peak hour will grow from 13,554 in 1995 to 19,625 in 2015 (a 45 percent increase in direct airport travel). In addition, another 12,540 trips will be generated by new development in Continental City and LAX Northside. The combined total increase in AM peak hour trips at LAX will be 18,611 (136 Percent). Comparable increases are estimated for the PM and airport peak hours. Year 2005 increases are similar, but smaller in scale. Note that during the airport peak hour the year 2015 direct airport trips is slightly lower than in 2005 (this occurs only during the airport peak hour). The reason for this peak hour reduction is that, even though there are more total daily direct airport trips in 2015, they are spread out more evenly across the day.

Subtopical Response TR-ST-2.15.2: Traffic Volumes and Congestion Levels

The estimated growth in traffic, including both airport traffic and non-airport regional traffic, will increase traffic levels and cause additional congestion in the areas around the airport. As Table 4.3.2-3 of the Draft EIS/EIR shows, the number of deficient surface transportation facilities in the study area will grow from 29 in 1996 to 55 in 2015. As Table 4.3.2-5 of the Draft EIS/EIR shows, the number of lane-miles of freeways and arterials in the Tier I study area operating at LOS F during the PM peak hour will increase from 85 in 1996 to 151 by 2015.

As Table 8 below shows, freeway traffic will increase significantly if the LAX Master Plan is not approved.

Table 8

Freeway Traffic Estimates if LAX Master Plan is Not Approved

Peak Hour/Trip Category[1]	Existing (1996)[2] NB/EB	Existing (1996)[2] SB/WB	2005 No Action/No Project[3] NB/EB	2005 No Action/No Project[3] SB/WB	2015 No Action/No Project[4] NB/EB	2015 No Action/No Project[4] SB/WB
AM Peak Hour						
I-405 n/o Venice Bl.	9,512	8,361	9,140	9,602	9,327	10,055
I-405 n/o La Tijera Bl.	8,281	8,496	9,257	10,219	9,183	11,666
I-405 s/o Rosecrans Ave.	9,641	7,347	10,761	7,989	10,338	8,319
I-105 e/o Crenshaw Bl.	7,004	8,768	7,139	9,809	7,263	9,701
PM Peak Hour						
I-405 n/o Venice Bl.	9,321	8,253	10,601	8,747	11,775	9,322
I-405 n/o La Tijera Bl.	9,239	8,586	10,884	9,839	11,873	10,733
I-405 s/o Rosecrans Ave.	8,435	9,713	9,371	11,188	9,762	11,558
I-105 e/o Crenshaw Bl.	8,375	8,333	9,247	8,555	9,317	8,922
Airport Peak Hour						
I-405 n/o Venice Bl.	9,576	10,112	11,577	11,562	12,132	12,341
I-405 n/o La Tijera Bl.	9,100	8,549	11,193	10,026	11,879	11,151
I-405 s/o Rosecrans Ave.	8,510	8,398	11,170	10,085	11,420	10,891
I-105 e/o Crenshaw Bl.	6,043	6,225	6,204	6,957	6,097	6,769

1 Future year freeway volumes include both mainline and high-occupancy-vehicle (HOV) lanes.
2 Technical Report 2b, Table II-7.6, page II-7.17
3 Technical Report 3b, Appendix C, page 99 of 452
4 Technical Report 3b, Appendix C, page 147 of 452

Most of the freeway traffic growth in the study area occurs between 1996 and 2005 due to the fact that nearly all population and employment growth in this area is predicted to occur by 2005, and that most of the programmed freeway improvements in the study area will be completed by 2005. There is also some change in directionality of the trips, which results in the AM peak direction changing at some freeway locations. Between 2005 and 2015, most regional population/employment growth and most major regional transportation improvements occur outside the study area. Therefore the freeway traffic levels in the study area remain about the same between 2005 and 2015.

Of course, not all of these impacts will be the result of increasing traffic to/from LAX alone. Table 4.3.2-3 of the Draft EIS/EIR shows that about 70 percent of the increase in the number of deficient surface transportation facilities by year 2015 will occur even if traffic to/from LAX remains at year 1996 levels.

Subtopical Response TR-ST-2.15.3: Opportunity for Mitigation by LAWA

A critical factor that is often overlooked in assessing future year conditions without an approved LAX Master Plan is that LAWA is prohibited by law from funding any transportation improvements (or any other improvements, except for a few specific programs mandated by court action) off of airport property. Use of airport revenues for this purpose is considered a transfer of funds to non-airport uses and is strictly forbidden.

In this no-Master Plan scenario, not only does LAWA have no incentive to improve the regional transportation system, it is prevented from doing so by law. It will be the responsibility of other local, regional, and state agencies to plan and to finance transportation improvements to mitigate the transportation impacts of regional growth, including airport growth, if the LAX Master Plan is not approved.

Subtopical Response TR-ST-2.16: Future Conditions With LAX Master Plan

Approval of the LAX Master Plan will increase traffic for direct airport-related activities (refer to table above), but at the same time it will put into effect several actions to improve traffic conditions throughout the study area. As described in Section 4.3.2.6.2 of the Draft EIS/EIR, Technical Report 3b, Section 3, Section 4.3.2.6.1.2 of the Supplement to the Draft EIS/EIR, and Technical Report S-2b, Section 3, these actions will include:

- Elimination of existing traffic generators near the airport that will be acquired and removed to facilitate future airport operations;
- Reduction in entitled collateral development at LAX Northside by roughly 50 percent, and complete elimination of the entitled development at Continental City;
- Construction of a new expressway (the LAX Expressway) adjacent to I-405 starting just north of the I-405/Howard Hughes Parkway interchange and connecting to the new Airport Ring Road (Alternatives A, B, and C);
- Construction of a new non-stop Airport Ring Road connecting the LAX Expressway at Arbor Vitae Street to the airport terminal areas, and encircling the north, west and south sides of the airport (Alternatives A, B, and C); and
- Relocation of key airport access and public parking facilities to the eastern end of the airport property (Alternative D).

The combined affect of the Project's trip generation increases, trip generation decreases, and roadway capacity increases is to improve overall traffic conditions compared to the No Action/No Project alternative. As Table 4.3.2-6 of the Draft EIS/EIR shows, approval of any of the project alternatives (A, B, or C) will increase year 2015 average travel speeds and reduce vehicle hours of travel in the study area, and will reduce the lane-miles of roadways (freeways and arterials) operating at LOS F from 151 to between 135 and 140.

Table 4.2 in Technical Report 3b and Table S9 in Technical Report S-2b show that the number of transportation facilities significantly impacted by airport traffic growth is much smaller if the LAX Master Plan is approved than if it is not approved. Table 9 below summarizes, the No Action/No Project alternative would create significant impacts at 67 transportation facilities, while the four project alternatives will reduce this number to between 39 and 62.

Table 9

Transportation Facilities Significantly Impacted By Airport Traffic Growth

Alternatives[1]	2005	2015
No Action/No Project	50	67
Alternative A	35	45
Alternative B	32	39
Alternative C	29	41
Alternative D[2]	N/A	62

1 Comparative summary of impacts at study locations common to all alternatives.
2 Technical Report S-2b, Table S10.

Alternatives A, B, and C

The reduction in traffic congestion that is experienced by Alternatives A, B, and C is primarily the result of the transportation improvements that are provided with the project. The difference in trip generation between the No Action/No Project alternative and any of these project alternatives is relatively small. In the 2015 airport peak, for example, all of these project alternatives have higher airport trip generation than the No Action/No Project alternative, yet the amount of traffic congestion is still lower in all of the project alternatives.

One of the most important elements of Alternatives A, B, and C that has an affect on traffic is the LAX Expressway. This 6-lane facility, if built, would substantially reduce traffic volumes on the parallel I-405 Freeway.

Table 10

Freeway Traffic Estimates if LAX Master Plan is Approved

Peak Hour/Trip Category[1]	2005 Alt A[2]		2005 Alt B[3]		2005 Alt C[4]		2005 Alt D	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
AM Peak Hour								
I-405 n/o Venice Bl.	10,420	11,082	10,384	11,077	10,373	11,049	n/a	n/a
I-405 n/o/ La Tijera Bl.	10,056	11,465	10,002	11,471	9,894	11,381	n/a	n/a
I-405 s/o Rosecrans Ave.	10,679	8,687	10,588	8,640	10,673	8,636	n/a	n/a
I-105 e/o Crenshaw Bl.	7,609	9,669	7,602	9,665	7,507	9,698	n/a	n/a
PM Peak Hour								
I-405 n/o Venice Bl.	12,254	10,503	12,222	10,533	12,232	10,549	n/a	n/a
I-405 n/o/ La Tijera Bl.	11,946	10,867	12,035	10,893	11,965	10,834	n/a	n/a
I-405 s/o Rosecrans Ave.	9,655	11,232	9,697	11,247	9,680	11,214	n/a	n/a
I-105 e/o Crenshaw Bl.	9,305	8,616	9,261	8,681	9,253	8,674	n/a	n/a
Airport Peak Hour								
I-405 n/o Venice Bl.	12,932	13,088	13,000	13,121	12,991	13,125	n/a	n/a
I-405 n/o/ La Tijera Bl.	12,081	11,324	12,066	11,439	12,135	11,359	n/a	n/a
I-405 s/o Rosecrans Ave.	11,292	10,438	11,295	10,464	11,305	10,459	n/a	n/a
I-105 e/o Crenshaw Bl.	6,372	7,068	6,417	7,065	6,392	7,048	n/a	n/a

Peak Hour/Trip Category	2015 Alt A[5]		2015 Alt B[6]		2015 Alt C[7]		2015 Alt D[8]	
	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
AM Peak Hour								
I-405 n/o Venice Bl.	9,666	10,217	9,576	10,079	9,760	10,210	9,927	10,415
I-405 n/o/ La Tijera Bl.	8,428	8,988	9,064	9,405	8,494	8,969	9,283	11,450
I-405 s/o Rosecrans Ave.	10,292	8,778	10,186	8,738	10,292	8,965	10,196	8,623
I-105 e/o Crenshaw Bl.	8,000	10,332	7,988	10,295	8,089	10,331	7,370	9,390
PM Peak Hour								
I-405 n/o Venice Bl.	11,782	9,583	11,717	9,456	11,877	9,568	11,917	9,869
I-405 n/o/ La Tijera Bl.	9,980	9,261	10,384	9,956	9,986	9,150	11,833	10,781
I-405 s/o Rosecrans Ave.	9,988	11,573	9,933	11,420	9,919	11,627	9,915	11,320
I-105 e/o Crenshaw Bl.	9,968	9,926	9,930	9,872	9,988	9,683	9,034	9,115
Airport Peak Hour								
I-405 n/o Venice Bl.	12,588	12,721	12,570	12,651	12,599	12,617	12,907	11,874
I-405 n/o/ La Tijera Bl.	10,489	9,225	11,026	10,014	10,391	9,110	12,501	11,884
I-405 s/o Rosecrans Ave.	11,559	11,369	11,478	11,291	11,515	11,276	11,632	11,208
I-105 e/o Crenshaw Bl.	6,980	7,534	6,974	7,514	6,896	7,467	6,269	6,782

1 Future year freeway volumes include both mainline and high-occupancy (HOV) lanes.
2 Technical Report 3b, Attachment C, page 115 of 452.
3 Technical Report 3b, Attachment C, page 123 of 452.
4 Technical Report 3b, Attachment C, page 131 of 452.
5 Technical Report 3b, Attachment C, page 155 of 452.
6 Technical Report 3b, Attachment C, page 163 of 452.
7 Technical Report 3b, Attachment C, page 171 of 452.
8 Technical Report S-2b, Attachment C, page 816 of 2,447 in the Supplement to the Draft EIS/EIR.

In the year 2015, traffic on I-405 is reduced by Alternatives A, B, and C throughout the two-mile segment parallel to the LAX Expressway. The reduction in traffic volumes is substantial, when compared to the No Action/No Project alternative:

- During the AM peak hour, southbound traffic on I-405 north of La Tijera Boulevard is reduced by between 2,261 and 2,697 vehicles, depending on the alternative;
- During the PM peak hour, northbound traffic on I-405 north of La Tijera Boulevard is reduced by between 1,489 and 1,893 vehicles, depending on the alternative; and
- During the airport peak hour, northbound traffic on I-405 north of La Tijera Boulevard is reduced by between 853 and 1,488 vehicles, and southbound traffic is reduced by between 1,137 and 2,041 vehicles.

