CHAPTER 1
Introduction

1.1 Airport Location and Setting

Los Angeles International Airport (LAX or the Airport) is the busiest commercial service airport in California and in 2014 was the third busiest airport in the United States in terms of total aircraft operations. LAX is owned and operated by the City of Los Angeles through its aviation department – Los Angeles World Airports (LAWA). LAX is located on the western side of the Los Angeles Basin, within the city limits of the City of Los Angeles. The Airport is bound by the communities of Playa Del Rey and Westchester (City of Los Angeles) to the north, the city of Inglewood and the community of Lennox (unincorporated Los Angeles County) to the east, the city of Hawthorne and the community of Del Aire (unincorporated Los Angeles County) to the southeast, the City of El Segundo to the south, and the Pacific Ocean to the west. **Exhibit 1-1** depicts the general location of LAX.

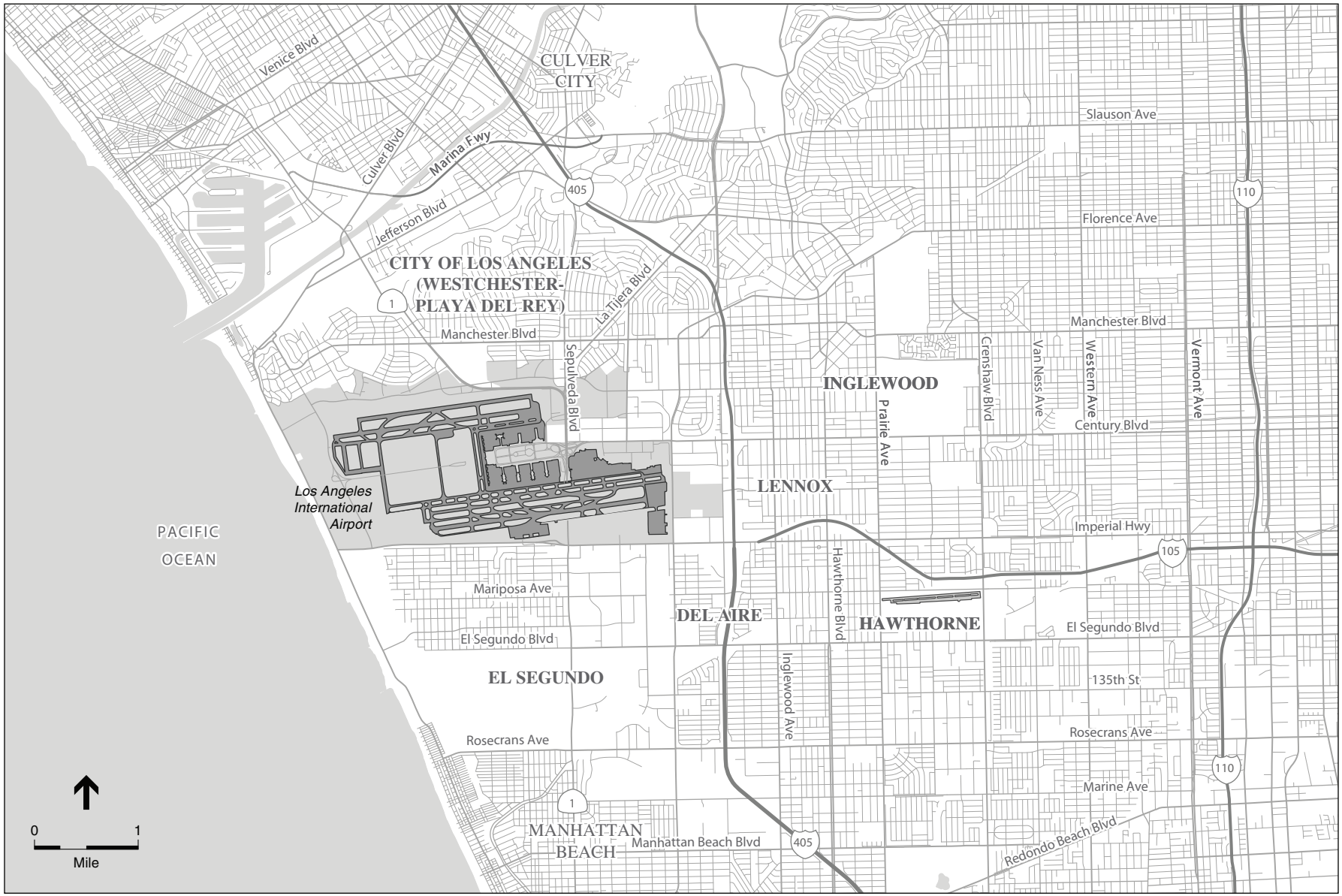
1.2 Airport History

The site occupied by LAX today was originally known as Mines Field and beginning in 1928 served as a general aviation airfield. During World War II, the airport was used for military flights. Commercial airline service started in December 1946. The present terminal complex at LAX was constructed in 1961. In the early 1980s, LAX added domestic and international terminals and a second-level roadway.

Starting in the mid-1990s, under Mayors Richard Riordan and James Hahn, a comprehensive Airport Master Plan[1] was prepared for LAX. While LAWA and the FAA successfully completed an EIR/EIS for the Airport Master Plan in the early 2000s, public opposition to certain elements of the Airport Master Plan threatened to derail implementation of the entire Master Plan. In late 2005, the City of Los Angeles was able to reach a compromise with parties that opposed the Airport Master Plan, allowing some of the elements of the Master Plan to proceed including the relocation of Runway 07R-25L 55 feet to the south and construction of a Midfield Satellite Concourse.

LAWA is in the midst of a multi-billion dollar modernization program that will transform LAX into a world-class airport and improve the overall traveling experience. The LAX Landside Access Modernization Program is the centerpiece of this effort, which