These reductions do not occur because there is a reduction in total trips in the study area; they occur because there is a parallel facility that now can carry thousands of vehicles. Together, the two facilities carry much more traffic than the I-405 would carry by itself. At the same time, levels of service and travel speeds are better on both facilities than would be experienced on I-405 without the LAX Expressway.

With the additional capacity available between the Howard Hughes Parkway and Arbor Vitae interchanges, a large percentage of airport-related traffic shifts over to the LAX Expressway because of its convenient direct airport access. The large majority of these airport trips use I-405 to get to the LAX Expressway. This shift in airport traffic toward I-405 and the LAX Expressway means that there are fewer airport-related trips on the arterial streets in the study area.

One result of Master Plan Alternatives A, B, and C then, is to remove many airport trips from the arterial streets. Of course, some of these trips are then replaced by non-airport regional traffic. Overall, the amount of traffic on the arterial streets is reduced and the levels of service and speeds on two miles of I-405 are better with the LAX Master Plan alternatives, when compared to the scenario where the Master Plan is not approved (No Action/No Project).

Alternative D

Alternative D does not include the LAX Expressway as a part of the alternative definition. As a result, I-405 volumes in Alternative D are higher between Century Boulevard and Howard Hughes Parkway than in Alternatives A, B, and C. In addition, Alternative D has more impacts on arterial streets and intersections than were found in Alternatives A, B, and C. The primary affect of Alternative D is to keep airport trips on I-405 longer, minimizing the use of arterial streets to access the airport. This means that there will be substantially fewer airport trips on the arterial streets. This effect is most noticeable on the streets north of LAX. The reduction in airport trips on arterial streets is counter-balanced by a shift in non-airport trips away from the freeway and onto the arterial streets.

Subtopical Response TR-ST-2.17: Approach to Mitigating Traffic Impacts

Mitigation of off-airport transportation impacts for Alternatives A, B, and C is described in Section 4.3.2.9 of the Draft EIS/EIR, and in Technical Report 3b, Section 5. For Alternative D, mitigation of off-airport transportation impacts is described in Section 4.3.2 of the Supplement to the Draft EIS/EIR and in Section 5 of Technical Report S-2b.

As described in Section 5, page 5-1 of Technical Report 3b:

- The Off-Airport Ground Access Plan consists of the following components:
- Improvements which are essential elements in the definition of Master Plan Alternatives;
- Transit Improvements;
- Neighborhood Traffic Management Plan; and
- Measures to mitigate Master Plan transportation impacts, plus additional improvements to enhance airport access and egress.

Essential elements in the definition of Master Plan alternatives (the first bullet) have already been discussed previously in this topical response. The other three elements of the ground access plan are discussed below.

Subtopical Response TR-ST-2.17.1: NEPA/CEQA and Local Requirements and Guidelines

While the procedures used to identify significant transportation impacts are different (refer to previous section on Definition of Significant Impacts), the NEPA, CEQA and LADOT requirements for mitigating significant environmental impacts are generally the same. Once a significant environmental impact is identified, measures are to be designed to mitigate the impact to a level of insignificance. In the case of transportation impacts, this generally means to implement measures that will either reduce the traffic volume or increase the capacity at the location of the impact.

Subtopical Response TR-ST-2.17.2: Principles for Ground Access

As presented in Technical Report 3b, Section 1.1:

The Master Plan Principles for Ground Access are as follows:

- Maximize use of the regional transportation system;
- Explore opportunities to connect to regional transit systems;
- Minimize impacts to local streets; and
- Protect neighborhoods.

These principles have guided the transportation analysis of the LAX Master Plan from the beginning of the process. They were instrumental in defining the essential elements of the Master Plan, including the LAX Expressway and the Airport Ring Road. They were instrumental in the definition of transit improvements within the ground access plan. They led to the comprehensive neighborhood traffic management measures proposed for the project. Finally, they guided the development of local traffic mitigation measures, including commitments to traffic improvements not required to mitigate impacts, but still necessary based on the guiding principles for ground access.

Subtopical Response TR-ST-2.17.3: General Approach to Traffic Mitigation

The general approach to traffic mitigation for the LAX Master Plan is to develop a ground access plan that follows the four principles identified above. In meeting these principles, the ground access plan exceeds the requirements of NEPA, CEQA, and LADOT by providing improvements to facilities that are not significantly impacted by the project.

One of the most important considerations in the development of the ground access plan is that impacts to be mitigated are not identified by comparing the project alternatives to the No Action/No Project Alternative. Instead, the impacts are identified by comparing the project alternatives to the Adjusted Environmental Baseline alternative. This greatly increases the differences between without-project traffic volumes and with-project traffic volumes, and results in a more robust mitigation program.

An example of the importance of using the Adjusted Environmental Baseline as the basis for the impact and mitigation analysis is found in the assumptions for LAX Northside. By prior action, the LAX Northside project is fully entitled, and the transportation mitigation measures for this project (such as the construction of Westchester Parkway between Pershing Drive and Sepulveda Westway) have already been implemented. Yet by using the Adjusted Environmental Baseline as the basis for identifying impacts, the analysis of the impacts of proposed development at this location (whether named LAX Northside or Westchester Southside) are assessed again. Even though the transportation impacts of development at this site are already mitigated, they are being mitigated a second time.

The ground access plan is summarized below.

Subtopical Response TR-ST-2.18: Maximize Use of the Regional Transportation System

Airport access via the regional transportation system is critical to the airport access plan. The LAX Expressway and Ring Road are both designed specifically to maximize use of the regional transportation system by airport trips. During the planning period, it was discovered that not only could the use of the regional transportation system be maximized, but substantial benefits to the entire region could be achieved at the same time. As the discussion above on what will happen if the LAX Master Plan is approved shows, these facilities enable the study area to have higher average travel speeds and better levels of service than if the project is not approved. In essence, the ground access plan successfully maximizes the percentage of airport trips using I-405 and I-105 to access the airport, thereby minimizing the percentage of airport trips using arterial streets. It also successfully improves freeway operations for a large segment of the I-405 Freeway.

Subtopical Response TR-ST-2.19: Explore Opportunities to Connect to Regional Transit Systems

The ground access plan explores several opportunities to connect to regional transit systems. Opportunities identified as elements of the ground access plan include:

- Connections to the Green Line

In Alternatives A, B and C, the Green Line will be extended to provide a station at one of the passenger terminal areas. In Alternative D, the existing Green Line will be connected to the Central Terminal Area (CTA) through the construction of a moving pedestrian walkway from the Green Line station at the southeast corner of Aviation Boulevard and Imperial Highway to the proposed Intermodal Transportation Center (ITC), and an Automated People Mover from the ITC to the CTA. These proposed extensions of or connections to the Green Line would maximize the potential for rail access to LAX. The impact and mitigation analysis maintains a conservatively low estimate of the reduction in vehicle trips achieved by the rail access in order to avoid under-estimating the need for other mitigation measures. This does not in any way reduce the Airport's commitment to the rail connection, however, but instead demonstrates a commitment to a multi-modal program to mitigate impacts and optimize airport access.

- Relocated and Expanded LAX Transit Center

  The LACMTA, SCAG, LADOT, and others have long planned for a substantially expanded bus and rail transit system throughout the region. The LAX Transit Center not only provides a convenient facility for airport access via transit buses, but also provides a high-quality bus transfer facility for non-airport transit trips. For Master Plan Alternatives A, B and C, the LAX Transit Center would be relocated. LAWA would work with transit operators to determine the location and design of this relocated facility. In Alternative D, the Intermodal Transportation Center, located at the northeast corner of Aviation Boulevard and Imperial Highway, would replace the functions of the LAX Transit Center.

Subtopical Response TR-ST-2.20: Minimize Impacts to Local Streets

This principle provides guidance for mitigating impacts to arterial intersections and links in the Tier I and Tier II study areas. The objectives for mitigating impacts to local streets are:

- Provide improvements to impacted intersections and links to reduce project impacts below the level of significance;
- Ensure that additional congestion is not created during airport peak hours;
- Enhance operations at primary airport access facilities even if they are not significantly impacted by the project; and
- Coordinate and cooperate with local jurisdictions and local/state agencies to mitigate as many significant transportation impacts as possible while maintaining consistency with local plans, and to avoid causing unacceptable secondary impacts to adjacent land uses.

The mitigation measures identified in Section 4.3.2.9 of the Draft EIS/EIR, and in Section 4.3.2.8 of the Supplement to the Draft EIS/EIR for Alternative D, are designed to meet these objectives. Measures proposed to mitigate impacts include the use of centralized traffic signal coordination enhancements such as ATSAC and ATCS, the addition of turning or "through" lanes at intersections through restriping or roadway widening, modification to signal phasing, and other measures.

Impacts are mitigated to the extent possible, and the remaining impacts are identified as significant and unavoidable environmental impacts.

Subtopical Response TR-ST-2.21: Protect Neighborhoods

Protecting neighborhoods is one of the four principles guiding the design of this alternative and its transportation analysis. The access and egress points to and from the proposed passenger facilities will be located to minimize the likelihood of traffic using residential streets as short-cuts. Carefully planned guide signing and Intelligent Transportation System measures will also be installed to keep airport traffic out of residential communities.

Establishing the LAX Expressway and Airport Ring Road provides additional capacity for both airport-related and non-airport traffic to better use the freeway system rather than using surface streets, particularly for traffic traveling between LAX and points north of the airport. Despite the extensive transportation enhancements proposed under the project alternatives, if residents near LAX believe that airport traffic will intrude into their neighborhoods, procedures have been established by the Los Angeles Department of Transportation to address their concerns through the possible implementation of traffic calming measures. Neighborhood traffic calming measures may include, but are not limited to: striping modifications; installation of strategically-placed turn restrictions; installation of stop signs; one-way street

conversions; installation of speed humps, and construction of chokers, traffic circles, and raised medians. These controls are intended for local and collector streets only. All approved traffic controls should convey clear and unambiguous messages, be justified by meeting certain warrants (such as for stop signs), and regulate the traffic for which they are applied and intended, as described in the Caltrans Traffic Manual.

An effective Neighborhood Traffic Management Plan can only be implemented on a neighborhood-wide basis and must be a collaborative effort involving traffic engineers, neighborhood residents, City Council representatives, and homeowners' associations (where applicable). The implementation of traffic controls can often cause traffic to shift from one residential street to another, so it is vital that there be a consensus among the residents as to the goals and implications of any proposed plan.

To ensure that the Neighborhood Traffic Management Plan process runs smoothly, it is suggested that, for each community that is deemed potentially impacted by airport-related traffic, outreach meetings take place to identify and discuss existing and anticipated airport traffic concerns. Strategies and options for a traffic control plan, criteria to achieve support from the majority of the affected residents toward a proposed plan, and funding mechanisms should all be discussed at these outreach meetings. The program is described on pages 35 and 36 of Section 5.1 of Technical Report S-2b of the Supplement to the Draft EIS/EIR.

The overall objective of the neighborhood traffic management program is to cooperate jointly with the communities to both define specific problems and then to design acceptable solutions for each specific problem. The primary advantage of this approach is that the community itself is involved in all aspects of the program, including defining the study area, defining problems, establishing goals, and reaching agreement on solutions. LAWA and LADOT recognize that this type of interaction is essential to achieving acceptable, workable solutions for the individual neighborhoods. The ground access plan for the LAX Master Plan makes the commitment for this program, beginning with approval of the Master Plan, and continuing until the Master Plan construction period has been completed. This will ensure that the critical neighborhood airport traffic issues are addressed, not just once, but over the next several years.

Subtopical Response TR-ST-2.22: CMP Analysis and Mitigation Strategy

The CMP analyses, as documented in Section 6 of Technical Report 3b and Section 6 of Technical Report S-2b, follow guidelines published by the LACMTA. The CMP for Los Angeles County provides for local jurisdictions to fully meet their requirements in mitigating CMP impacts by participating in and fulfilling the requirements of the Countywide Deficiency Plan. The Countywide Deficiency Plan creates a "bank" in which debits are accrued each time a development project is approved, and credits are accrued each time the jurisdiction implements a transportation improvement which benefits the regional transportation system. Action is not required at the project level. Instead, each jurisdiction reports its debits and credits on an annual basis, and compares its credits to its debits. As long as a positive balance is maintained, all CMP mitigation requirements are met in full. Failure to meet the Deficiency Plan requirements may affect the amount of funding available to the jurisdiction, but does not invalidate local land use decisions or EIR certifications.

Following the guidelines, the CMP analysis identifies CMP impacts on the regional highway and transit systems, identifies possible improvements at these locations, and estimates the costs of these possible improvements. In the analysis of Alternative C, CMP impacts are defined using the No Action/No Project alternative as the baseline. In order to identify more CMP impacts, the CMP analysis of Alternative D uses the Adjusted Environmental Baseline as the baseline for defining CMP impacts.

Subtopical Response TR-ST-2.23: Subsequent Environmental Impact Studies and Project Study Reports

The current Draft EIS/EIR is a program level environmental analysis. As stated in Section 4, page 4-6:

> Consequently, this Draft EIS/EIR has been prepared to address the more general level of detail that is required for 'program level' entitlements under CEQA, and to serve as the basis for an unconditional approval by the FAA of a revised ALP for LAX. It is anticipated that subsequent environmental documents will address various environmental issues at more specific levels of detail as necessary and appropriate. Due to the overall size and complexity of the LAX Master Plan, and in an effort to be as comprehensive and thorough as is feasible at this point in the process, this Draft EIS/EIR contains considerable

analysis that is beyond the general level of detail normally found in a 'program level' environmental document.

Because this is a program level environmental document, it is not intended as the basis to obtain approval of every single transportation improvement identified. For example, the proposed LAX Expressway in Master Plan Alternatives A, B and C, and the proposed I-405 and I-105 interchanges in Alternative D would likely require project level EIRs to be prepared and approved before construction could commence. Other improvements, such as the intersection improvements, would not require preparation of a project level environmental document prior to construction.

TR-ST-3: Construction Traffic

Introduction

A number of questions and comments were received regarding the project's approach to accommodating construction traffic. This topical response generally responds to these questions and comments about the approach and principles that formed the basis of the construction traffic plan.

Discussion

The construction plan and its resulting impacts are summarized in Draft EIS/EIR Technical Reports 3a (On-Airport Ground Access Report) and 3b (Off-Ground Access Impacts and Mitigation Measures), and in Draft EIS/EIR Sections 4.20 (Construction Impacts) and in Sections 4.3.1.7 (On-Airport Surface Transportation Construction Impacts) and 4.3.2.7 (Off-Airport Surface Transportation Construction Impacts). Further, additional detail on construction impacts is provided in the Supplement to the Draft EIS/EIR. The reader is encouraged to review each of these documents for a complete understanding of the construction-related traffic impacts of the project.

The Draft EIS/EIR is a program-level document intended to analyze the impacts of the Master Plan. It is acknowledged that further documentation may be required to address certain environmental issues in a more specific manner, as necessary and appropriate. This may include a more refined construction analysis.

Subtopical Response TR-ST-3.1: Objectives of Plan

The streets on the west side of Los Angeles, including those near LAX, are often congested today. Natural traffic growth will likely cause a further increase in congestion on many of those streets. Construction of a major capital development project such as the LAX master plan must be carefully planned and managed, in order to ensure that construction activity does not unnecessarily exacerbate congestion on the surrounding streets. Further, cumulative impacts from the simultaneous construction of portions of the Playa Vista project north of LAX and other smaller construction projects in the region must be considered. The construction plan identified in the Draft EIS/EIR accounts for these issues.

The construction plan incorporates the following objectives for the management of LAX construction traffic and for public traffic through construction areas:

- Construction deliveries would be virtually eliminated during peak traffic periods.
- Construction traffic during all other times would be managed.
- Construction employee traffic would be minimized through the use of remote parking locations and establishing start/quit times different than the traffic peak periods.
- Traffic patterns around the airport for the general public would be largely maintained, and managed through the use of informational signage, traffic signal modifications, construction haul routes and other techniques.

Subtopical Response TR-ST-3.1.1: Generation of Construction-Related Trips

The analysis concentrated on the period of the worst construction traffic conditions. It was determined that for Alternative D, the period for which the most construction traffic would be generated would be the 4th quarter of 2007 and the full year 2008.

Subtopical Response TR-ST-3.1.2: Worker Trips

The labor force employees for each shift were assigned as vehicle trips on the roadway system and as associated person trips on the construction labor shuttle buses, according to normal work commute times for each work shift. Trips accessing the site for the first shift would travel between 6:00 and 7:00 a.m., with corresponding egressing trips between 3:30 and 4:30 p.m. Similarly the second shift trips would access the staging areas between 2:30 and 3:30 p.m. and egress between midnight and 1:00 a.m. Finally the third shift trips would access between 11:00 p.m. and midnight and egress between 7:00 and 8:00 a.m.

The assumed private auto vehicle-occupancy for the Craft Labor Force work trips is 1.55 occupants per vehicle for the home-to-work commute. The average vehicle occupancy of 1.55 occupants per vehicle accounts for the carpooling vehicles of the labor force.

Subtopical Response TR-ST-3.1.3: Construction Truck Trips

Truck trips for transporting materials within and in and out of the site were assumed to be round trips. The truck trips for each activity were divided into offsite truck trips and onsite truck trips. Offsite truck trips and onsite truck trips for each activity were loaded into the conceptual construction schedule.

Offsite truck trips are the trips that deliver materials both from out-of-region and in-region suppliers to the construction site. The out-of-region truck trips represent those with materials delivered directly to the site with no distributor or warehousing. The in-region truck trips represent delivery of materials from a distributor or warehouse to the site. Onsite truck trips were also determined, which are the trips that occur entirely within the site. These trips are primarily from staging areas to project sites and vice-versa.

The hourly construction employee and offsite truck trips expected to be generated during the peak construction period are shown in Table 1. The truck trip schedule in Table 1 represents a worst-case scenario with respect to the airport peak-period of 11 AM to Noon. Some of the truck trips shown during these hours may occur during other times, while continuing to avoid the a.m. and p.m. peak periods.

Table 1

Summary of 2008 Airport Construction Trip Generation

	Hourly Vehicle Trips (Passenger Car Equivalents)					Peaking Factors		
Hour	Emp In[1]	Emp Out	Trucks In	Trucks Out	Total Constr.	Emp	Trucks	Total
12:00-01:00	0	342	25	25	392	5.7%	0.9%	3.5%
01:00-02:00	0	0	25	25	50	0.0%	0.9%	0.4%
02:00-03:00	0	0	25	25	50	0.0%	0.9%	0.4%
03:00-04:00	0	0	25	25	50	0.0%	0.9%	0.4%
04:00-05:00	0	0	25	25	50	0.0%	0.9%	0.4%
05:00-06:00	0	0	25	25	50	0.0%	0.9%	0.4%
06:00-07:00	2,449	0	15	15	2,479	41.2%	0.6%	22.0%
07:00-08:00	0	185	0	0	185	3.1%	0.0%	1.6%
08:00-09:00	0	0	0	0	0	0.0%	0.0%	0.0%
09:00-10:00	0	0	0	0	0	0.0%	0.0%	0.0%
10:00-11:00	0	0	0	0	0	0.0%	0.0%	0.0%
11:00-12:00	0	0	488	488	975	0.0%	18.3%	8.7%
12:00-13:00	0	0	488	488	975	0.0%	18.3%	8.7%
13:00-14:00	0	0	488	488	975	0.0%	18.3%	8.7%
14:00-15:00	171	0	488	488	1,146	2.9%	18.3%	10.2%
15:00-16:00	171	1,225	240	240	1,876	23.5%	9.0%	16.6%
16:00-17:00	0	1,225	0	0	1,225	20.6%	0.0%	10.9%
17:00-18:00	0	0	0	0	0	0.0%	0.0%	0.0%
18:00-19:00	0	0	0	0	0	0.0%	0.0%	0.0%
19:00-20:00	0	0	63	63	125	0.0%	2.3%	1.1%
20:00-21:00	0	0	63	63	125	0.0%	2.3%	1.1%
21:00-22:00	0	0	60	60	120	0.0%	2.3%	1.1%
22:00-23:00	0	0	60	60	120	0.0%	2.3%	1.1%
23:00-24:00	185	0	60	60	305	3.1%	2.3%	2.7%
Total Daily	**2,976**	**2,977**	**2,663**	**2,663**	**11,273**	**100.1 %**	**99.7%**	**100.0%**

[1] EMP = Employee

Source: Parsons Transportation Group (PTG), 2002; Technical Report S-2b, Table S20, page 55.

It was assumed that worker commute trips would arrive from within the Los Angeles region via the I-405 from the north and south and I-105 and the Green Line from the east. The destination of these commute trips is assumed to be at either the respective staging areas or alternate parking locations, arranged for by individual contractors, in the vicinity of the airport. Workers could then be shuttled to the work site at the beginning of the shift and back to the staging area or alternate parking locations at the end of the shift. All of these trips were accounted for in the analysis of both traffic and air quality.

It is anticipated that a portion of the employees would use transit rather than drive, while others would car-pool. For those vehicles remaining, it is expected that the employees during the first and second shifts would not be on the street system at the same time (that is, the second shift employees would arrive prior to the first shift employees departing). However, those employees that would be parking would do so simultaneously. Master Plan Commitment ST-13 would require a series of employee parking areas along the east end of the airport and other similar locations, with shuttle bus service to and from the sites. Remote parking locations such as at LAWA airports in Palmdale, Van Nuys, and Ontario would also accommodate employee parking via shuttle bus. Because of this large dispersion of parkers to many different parking sites, the largest construction employee parking lot is expected to accommodate approximately 800 to 900 spaces (compared with the capacity of LAX's existing Employee Lot C which has a capacity of almost 3,600 spaces). This parking requirement is expected to be able to be fully accommodated by the plan.

Subtopical Response TR-ST-3.2: On-Airport Plan Components

It is the intent of the construction plan to maintain as normal traffic flow as possible within the CTA during construction. While it will not be possible to eliminate all effects of construction traffic in the CTA, the following commitments are made to minimize any effects. (The particular alternative that the commitment pertains to is shown in parentheses.)

- ST-2. Non-Peak CTA Deliveries (Alternatives A, B, C, and D).

  Deliveries to the CTA terminal reconstruction projects will be limited to non-peak traffic hours whenever possible.

- ST-3. Construction Traffic Uses Upper Level (Alternatives A, B, and C).

  All construction traffic required to travel through the CTA will use the upper level roadways, since they are typically less congested than lower level roads. Four curb areas will be designated for construction deliveries. Each curb area will be a minimum length of one hundred feet, to allow terminal access for construction vehicles. Two of the curb areas will be located on World Way North and the remaining two shall be located on World Way South. One of the curb areas will be in close proximity to Tom Bradley International Terminal (TBIT).

- ST-6. Removal of Spoil Material (Alternatives A, B, and C).

  The spoil material that is removed from the APM and Commercial Vehicle Road (CVR) tunneling projects in the CTA vicinity will be stockpiled and subsequently removed from a point west of the CTA to minimize interruptions in the CTA curb operations.

- ST-11. Stockpile Locations (Alternatives A, B, and C).

  Stockpile locations will be confined to the eastern area of the airport vicinity. Multiple stockpile locations will be provided.

- ST-13. Construction Employee Parking Locations (Alternatives A, B, and C).

  Employee parking will be provided along the east end of the airport, to the extent possible. Shuttle buses will transport employees to construction sites. In addition, remote parking locations (1 to 50 miles away) will be established for construction employees with shuttle service to the airport. An emergency return system will be established for employees that must to leave early.

- ST-14. Construction Employee Shift Hours (Alternatives A, B, C, and D).

  Shift hours that do not coincide with the heaviest commuter traffic periods (7:00 a.m. to 9:00 a.m., 4:30 p.m. to 6:30 p.m.) will be established. Work periods will be extended to include weekends and multiple work shifts, to the extent possible and necessary.

- ST-20. Stockpile Locations (Alternative D).

  Stockpile locations will be confined to the eastern area of the airport vicinity, to the extent possible. After the eastern facilities are under construction in Alternative D, stockpile locations will be selected that are as close to I-405 and I-105 as possible, and can be accessed by construction vehicles with minimal disruption to adjacent streets. Multiple stockpile locations will be provided.

- ST-21. Construction Employee Parking Locations (Alternative D).

  During construction of the eastern facilities, employee parking locations will be selected that are as close to the I-405 and I-105 as possible and can be accessed by employee vehicles with minimal disruption to adjacent streets. Shuttle buses will transport employees to construction sites. In addition, remote parking locations (1 to 50 miles away) will be established for construction employees with shuttle service to the airport. An emergency return system will be established for employees that must to leave unexpectedly.

Subtopical Response TR-ST-3.3: Threshold of Significance

The threshold of significance for construction traffic impacts is that the project generates sufficient construction-related traffic to disrupt normal background (i.e., non-construction) traffic operations. This would include detours that would take longer to traverse than the normal operating routes, delays in traffic flow due to construction trucks entering and exiting the arterial roads, etc. It is acknowledged that the combined activity from truck trips and employee work trips would disrupt normal traffic patterns in the vicinity of LAX during various periods of construction. These impacts to the surrounding street system will be temporary and unavoidable.

Subtopical Response TR-ST-3.4: Peak Hour and Off-Peak Impacts

A key component of the traffic plan is to ensure that construction traffic does not compound the traffic congestion on any road segment during the commuter peak hours of 8:00 a.m. to 9:00 a.m. and from 5:00

p.m. to 6:00 p.m. LAWA would enforce this restriction through contractual obligations with the various contractors. However, as summarized in the Supplement to the Draft EIS/EIR, it is also important to ensure that construction traffic would not cause a large enough increase in traffic during an otherwise off-peak hour to cause a new peak hour due to construction traffic. The analysis demonstrated that the typical peak hours do capture the hours with the greatest total traffic levels (construction, passenger-related, and non-airport) and resulting project impacts, except on Century Boulevard from Sepulveda Boulevard to Aviation Boulevard. On that road segment, the high percentage of airport-related traffic combined with construction traffic would create a different peak traffic hour. This road segment would have a significant and temporarily unavoidable impact. On all other roads and intersections, it was concluded that the surface transportation project impacts identified for the three primary peak hours address the worst-case impacts, even when considering construction traffic. As a result, the mitigation measures identified in Section 4.3.2.8, Mitigation Measures, of the Supplement to the Draft EIS/EIR, adequately mitigate all project impacts, including construction impacts.

Subtopical Response TR-ST-3.5: Regional Impacts

Outside of the specific airport vicinity, it is anticipated that trucks and employees would be highly dispersed throughout the Los Angeles region. Although there may be a concentration of activity to and from the area around the Ports of Los Angeles and Long Beach, the activity is generally expected to be dispersed throughout the region. Further, the commitments and mitigation measures discussed previously are expected to minimize or eliminate impacts during the worst traffic periods of the day. That is, no deliveries or pick-ups would be allowed between the periods of 7:00 to 9:00 a.m. and 4:30 to 6:30 p.m. These two-hour periods would help ensure that not only would truck traffic not be generated around LAX during the commuter peak hours of 8:00 to 9:00 a.m. and 5:00 p.m. to 6:00 p.m., but that truck traffic would not spill over into those peak hours in the outlying areas. As a result, it is not anticipated that any specific route or highway would be burdened with a disproportionate amount of truck or employee traffic.

Subtopical Response TR-ST-3.6: Playa Vista Coordination

The Playa Vista development, approximately two miles north of LAX, would be under construction during some periods of master plan construction. It is likely that construction vehicles associated with that development would use some of the same haul routes at the same time as master plan construction vehicles (e.g., Sepulveda Boulevard and I-405). The construction plans for both of these projects would be closely coordinated to ensure that their combined impacts are minimized on these streets, particularly during the streets' peak hours. To aid in this regard, the master plan's traffic coordination office, to be established as part of Master Plan Commitment C-1, would encourage construction managers from the Playa Vista development to participate. Even so, it is expected that the cumulative impacts of these developments would result in occasional impacts that would be significant and unavoidable. These cumulative impacts are not expected to exist during every quarter of the project. However, they may periodically occur throughout the length of the Playa Vista and Master Plan projects.

Subtopical Response TR-ST-3.7: Phasing Schedule

The construction plans for Alternatives A, B, and C as documented in the Draft EIS/EIR were originally assumed to begin sooner than is now possible. However, the construction plan was updated for analysis of the Enhanced Safety and Security Alternative, Alternative D. That updated construction plan is included in the Supplement to the Draft EIS/EIR. It is anticipated that the general procedures and approach to the plan identified for Alternative D could also be applied to Alternatives A, B, and C, should any of those alternatives be chosen. However, the phasing discussed below specifically applies to Alternative D.

The construction is assumed to start in the 4th quarter of 2004, with completion by the end of 2014, which represents a duration of more than 10 years. The construction is divided into three major phases.

Subtopical Response TR-ST-3.7.1: Phase I

Phase I construction would start with the implementation of Runway 25L and center taxiway project in the south airfield, and construction of parking facilities in the area generally east of Sepulveda Boulevard and north of Imperial Highway. The construction of the parking facilities would allow demolition of existing parking structures in the central terminal area (CTA) and start construction of the CTA landside terminal in 2006 for completion in 2008.

The construction of automated people movers (APM) from the CTA to the Intermodal Transportation Center (ITC), the Ground Transportation Center (GTC) and the consolidated rental car facility (RAC) would occur in parallel with CTA improvements. The construction of the APM would start about one calendar quarter prior to the construction start for the CTA landside terminal, followed by the start of construction for GTC and RAC. The construction of these facilities would end in 2009 with the completion of the RAC, including Lot C surface parking. The roadways and Century bridge project to connect the GTC to the ITC is scheduled for substantial completion prior to the start of construction for GTC to provide additional access from the I-105 to the GTC project area. The offsite utilities and roadway improvements work is scheduled to begin in 2005, so that the needed utilities and roadways are completed prior to the completion of CTA Landside Terminal, APM, GTC and RAC. In general, the construction of utilities will precede the construction of roadways. Four major projects including the CTA landside terminal, APM, GTC and RAC, and the related utility and road infrastructure are scheduled over a 36-month period during the first five years of construction. This construction duration is aggressive considering the amount of work involved and the potential site constraints.

Construction of the baggage tunnel from the GTC to the CTA is scheduled to start in parallel with the offsite utilities. The installation of the baggage equipment would be completed along with the completion of the GTC and the CTA landside terminal.

Subtopical Response TR-ST-3.7.2: Phase II

Phase II would involve construction in the midfield/satellite concourse area, which includes demolition of existing hangar facilities in the midfield areas. Phase II would start with the construction of a replacement hangar in 2007. The construction for Phase II would occur through to the end of 2011. In addition to satellite concourse and related passenger and baggage handling facilities, Phase II would involve construction of many support infrastructure projects such as Aircraft Rescue and Firefighting, police facility, and ground run-up enclosure. These projects provide greater scheduling flexibility because of fewer interfacing requirements to the other operating facilities.

Subtopical Response TR-ST-3.7.3: Phase III

Phase III would include north airfield ancillary facilities, including a police station and medical building and a reconfigured fuel farm, which are scheduled to start construction in 2010. The modifications to the existing Tom Bradley International Terminal (TBIT) would start in parallel with the ancillary facilities, with the construction of north and south CTA projects lagging TBIT by about a year. The TBIT and the CTA projects would be completed in 2014 with the completion of the north CTA projects. The construction on runway 24L and the south parallel taxiway would start in 2012 and their completion would conclude the Phase III construction by the end of 2014, with one (1) year to fine tune and optimize the operation by the end of 2015, which is the scheduled completion date for Alternative D.

The analysis of construction impacts assumed the above schedule. Therefore the impacts identified in the Supplement to the Draft EIS/EIR are realistic impacts, and are based on an aggressive and realistic construction phasing plan. For further information regarding the phasing schedule, see Chapter 3 of the Supplement to the Draft EIS/EIR, at pages 3-48 through 3-54.

Subtopical Response TR-ST-3.8: Staging Areas

The potential staging areas have been identified in the vicinity of project sites to reduce travel distances and stay away from the residential areas and airfield safety zones. Whenever practicable, the project construction would be staged to use a portion of the construction sites as a staging area. The following six staging areas would potentially be available for the entire 11-year construction duration.

- Staging Area 1: West of Sepulveda Westway and north of Westchester Parkway
- Staging Area 2: South of Westchester Parkway and east of Pershing Drive
- Staging Area 3: In the Midfield area, east of the proposed employee parking and north of the replacement hangers
- Staging Area 4: West end of the south runways, north of Imperial Highway and east of Pershing Drive
- Staging Area 5: West end of the south runways, east of staging area 4
- Staging Area 6: East of the Consolidated Rental Car area

Also, the GTC project site may be used as a staging area until 2007, which is when the GTC project construction is scheduled to start (Staging Area 7). Other pockets of spaces may be available on project sites such as the GTC, RAC and CTA Landside Terminal that cannot be identified at this stage of facility development. The location of the potential staging areas is depicted in Figure S4.20-1 of the Supplement to the Draft EIS/EIR.

There are also numerous existing surface parking lots in the vicinity of Arbor Vitae Street, Airport Boulevard and Aviation Boulevard that are considered as potential short-term and temporary staging areas, especially after the west employee parking, Intermodal Transportation Center (ITC) parking and southeast surface parking have been completed prior to start of construction for the major projects such as GTC, CTA Landside, and APM.

The asphalt and concrete batch plants would likely be set up in one of the first five of the six staging areas available for the total program duration. Other considerations would include access to construction sites, interference with the airport access routes and environmental factors.

Subtopical Response TR-ST-3.9: Road Closure and Detour Plan

A specific haul route, road closure, and detour plan would be developed prior to each project that would designate specific routes, variable message sign locations, and communication methods with airport passengers, truck drivers, etc. The detour/haul route plans would be planned to avoid residential streets and would conform to the restrictions specified in Section 4.20, Construction Impacts, of the Draft EIS/EIR. Many of the restrictions are made as commitments in the Master Plan. The commitments related to detour and haul routes are:

- ST-4. Limited Short-Term Lane Closures (Alternatives A, B, and C).

  When construction of any new ramps at the Century Boulevard/Sepulveda Boulevard interchange or the APM elevated structures requires short-term lane closures, the lane closures will be limited to twelve consecutive hours at a time and shall be scheduled for the non-summer and non-holiday periods whenever possible.

- ST-8. Limited Short-Term Lane Closures (Alternative D).

  When construction of any new ramps at the Century Boulevard/Sepulveda Boulevard interchange or construction for the GTC, ITC, or APM elevated structures require short-term lane closures, the lane closures will be for as brief a period as practical, with the goal that closures would last for no more than twelve consecutive hours at a time and would principally be scheduled for non-peak periods.

- ST-9. Construction Deliveries (Alternatives A, B, C and D).

  Construction deliveries requiring lane closures shall receive prior approval from the Construction Coordination Office. Notification of deliveries shall be made with sufficient time to allow modifications to approved traffic detour plans.

- ST-10. Designated Truck Routes (Alternatives A, B, and C).

  For dirt and aggregate and all other materials and equipment, truck deliveries will be on designated routes only (freeways and non-residential streets). Every effort will be made for routes to avoid residential frontages. The potential designated routes are identified in Section 4.3.2, Off-Airport Surface Transportation (subsection 4.3.2.5) of the Draft EIS/EIR.

- ST-12. Designated Truck Delivery Hours (Alternatives A, B, C, and D).

  Truck deliveries shall be encouraged to use night-time hours and shall avoid the peak periods of 7:00 a.m. to 9:00 a.m. and 4:30 p.m. to 6:30 p.m.

- ST-15. Separation of Construction Traffic (Alternatives A, B, and C).

  Construction traffic will be separated from regular airport traffic by various means, including keeping in service as haul routes any existing roads that would be replaced and any detour routes (where appropriate), even after the parallel new roadway is open to traffic.

- ST-16. Designated Haul Routes (Alternatives A, B, C, and D).

  Every effort will be made to ensure that haul routes are located away from sensitive noise receptors.

- ST-17. Maintenance of Haul Routes (Alternatives A, B, C, and D).

Haul routes will be maintained periodically and will comply with City of Los Angeles or other appropriate jurisdictional requirements for maintenance. Minor striping, lane configurations, and signal phasing modifications will be provided as needed.

- ST-18. Traffic Plan During Construction (Alternatives A, B, C and D).

  A complete construction traffic plan will be developed to designate detour and/or haul routes, variable message and other sign locations, communication methods with airport passengers, construction deliveries, etc.

- ST-19. Closure Restrictions of Existing Roadways (Alternatives A, B, C, and D).

  Other than short time periods during nighttime construction, existing roadways will remain open until they are no longer needed for regular traffic or construction traffic, unless a temporary detour route is available to serve the same function. This will recognize that there are three functions taking place concurrently: (1) airport traffic, (2) construction haul routes, and (3) construction of new facilities.

- ST-22. Designated Truck Routes (Alternative D).

  For dirt and aggregate and all other materials and equipment, truck deliveries will be on designated routes only (freeways and non-residential streets). Every effort will be made for routes to avoid residential frontages. The designated routes on City of Los Angeles streets are subject to approval by LADOT's Bureau of Traffic Management and may include, but will not necessarily be limited to the following routes:

  - Florence Avenue (Aviation Boulevard to I-405)
  - Manchester Avenue (Aviation Boulevard to I-405)
  - Aviation Boulevard (Manchester Avenue to Imperial Highway)
  - Westchester Parkway/Arbor Vitae Street (Pershing Drive to I-405)
  - Century Boulevard (Sepulveda Boulevard to I-405)
  - Imperial Highway (Pershing Drive to I-405)
  - La Cienega Boulevard (north of Imperial Highway)
  - Airport Boulevard (Arbor Vitae Street to Century Boulevard)
  - Sepulveda Boulevard (Westchester Parkway to Imperial Highway)
  - I-405
  - I-105

The plan is designed to spread the activity among various work sites, so that no one site attracts a disproportionate amount of the activity at any time. While there may be times when one work site is more active than others, the Master Plan's Ground Transportation/Construction Coordination Office, established as part of Master Plan Commitment C-1, would ensure that construction traffic around that site is properly managed to minimize disruption to adjacent surface streets. Although these measures are not expected to mitigate all of the impacts of construction traffic, they are designed to limit the impact during the worst periods of traffic congestion, and to carefully manage those times and places that are impacted.

Alternative D includes the construction of an elevated Automated People Mover (APM) connecting the ITC, GTC, and RAC to the CTA. The construction of the APM system would require partial lane closures at locations where the system crosses over or runs parallel to the existing arterial roadways. These locations are identified along 98th Street, Century Boulevard and Aviation Boulevard, and crossings over Sepulveda Boulevard, Airport Boulevard, Aviation Boulevard and Century Boulevard. Alternative D also includes construction of an underground baggage tunnel system along 98th Street - connecting the GTC to the CTA. The construction of the baggage tunnel system would require closures along 98th Street from Airport Boulevard to Aviation Boulevard.

The critical issues relating to these projects involve maintaining the traffic in the immediate construction zone, and handling of the additional traffic related to transportation of construction materials and crew. A summary of the road closure plan is shown in Table 3, Alternative D Road and Lane Closure Plan, although, as mentioned earlier, a complete detour and closure plan would be developed by the contractor for each construction site to address scheduled closures and designated detour routes in accordance with

the construction program policies and the construction contract requirements. Conceptual level road closure and detour plans have been evaluated and are discussed below.

98th Street

On 98th Street between Airport Boulevard and Aviation Boulevard, the construction of the baggage tunnel and construction of the foundations and structure of the APM system would require street closures for 9 months. A detour to 96th Street would be provided during this time. Partial westbound lane closures between Airport Boulevard and Sepulveda Boulevard would be required for 6 months for construction of the baggage tunnel and 12 months for the APM. During these lane closures, traffic may be routed to 96th Street.

Table 3

Alternative D: Road and Lane Closure Plan

Affected Road	Closure[1]	Closure Location	Closure Duration (Months)	Project
98th Street	LC	Airport Blvd. to Sepulveda Blvd.	6	Baggage Tunnels
	RC	Airport Blvd. to Aviation Blvd.	9	Baggage Tunnels/APM - CTA/RAC/ITC
	LC	Airport Blvd. to Sepulveda Blvd.	12	APM - CTA/RAC/ITC Loop
Century Blvd.	LC	Century Blvd. E/O Aviation Blvd.	15	GTC-ITC Bridge over Century; Lane addition
	LC	Sepulveda Blvd. to Aviation Blvd.	9	APM - CTA/GTC Loop
Avion Drive	RC	Airport Blvd. to Aviation Blvd.	9	APM - CTA/GTC Loop
Aviation Blvd.	LC	Arbor Vitae Street to Imperial Hwy	12	Lane addition & connector to GTC
Imperial Hwy	LC	Imperial Hwy at Aviation Blvd.	3	Pedestrian Bridge to ITC
	LC	Imperial Hwy north of Aviation Blvd.	3	ITC to I-105 Aerial Ramp
Arbor Vitae Street	LC	Aviation Blvd. to La Cienega Blvd.	9	Lane addition and Access to the Commercial Vehicle Holding Area in the GTC
La Cienega Blvd.	LC	Arbor Vitae Street to Imperial Hwy	12	Lane addition & connector to GTC
Existing Airport Departure & Arrival Loops	LC	Existing airport arrival and departure loops	9	Demo CTA Parking Structures
	LC		30	CTA Terminals & APM Circulator
	LC		12	Tunnels CTA to Satellite Concourse
	LC		24	TBIT Rework
	LC		24	North & South CTA Concourses
Center Airport Exit and Return Road	RC	Center Airport Exit and Return Road	9	Demo of CTA Parking Structures.
	RC		30	Construct CTA Terminals, APM, and APM Stations

[1] RC - Road Closure; LC - Lane Closure

Source: MARRS Services, Inc. and URS Corp., 2003.

Century Boulevard

Partial eastbound lane closures are anticipated on Century Boulevard for the construction of the APM System (CTA - GTC Loop) for a period of about nine months during construction. In addition, Century Boulevard eastbound and westbound lanes east of Aviation Boulevard would be impacted by the construction of the GTC aerial roadway bridge over Century Boulevard and by the connector lanes from eastbound Century Boulevard to the aerial roadways. This would require partial lane closures for approximately 15 months. Also, the Century Cargo Access improvements are scheduled for construction during this period and would require partial eastbound lane closures. The traffic to and from the airport may be encouraged to use southbound Sepulveda Boulevard for access to the I-105 Freeway and Imperial Highway, and to northbound Sepulveda Boulevard to La Tijera Boulevard for access to the I-405 Freeway. These routes may stay in effect for over two years.

Avion Drive

Depending on the final alignment of the APM loop, it is possible that portions of Avion Drive could be closed for 9 months. Businesses along Avion Drive would be provided access at all times unless prior arrangements had been made. Since this street is within airport property, this closure will not significantly effect non-airport traffic.

Aviation Boulevard

The project includes the addition of one northbound lane and one southbound lane to Aviation Boulevard from Imperial Highway to Arbor Vitae Street. This would require the closure of one lane during the construction periods of the respective sections. Through traffic may be rerouted to La Cienega Boulevard between Arbor Vitae Street and Imperial Highway. During this period, the northbound connector from Aviation Boulevard to the GTC/ITC aerial roadways would also be constructed.

Imperial Highway

The construction of the pedestrian bridge over Imperial Highway to the Intermodal Transportation Center (ITC) would require partial lane closures on Imperial Highway for a 3-month period. Also, construction of the aerial connector from the I-105 Freeway to the ITC roadways would require partial lane closures.

Arbor Vitae Street

The project includes the addition of one eastbound and one westbound lane from Aviation Boulevard to La Cienega Boulevard. This would require the closure of one eastbound lane during the construction period. This project also includes the improvements for access from Arbor Vitae Street to the Commercial Vehicle Holding Area at the Ground Transportation Center (GTC). The duration of the lane closure would remain in effect for the duration of construction. During this period, through traffic may be diverted to Century Boulevard or Manchester Avenue.

La Cienega Boulevard

The project includes the addition of one northbound lane from 111th Street to Arbor Vitae Street and one southbound lane from Arbor Vitae Street to 104th Street. This would require the closure of one lane during the construction periods of the respective sections. The lane closures would remain in effect for the 12-month duration of construction. During this period, through traffic may be diverted to Aviation Boulevard.

Airport Departure & Arrival Loops

Alternative D requires substantial demolition and construction activities for the various airport projects in the immediate vicinity of the airport departure and arrival loops. It is possible that lane closures would be in effect in different locations along these loops during the construction period. Such lane closures could be in effect for a period of about 51 months during the Phase I construction and for a period of about 38 months during Phase III construction.

Center Airport Exit and Return Road

The center airport exit and return road between the existing parking structures may be impacted during the demolition and construction activities of the CTA new terminals and during the construction of the APM loops and stations serving the new terminals. The easterly and westerly sections of this road may be closed with controlled intersections at the locations where the center road intersects with the ground

level airport return loops. This closure may be in full effect for 39 months for the demolition of CTA Parking Structure and construction of CTA landside terminal, and the airport exit and return public traffic may be restricted to the airport departure and arrival loops.

Subtopical Response TR-ST-3.10: Environmental Consequences

The CTA is expected to operate less than optimally in 2008, partly due to the influx of construction traffic. To mitigate these impacts, the following mitigation measures are proposed:

- MM-ST-1. Require CTA Construction Vehicles to Use Designated Lanes (Alternative D).

  Whenever feasible, construction vehicles shall be restricted to designated roadways or lanes of traffic on CTA roadways adjacent to the existing close-in parking, thus limiting the mix of construction vehicles and airport traffic.

- MM-ST-2. Modify CTA Signage (Alternative D).

  During construction, additional signage shall be installed to separate construction traffic from non-construction traffic to the extent feasible.

- MM-ST-3. Develop Designated Shuttle Stops for Labor Buses and ITC-CTA Buses (Alternative D).

  Develop shuttle stops for labor buses (i.e., buses carrying construction workers) and the ITC-CTA shuttle buses at the CTA arrivals level. All ITC-CTA shuttle buses will be routed to these lower level (arrivals) areas. These buses will not circulate through the upper level (departures) curbfront.

Even so, these measures would not be sufficient to fully mitigate the CTA conditions, and the CTA would operate with significant and temporarily unavoidable impacts.

On off-airport roads and intersections, the Year 2008 surface transportation analysis fully incorporated construction vehicles. That analysis showed that all facilities would be mitigated except at six intersections.

TR-ST-4: Airport Area Surface Traffic Concerns

Introduction

Numerous comments were received expressing concerns over the impact of increased traffic on airport area roadways. This topical response provides a discussion of these concerns that can be used as a reference in the responses to the individual comments.

Discussion

Subtopical Response TR-ST-4.1: Increases in Traffic in an Already Congested Area

Within the series of comments addressing airport area surface traffic, the most frequently raised concern is that the roadways around LAX are already congested, and that any increases in automobile and truck traffic would make the situation worse. The comments suggest that congestion can affect travel time, safety (to vehicle travelers and pedestrians), air quality, noise, and the community's quality of life. The implication of these comments, whether stated or tacit, is that any increase in traffic would cause an unacceptable impact.

Los Angeles World Airports, the Los Angeles Department of Transportation, and the other organizations involved in preparing the Draft EIS/EIR agree that much of the area around LAX experiences high levels of traffic congestion today, and that the level of congestion would get worse in the future for many area roadways. The result of the added congestion would be longer travel times for the vast majority of people who travel in the area. This affects the people who live and work in the area, as well as the people who wish to travel through the area. It also affects everyone who travels to or from LAX, whether to make an airline trip, work, or move cargo.

The airport, therefore, faces the very same problems and concerns that the surrounding communities face in regard to traffic congestion. Recognition of these concerns is expressed in the Principles for Ground Access that were established early in the analysis:

- Maximize use of the regional transportation system
- Explore opportunities to connect to regional transit systems
- Minimize impacts to local streets
- Protect Neighborhoods

Subtopical Response TR-ST-4.2: Historical Perspective

The Airport's approach to mitigating traffic congestion in the area starts with its actions over the last fifteen to twenty years. LAWA has taken many actions to reduce community impacts, including the purchase of many homes and relocation of affected families to mitigate noise impacts, and a commitment to provide a buffer area between LAX and communities to the north in what had previously been a residential neighborhood. This buffer area was designated LAX Northside, and is called Westchester Southside in Alternatives A, B, and C.

Details of LAWA's approach to LAX Northside/Westchester Southside are provided in the Topical Response TR-ST-7 regarding Westchester Southside traffic. In summary, LAWA has been helping to reduce traffic congestion in the area through the following actions:

- Building all of the transportation improvements required for LAX Northside immediately after receiving project approval
- Delaying actual development of LAX Northside for over fifteen years

These actions have increased roadway capacity in the area, and also substantially reduced growth in the area.

Subtopical Response TR-ST-4.3: Opportunities for Future Airport Contributions to Transportation Improvements

Even with these actions, however, traffic congestion has continued to grow in the area. Some of this increase is due to the fact that the region's population and economy continue to grow. Population and economic growth bring with them increased demand for air travel, which has resulted in rapid growth in demand for LAX. This increased airport demand has contributed in part to the increase in traffic congestion in the area. The actions cited above have helped to reduce the growth of congestion and have mitigated (in whole or in part) impacts due to growth in airport demand.

Despite the fact that traffic congestion is continuing to grow, LAWA is currently precluded by law from funding any further action to fund off-site improvements to reduce traffic congestion (other than to pay Coastal Transportation Corridor Specific Plan fees once LAX Northside is actually developed). This is because of a federal law prohibiting the use of airport revenues for purposes not directly related to the airport. All off-airport transportation improvements that meet this direct-relationship test (except for the fees noted above) have already been implemented. The EIS/EIR process offers a unique opportunity to establish a direct relationship between airport operations and off-airport traffic congestion. Through this process, the necessary link can be established to enable LAWA to contribute further to off-airport transportation improvements.

Subtopical Response TR-ST-4.4: Benefits to be Derived From Allowing LAWA to Contribute to Off-Airport Transportation Improvements

If the LAX Master Plan is not approved, LAWA would be prohibited from contributing to any off-airport improvements. But traffic congestion would continue to grow. This scenario is described in the Topical Response TR-ST-2 regarding the surface transportation analysis methodology, Subtopical Response TR-ST-2.15.3.

If, on the other hand, the LAX Master Plan is approved, LAWA would be allowed to invest in transportation improvements that would substantially benefit the entire area. These improvements may include:

- A new expressway, which would reduce traffic on I-405 by 853 to 2,697 peak hour/peak direction vehicles and reduce traffic on surrounding arterial streets (Alternatives A, B, and C);
- Improved connections to the Metro Green Line, including a possible rail line extension and an airport terminal station (Alternatives A, B, and C);

- Improvements to many individual intersections and road sections, substantially improving levels of service and reducing travel times (Alternatives A, B, C and D);
- New direct links to I-405 and I-105 (Alternative D); and
- Neighborhood traffic mitigation programs designed to address specific concerns of affected communities.

These improvements would benefit not only by travelers to and from the airport, but also by everyone who travels in the area.

Subtopical Response TR-ST-4.5: Impacts to Neighborhoods

Some comments were received stating that neighborhoods surrounding LAX would experience increased traffic due to incursion of traffic from the overcrowded freeways and major highways. This is an issue of such critical importance that LAWA and LADOT have developed a specific program to address it. A summary of this program is provided in Topical Response TR-ST-2 regarding the surface transportation analysis methodology, Subtopical Response TR-ST-2.21.

Subtopical Response TR-ST-4.6: Impacts to I-405

Some comments were received stating that the I-405 Freeway's impacts and mitigation were not sufficiently addressed. Freeway impacts are addressed in Section 4.3.2.6.2 of the Draft EIS/EIR and in Section 4.3.2.1.6.2 of the Supplement to the Draft EIS/EIR. Freeway impacts are addressed in greater detail in Technical Reports 3b (for Alternatives A, B, and C) and S-2b (Alternative D), Sections 4.1, 4.2, and 6.2.

Alternatives A, B, and C

The primary action proposed for Alternatives A, B, and C to improve traffic on I-405 is to build the LAX Expressway. This facility is not identified as a mitigation measure because it has been included in the definition of the project itself. As stated in the Draft EIS/EIR, Technical Report 3b, and as summarized in Topical Response TR-ST-2 regarding the surface transportation analysis methodology, the addition of the new LAX Expressway would produce a benefit to I-405. Compared to the No Action/No Project alternative, as shown in Section 1.3 above, peak hour/peak direction traffic volumes on I-405 would be reduced by up to 2,800 vehicles. Even when compared with the Adjusted Environmental Baseline alternative (which assumes demand at LAX is rolled back to 1996 levels), year 2015 peak hour traffic volumes on I-405 are lower with airport growth and LAWA transportation improvements than without. For example, AM peak hour southbound trips on I-405 north of La Tijera are 790 to 1,770 vehicles lower with the project than in the Adjusted Environmental Baseline.

Because there is additional capacity provided along the LAX Expressway, demand on I-405 north and south of the expressway does go up in the Alternatives A, B, and C, resulting in some additional freeway congestion at these locations. This impact is summarized in Table 4.3.2-7 (page 4-299) and Table 4.3.2-10 (page 4-305) in the Draft EIS/EIR. It is also documented in Attachments A and G of Technical Report 3b.

This is an unavoidable impact that occurs whenever freeway capacity is increased anywhere in the region. The additional freeway capacity attracts trips away from nearby arterial streets as well as from other freeways. The only way to access the added capacity is to use the freeway itself. As a result, there are some increases in demand on the freeway north and south of the improvement. It should be noted that the vast majority of vehicles experiencing this localized increase in congestion are the same vehicles experiencing the reduced congestion due to the capacity increases, resulting in an overall benefit. To insist that the localized increases be completely avoided when adding freeway capacity would mean that there would never be any improvements to any freeway in the region.

The Draft EIS/EIR shows in Table 4.3.2-6 that the overall impacts of the LAX Master Plan development and transportation improvements in Alternatives A, B, and C is a substantial increase in average speeds, as well as a substantial reduction in travel time and freeway miles at LOS F (severe congestion). This indicates that LAWA is doing its part to improve congestion on the regional transportation system.

Alternative D

In Alternative D, the natural tendency of airport motorists would be to stay on I-405 and I-105 all the way to the airport's new Ground Transportation Center (GTC) and Intermodal Transportation Center (ITC), because these facilities are located adjacent to the freeways. This tendency is further encouraged through two strategic mitigation measures. These measures would provide direct, non-stop access between the GTC and ITC to and from I-405 and I-105. One measure is a new I-405 interchange at Lennox Boulevard, and the other is a series of freeway ramps to and from the east on I-105. These measures are designed to keep traffic from off-loading onto parallel arterials streets on their trip to and from LAX, as presented in Technical Report S-2b, Sections 4.1, 4.2, and 6.2

Analysis using the LAX Ground Access Model shows that, under Alternative D, airport trips would stay on the freeways longer and fewer airport trips would use surface streets. However, the reduction in vehicle trips generated by Alternative D compared to the No Action/No Project Alternative would still result in a traffic benefit on most sections of I-405. The average speeds on freeways for Alternative D would be higher than the No Action/No Project Alternative, but slightly lower than the other build alternatives. Freeway lane miles at LOS F would be lower than the No Action/No Project Alternative, and in the same general range as the other project alternatives. Alternative D would have by far the lowest Vehicle Miles Traveled (VMT) of any of the project alternatives (including the No Action/No Project Alternative). The Vehicle Hours Traveled (VHT) for Alternative D would be substantially lower than the No Action/No Project Alternative, and in the same general range as the other project alternatives.

Even with these benefits, however, Alternative D would affect freeway segments. As described in Technical Report S-2b, Section 5, Off-Airport Ground Access Plan, one of the five impacted segments (I-405 north of Venice Boulevard) would be mitigated by the addition of the I-405/Lennox interchange and the I-105 ramps. The remaining impacted freeway segments would be located near Santa Fe Avenue, south of I-110 at Carson Scales, and north of Inglewood Avenue.

Subtopical Response TR-ST-4.7: Mitigating Existing Congestion and Impacts of Regional Growth

Some comments were received stating that the transportation mitigation program is inadequate because it does not mitigate existing congestion problems or because it does not mitigate the impacts of all regional growth. There are several reasons why mitigating existing congestion or future regional growth is inappropriate for the Draft EIS/EIR.

From a legal perspective, LAWA can only invest in off-airport transportation improvements when a direct relationship is established between airport development and traffic growth. This direct relationship cannot be established for existing conditions because there are no with-project and without-project data available for existing conditions. A review of previous studies of LAX traffic impacts has shown that LAWA has gone beyond its transportation mitigation requirements in recent years (see Topical Response TR-ST-7 regarding Westchester Southside traffic). A direct relationship between regional growth (which excludes airport traffic) and LAX development does not exist by definition. Therefore it is not reasonable to expect LAWA to go beyond its recent efforts to mitigate existing traffic congestion or to mitigate the impacts of regional growth unrelated to the airport.

From a NEPA/CEQA perspective, requiring LAWA to mitigate either existing congestion or future regional traffic growth is not consistent with the regulations and procedures established for environmental review and mitigation. NEPA and CEQA guidelines and regulations are designed to determine a direct relationship between project development and traffic impacts, and to mitigate only those impacts that have been attributed to the project.

TR-ST-5: Rail/Transit Plan

Introduction

Many comments were received containing questions regarding various modes of mass transportation, both rail and bus. This topical response provides a detailed discussion of the assumed roles and background assumptions of mass transportation modes in the LAX Master Plan Draft EIS/EIR that can be used as a reference in the responses to many individual comments.

Discussion

Subtopical Response TR-ST-5.1: High Speed Rail Connection

Please see Topical Response TR-RC-3 for a discussion of the potential for High Speed Rail (HSR) to accommodate future LAX demand. Also, see page 1-27 and 1-28 of Chapter 1 of the Draft EIS/EIR for a narrative discussion about rail technology and its role in modifying passenger demand to airports in the Southern California region. As stated in Chapter 1 on page 1-28, "In any case, it is highly speculative to forecast the number of air trips reallocated to high-speed rail trips at this time. The CH-SRA [California High-Speed Rail Authority] system, if implemented, will not be available until at least 2017. If and when it does come on-line, there are many uncertainties that will determine its potential impact on the Los Angeles region airports in general and LAX in particular. Based on the information currently available, it is clear that increased use of rail, which may occur as a result of a potential future high-speed rail system, is not a reasonable alternative to meeting regional air travel demand."

High Speed Rail connections to Los Angeles International Airport are being studied by transportation agencies, but have not reached points in their respective project development work where specific funding has been secured nor implementation phasing has been defined. Two parallel project development efforts are currently underway to bring high-speed mass transportation service to Los Angeles and Southern California. They are as follows:

- California High Speed Rail System - The State of California is pursuing the development of a 700-mile high-speed train system capable of speeds in excess of 200 miles per hour on dedicated, fully-grade separated tracks with state-of-the-art safety, signaling and automated train control systems. The system would serve the major metropolitan centers of California in 2020 and beyond.
- Intra-Regional (Southern California) Maglev System - The Southern California Association of Governments (SCAG) has identified a 243-mile system of high-speed Magnetically Levitated (Maglev) train alignments to serve Los Angeles, Orange, Riverside, and San Bernardino Counties. The six-line system, which would connect Los Angeles International Airport to the rest of the region, is included in the 1998 and 2001 Regional Transportation Plan (RTP) for Southern California.

California High Speed Rail System - Under the guidance of the California High Speed Rail Authority (HSRA), a statewide system of HSR alignments is being analyzed for possible future implementation. The preferred technology is "steel wheel on rail" trains. The preferred alignment now being studied through Los Angeles is focused on the Los Angeles Union Station Passenger Terminal.

Although the alignment is not currently shown to connect to Los Angeles International Airport (LAX), the Draft Business Plan for the High Speed Train System for California (January 2000) stated the following about service to LAX Airport, "It is important that the state's largest airport, have a direct and convenient link to the high-speed train system. This corridor is currently being studied as a potential Maglev corridor. Therefore, while this link is not included in the Authority's financial plan, service to this airport should continue to be investigated and evaluated for steel-wheel-on-rail and Maglev technologies in the program EIR."

However to date, no specific technical analysis of a HSR Line to Los Angeles International Airport has been performed as a part of the statewide HSRA work. Therefore, no specific information is currently available to address the affects that the statewide HSR system would have on LAX Airport's future capacity or demand distribution.

Intra - Regional (Southern California) Maglev System - The 1998 Southern California Regional Transportation Plan (RTP) included the development and deployment of a 243 mile Intra-Regional Maglev System as part of the overall "Regional Transportation Strategy." Also, the Maglev system deployment was included in the adopted 2001 RTP. In 1999, Southern California Association of Governments, under the Federal Railroad Administration's (FRA), National Maglev Deployment Program (established under Section 12818 of TEA-21) initiated work on pre-construction planning Phase I for the first line in the Intra-Regional Maglev System.

In June of 2000, SCAG submitted the final project description document required under the program. The Plan identified a 92-mile, eight (8) station alignment connecting Los Angeles World Airport (LAX) to the Greater Los Angeles March Global Port facility in western Riverside County. Additional studies were also

initiated for Los Angeles Union Station Passenger Terminal to Orange County, LAX to Palmdale, and LAX to Orange County.

In 2001, the FRA selected two specific Maglev projects located elsewhere in the country for "fast track" project development. However, the FRA deemed that the SCAG Maglev Project was to continue its development effort and provided seed funds for a Phase II project study effort, which was initiated by SCAG in 2002.

It is envisioned that the Maglev technology will allow trains to ride on a cushion of air along a monorail guideway at speeds up to 240 mph. The train is levitated and propelled magnetically through a propulsion system located in the guideway, which can either be elevated or at grade. Proponents of the technology maintain that MAGLEV will be able to efficiently transport passengers and cargo in an environmentally friendly and energy-efficient manner. They also argue that the elevated guideway can be built on existing rights-of-way, with land consumption and related impacts minimized. With a price tag in the billions of dollars, the development of a Business Plan for Implementation is a key focus during Phase II.

The SCAG sponsored Maglev Studies[93] closely analyzed the effects that a high speed Maglev System would have on the system of regional Airports in southern California. The studies demonstrated that the capacity needs at Los Angeles International Airport would be little changed by a high speed mass transportation connection to the Intra-regional system. The technical studies demonstrated that the small shifts might take place in certain categories of air passenger trips from LAX to other airports in the region. However, the studies showed that these shifts were offset by new air passenger trips being attracted to LAX Airport in other categories. The net effect was that forecasted air passenger demand remained virtually unchanged at LAX airport if connected to the area system of Maglev routes.

The same conclusion was reached about a high speed Maglev line between Los Angeles International Airport and Palmdale Airport. The LAX to PMD High Speed Ground Access Study sponsored by SCAG[94] closely analyzed the effect of a high speed link to/from LAX Airport to Palmdale with intermediate stops in West Los Angeles and the San Fernando Valley. Once again, minor shifts in air passenger demand from LAX to PMD were offset by newly attracted air passenger trips to LAX. The study concluded that the attractiveness of LAX allowed it to "hold its own" when connected to other airports by high speed intra-regional mass transportation links.

Subtopical Response TR-ST-5.2: Light/Conventional Rail Connections

Based on the Los Angeles County Metropolitan Transportation Authority's (MTA) 2001 Long Range Transportation Plan and SCAG's RTP, no specific additional light rail service alignments are envisioned in the vicinity of Los Angeles International Airport by the year 2015. However, the MTA is considering the application of Bus Rapid Transit within their existing rail corridor along the west side of Aviation Boulevard that may result in additional transit improvements between downtown Los Angeles and LAX.

A wide variety of other rail transit improvements and extensions have been suggested by outside parties beyond the West Terminal extension of the Green Line. However, these extensions would be expensive and disruptive to build through communities adjacent to the Airport.

Thus, for the surface transportation analysis of the LAX Airport Master Plan, the light rail improvement that was assumed for Alternatives A, B, and C is an extension of the Metro Green Line to the West Terminal Complex, while for Alternative D, the improvement is a direct pedestrian connection from the Intermodal Transportation Center (ITC) to the Green Line Aviation station with people mover access to the CTA.

Subtopical Response TR-ST-5.3: Transit

The on-airport traffic model and the off-airport transportation model only included the planned (regionally adopted) and programmed transit services and alignments to be placed as specified for horizon year 2015 by local and regional planning agencies. Therefore, the levels of mass transit assumed in the surface transportation analysis for the LAX Airport Master Plan are in conformance with the adopted County (MTA) and regional (RTP) long range transportation plans that were in place at the time the

[93] SCAG 2001 Regional Transportation Plan, Appendix G, Maglev, May 2001.

[94] SCAG, LAX-Palmdale High Speed Ground Access Study, Ridership Forecasts and Benefits Assessment, July 24, 2001.

analysis was conducted. This includes light rail transit and various categories of public bus transit service.

LAWA firmly believes that mass transit can play a larger role in transportation on the west side of Los Angeles and in the South Bay area near LAX. Therefore, LAWA is agreeable in participating in funding planned transit service improvements and new routes as part of negotiated mitigation of traffic impacts of LAX Master Plan alternatives, subject to federal law and FAA approval. The Los Angeles County Metropolitan Transportation Authority (MTA), LADOT, and other transit operators in West Los Angeles have plans for service expansion that should attract many new riders to transit who currently drive their personal automobiles.

The proposed mitigation plans developed for the LAX Master Plan alternatives assumes LAWA participation in transit service improvements that are in adopted plans or programs. It was assumed that LAWA would, subject to FAA approval, either contribute financially to these planned or programmed improvements or would provide funds to further augment these transit improvements as specified through future agreements with the various transit operations.

Among the new transit services being implemented by MTA and other operations is the Metro Rapid Bus System. Several routes are planned in the vicinity of LAX, including along Lincoln Boulevard, Sepulveda Boulevard, Manchester Avenue, and Florence Avenue. These routes have been planned to operate with short headways and premium service characteristics to attract riders. On-board bus transponders will allow vehicles to receive traffic signal priority; special stations with "next trip" displays will create added attractiveness and "rail-like" operating characteristics. Thus far, Metro Rapid Demonstration Routes have proved very successful at achieving faster operating speeds and significant increases in ridership. As part of traffic mitigation, LAWA has suggested funding additional Metro Rapid Bus services in the vicinity of LAX, subject to federal law and FAA approval.

The airport also plans on expanding its own transit operations. This involves the development of new remote park-and-ride terminals, or "FlyAways" in new locations throughout Los Angeles County.

For Master Plan Alternatives A, B, and C, the LAX Transit Center is assumed to be relocated to better serve airport employees. In terms of the specific site for the relocation of the LAX Transit Center, LAWA would place a priority on working with transit operators to optimize the location and the design of the facility. As is the case today, a substantial number of airport employees would be expected to use public transit to the new relocated LAX Transit Center and would be shuttled from the Transit Center to various airport worksites. However, as is the case today, it is expected that very few air passengers would be attracted to use local public bus transit due to multiple stopping points, baggage constraints, and forced transfers. For Alternative D, the ITC to be located at the intersection of Imperial Highway and Aviation Boulevard would replace the functions of the LAX Transit Center.

Although the construction of the various elements of Master Plan Alternative C would be a major undertaking and would be spread over several years, carefully conceived phasing plans will minimize impacts to the surface transportation system, including fixed-route public transit bus routes. The conceptual assessment of construction phasing performed thus far indicates that significant closures or disruption of surface streets and arterial roadways can be avoided during airport construction. Thus, fixed route bus services operating on Sepulveda Boulevard and other roadways adjacent to the airport should experience little, if any, disruptions in scheduled services.

Subtopical Response TR-ST-5.4: Metro Green Line Extension to the West Terminal Complex

As mentioned above, the concept of extending the Metro Green Line (Light Rail Transit) to LAX Airport was included in the surface transportation analysis. More specifically, the Metro Green Line was extended to the Western Terminal Complex for LAX Airport Master Plan Alternatives A, B, and C. This was seen as a key to making these LAX Master Plan alternatives more transit conducive. Thus, both airport employees and air passenger destined for the West Terminal would have options available to them beyond automobile travel. Various categories of "airport destined" surface transportation trips were adjusted to account for this new transit link.

Alternative D includes convenient access to the Metro Green Line. Under Alternative D, an elevated moving pedestrian walkway would be provided to connect the Metro Green Line light rail station at the southeast corner of Aviation Boulevard and Imperial Highway with the proposed Intermodal

Transportation Center (ITC). An elevated Automated People Mover would then connect carry passengers between the ITC and the Central Terminal Area, with one intermediate stop at the Consolidated Rental Car Facility.

As mentioned above under Light/Conventional Rail Connections, a wide variety of other rail transit improvements and extensions to LAX Airport have been suggested by outside parties beyond the above-mentioned West Terminal extension. However, these extensions would be expensive to build and operate, and disruptive to build through communities adjacent to the Airport.

The best connections to/from LAX Airport for air passengers in Los Angeles County would be non-stop/direct services that require no intermodal ground transfers. Thus, the development of new FlyAways in several new locations that would be served by non-stop FlyAway buses may be more attractive to air passengers with baggage than light rail transit.

Subtopical Response TR-ST-5.5: Van Nuys FlyAway and the Possible Development of New FlyAway Sites

Air passengers from the San Fernando Valley destined for Los Angeles International Airport (LAX) currently have the option of traveling to Van Nuys Airport to purchase tickets with some airlines, park their automobiles, and board exclusive buses to travel to LAX Airport terminals. This concept is called a "FlyAway." It has several benefits, among which is the reduction of automotive travel to LAX and its parking lots and the processing of air passengers remotely from LAX's heavily used passenger terminals.

The Los Angeles World Airports is currently studying the development of other FlyAways at locations throughout Los Angeles County to serve LAX Airport. It is envisioned that these future FlyAway locations would be connected to LAX by non-stop bus services that would be very competitive with driving and paying for parking at or near the airport.

For the surface transportation analysis, it was conservatively assumed that a small percentage of air passenger trips would arrive at LAX Airport via FlyAway shuttle buses. If the ridership on the LAWA-operated FlyAway buses comprises a higher percentage of airport-related trips than was originally assumed, LAWA would receive additional mitigation credit for reducing airport trip reductions through this program. Please see LAX Master Plan Draft EIS/EIR Technical Report 3a. On-Airport Ground transportation Report (January 2001), pages 6-1 to 6-5. Under Item 6, "Additional Improvements for On-Airport Ground Transportation," it is assumed that remote check-in, an expanded Traffic Management Center (TMC), and parking rate adjustments result in a 2.5 percent reduction in vehicular trips by 2015.

Subtopical Response TR-ST-5.6: Percentage of Passengers/Employees Expected to Use Rail/Transit

The surface transportation analysis conducted for the Draft EIS/EIR and the assumptions in the transportation models used in the analysis used future transit ridership levels that are consistent with those produced by the SCAG Regional Transportation Model and were in conformance with the service levels and systems assumptions specified in the RTP. The LAX Off-Airport traffic model is a "focus" model that is tied directly to the SCAG Regional Transportation Model. This ensures consistency between the Regional RTP-based multimodal travel forecasts for years 2005 and 2015 and the LAX Master Plan forecasts for the same horizon years.

The surface transportation analysis conducted for the Los Angeles Airport Master Plan developed transportation modal usage and vehicular occupancy factors that are based on the most recently available air passenger/airport employee surveys and databases, as summarized in Section 4.3.1, On-Airport Surface Transportation of the Draft EIS/EIR.

TR-ST-6: Neighborhood Traffic Impacts

Introduction

Numerous comments were received expressing concerns over the impact of increased traffic on neighborhood roadways, and the effect this might have on livability within the neighborhoods. This topical

response provides a discussion of these concerns that can be used as a reference in the responses to the individual comments.

Discussion

Protecting neighborhoods is one of the four principles guiding the design of this alternative and its transportation analysis. The access and egress points to and from the proposed passenger facilities will be located to minimize the likelihood of traffic using residential streets as short-cuts. Guide signing and Intelligent Transportation System measures will also be installed to keep airport traffic out of residential communities.

Establishing the LAX Expressway and ring road provides additional capacity for both airport-related and non-airport traffic to better use the freeway system rather than using surface streets, particularly for traffic traveling between LAX and points north of the airport. Despite the extensive transportation enhancements proposed under the project alternatives, if residents near LAX believe that airport traffic will intrude into their neighborhoods, procedures have been established by the Los Angeles Department of Transportation to address their concerns through the implementation of traffic calming measures. Neighborhood traffic calming measures may include, but are not limited to: striping modifications; installation of strategically-placed turn restrictions; installation of stop signs; one-way street conversions; installation of speed humps, and construction of chokers, traffic circles, and raised medians. These controls are intended for local and collector streets only. All approved traffic controls should convey clear and unambiguous messages, be justified by meeting certain warrants (such as for stop signs), and regulate the traffic for which they are applied and intended, as described in the Caltrans Traffic Manual.

An effective Neighborhood Traffic Management Plan can only be implemented on a neighborhood-wide basis and must be a collaborative effort involving traffic engineers, neighborhood residents, City Council representatives, and homeowners' associations (where applicable). The implementation of traffic controls can often cause traffic to shift from one residential street to another, so it is vital that there be a consensus among the residents as to the goals and implications of any proposed plan.

To ensure that the Neighborhood Traffic Management Plan process runs smoothly, it is suggested that, for each community, outreach meetings take place to identify and discuss existing and anticipated airport traffic concerns. Strategies and options for a traffic control plan, criteria to achieve support from the majority of the affected residents toward a proposed plan, and funding mechanisms should all be discussed at these outreach meetings. The program is described in Section 5.1 of Technical Report S-2b of the

Supplement to the Draft EIS/EIR. The overall objective of the neighborhood traffic management program is to cooperate jointly with the communities to both define specific problems and then to design acceptable solutions for each specific problem. The primary advantage of this approach is that the community itself is directly involved in all aspects of the program, from defining the study area to establishing goals, to defining the problems, to reaching agreement on solutions. LAWA and LADOT recognize that this type of interaction is essential to achieving acceptable, workable solutions for the individual neighborhoods. The ground access plan for the LAX Master Plan makes the commitment for this program to proceed, beginning with approval of the Master Plan, and continuing until the Master Plan construction period has been completed. This will ensure that the critical neighborhood airport traffic issues are being addressed, not just once, but over the next several years.

Some comments recommended specific actions to protect neighborhood from traffic incursion. While these specific recommendations may have merit and may be precisely the appropriate actions to take, a decision on these recommendations should not be made within the LAX Master Plan environmental review process. The more appropriate venues for considering these recommendations are the community outreach meetings, which would be convened as part of the neighborhood traffic management programs. In this way these actions, along with others yet to be identified, can be considered by the effected neighborhood residents and a comprehensive neighborhood traffic management program can be developed. Taking actions on the few recommendations received during the LAX Master Plan environmental review process would preclude thorough review by effected neighborhood residents and eliminate the opportunity for other options (not yet unidentified) to be considered.

TR-ST-7: Westchester Southside Traffic

Introduction

Included in the comments submitted on the Draft EIS/EIR were several that questioned the validity of the assumptions used in traffic planning regarding collateral development at LAX Northside/Westchester Southside. This topical response provides a detailed discussion of these assumptions that can be used as a reference in the responses to the individual comments. Procedures by which LAX Northside/Westchester Southside development assumptions were incorporated into the transportation analysis of the LAX Master Plan are described in Topical Response TR-ST-2 regarding the surface transportation analysis methodology. More detailed information regarding LAX Northside/Westchester Southside is provided below.

Discussion

Subtopical Response TR-ST-7.1: Status of Development Approvals and Environmental Certification for Lax Northside/ Westchester Southside

Los Angeles World Airports (then the Los Angeles Department of Airports) submitted and obtained full vested approvals to develop a mixed-use project north of Westchester Parkway in 1984. That project, called LAX Northside, was approved by the Los Angeles City Council in Ordinance 159,562 on November 7, 1984 and signed by the Mayor on November 14, 1984. The Final Environmental Impact Report for the project was certified by the Los Angeles Department of Airports on March 29, 1983.

The area designated for LAX Northside/Westchester Southside, which was at the time a residential area, was acquired by the Los Angeles Department of Airports in order to provide a buffer between the airport and the residential neighborhoods to the north. The Department and its successor agency, LAWA, have planned since the mid 1980s to develop this buffer area "in a way which will be compatible with the adjoining neighborhoods, help restore vitality to the Westchester downtown business community and return the land to a productive use."[95] This is the context in which approval of the project was granted by the Los Angeles City Council in 1984.

The approved LAX Northside project totaled 4.5 million square feet of building space and included a mix of office, hotel, retail, light industrial, research park, and golf course uses. As described in the Final Environmental Impact Report[96] for the project, trip generation for the completed project was estimated as shown in the following table.

Table 1

Approved Trip Generation For LAX Northside

	In	Out	Total
AM Peak Hour	6,340	1,060	7,400
PM Peak Hour	2,430	7,000	9,430
Daily Total	29,950	29,950	59,900

Because this project is fully approved, the entire project could be developed by LAWA or sold to private developers, and the project could be completed in its entirety without further environmental review.

To the benefit of the surrounding communities, LAWA has delayed development of LAX Northside for over 15 years. By delaying development, LAWA has also slowed the pace of traffic growth in the area.

95 Albert C. Martin & Associates for the City of Los Angeles Department of Airports, Design Plan and Development Guidelines, LAX Northside, April 20, 1989, Section 1.0, page 3

96 City of Los Angeles Department of Airports, Lax North Side Development Project Final Environmental Impact Report, April 1983, Table 8, page IV-32

Subtopical Response TR-ST-7.2: Status of Lax Northside Transportation Mitigation Measures

Transportation mitigation measures for LAX Northside have been specified in Tract Map conditions as follows:

- Construct Westchester Parkway from Sepulveda Westway to Pershing Drive as a major highway;
- Remove from the Westchester/Playa Del Rey District Plan the planned extension of La Tijera Boulevard westerly through the Westchester Golf Course to its connection to the new Westchester Parkway west of Lincoln Boulevard;
- Build the La Tijera Parkway connector between 88th Street (west of Sepulveda Westway) and the new Westchester Parkway as a major highway;
- Downgrade 88th Street in the Westchester-Playa Del Rey District Plan to a collector street between the proposed La Tijera connector and Emerson Avenue;
- Delete Stanmoor Drive within the project site and remove the planned extension to the new Westchester Parkway from the Westchester-Playa Del Rey District Plan;
- Upgrade Sepulveda Westway from the Westchester Parkway to La Tijera Boulevard to a secondary highway;
- Upgrade Loyola Boulevard to a secondary highway between the north project boundary and the new Westchester Parkway;
- Participate in the Coastal Transportation Corridor Specific Plan (CTCSP) fee program;
- Install new traffic signals at up to ten existing or planned intersections along the periphery of the project, where LADOT determines them to be warranted.

All of these transportation mitigation measures have already been implemented except for the installation of a few new traffic signals at project entry points (which will not become necessary until the project is developed) and payment of CTCSP fees (which do not become due until building permit applications are submitted). This has provided a substantial benefit to the community in that the transportation improvements have been provided many years in advance of the land development that they are intended to mitigate.

The purpose for constructing Westchester Parkway was to provide access to every development site within LAX Northside. The Design Plan and development guidelines specify how many access points that can be provided along Westchester, and the specific design parameters of those access points. Those guidelines cannot be revised.

Subtopical Response TR-ST-7.3: Consistency with Prior LAX Northside Entitlement

Some comments were received stating that Ordinance Number 159,526 limited LAX Northside trip generation to 6,340 daily inbound trips and 7,000 daily outbound trips. This is a misinterpretation of the ordinance, which approved the trip generation estimates shown in the above table. Ordinance 159,562 states, "The total development of the subject property shall not generate more than 6,340 project-related inbound daily trips in the a.m. peak hour, nor more than 7,000 project-related outbound daily trips in the p.m. peak hour. This determination shall be based on the highest average hourly a.m. and p.m. counts taken over a typical Monday through Friday period at exclusive project access drives and/or roadways."[97]

The term "6,340 project-related inbound daily trips in the a.m. peak hour" is intended to mean "6,340 project-related inbound trips in the a.m. peak hour." The addition of the word "daily" is a typographical error. The same is true for the reference to 7,000 p.m. peak hour outbound trips. This is clarified later in the paragraph when it is stated that the number of trips is "based on the highest average hourly a.m. and p.m. counts. " As the table above shows, and as stated on page IV-32 of the Final EIR for LAX Northside, the estimated trip generation for the project is 6,340 inbound trips during the a.m. peak hour and 7,000 outbound trips during the p.m. peak hour. The misuse of the term "daily" was repeated in the Draft

[97] City of Los Angeles Ordinance 159526, November 14, 1984, Section 6, page 6

EIS/EIR in Section 4.2.3, page 4-93, which incorrectly states that LAX Northside conditions limit "project-generated daily traffic trips to 6,340 inbound and 7,000 outbound."

In the traffic analysis, the number of trips assumed in the No Action/No Project alternative for LAX Northside was 5,929 inbound trips in the a.m. peak hour and 5,459 outbound trips in the p.m. peak hour. These estimates are 6 to 22 percent lower than the entitlement allows. If Ordinance 159,526 had been used as the basis for the definition of LAX Northside in the No Action/No Project alternative, trip generation would have been higher by 411 inbound trips in the a.m. peak hour and by 1,541 outbound trips in the p.m. peak hour. In all four of the project alternatives, trip generation for LAX Northside/Westchester Southside is 3,151 inbound trips in the a.m. peak hour and 3,040 outbound trips in the p.m. peak hour. These estimates are less than one-half of the trip generation allowed in Ordinance 159,562.

Subtopical Response TR-ST-7.4: Importance of Reduced Development at LAX Northside/ Westchester Southside

By reducing the total development potential in LAX Northside/Westchester Southside, LAWA is substantially reducing the amount of development that has been anticipated for this area since 1983. The reduced project accomplishes the original objective of providing a buffer of non-residential development between LAX and the northern communities, but is able to do so with a much reduced impact on area roadways. While the impact of LAX Northside/Westchester Southside is substantially reduced, the fact remains that the full traffic mitigation program for the larger project has already been implemented. Westchester and nearby communities have been benefiting from this mitigation program for approximately 15 years, without experiencing the traffic that has been approved and anticipated from the project.

Recognizing that the continuing growth in airport demand is increasing airport-related traffic, Los Angeles World Airports has agreed to reduce development of LAX Northside/Westchester Southside in order to minimize overall trip generation of the airport while not sacrificing the original objectives of this buffer area. The 2.6 million square foot proposal represents a compromise in meeting both the objectives of the original LAX Northside project and the objectives of the LAX Master Plan.

The reduction in trip generation for the three project alternatives is based upon the downsizing of the project, not on any transportation demand management strategies or other trip-reduction measures. Therefore the reduced trip generation can be achieved simply by staying within the square footage parameters (total of 2.6 million square feet) defined for the project.

Subtopical Response TR-ST-7.5: Details of Westchester Southside Development Proposal

The Draft EIS/EIR for the LAX Master Plan is a program-level document, and the description of Westchester Southside within the document is consistent with this level of documentation. More detailed plans will be developed prior to actual construction of any structures. LAWA will work closely with the Los Angeles Department of Planning to develop plans within the parameters of the LAX Master Plan that meet City requirements. In addition, this coordinated effort will ensure that the project meets the requirements of the previously established Design Plan and Development Guidelines for LAX Northside, or will refine the guidelines as appropriate for the reduced project.

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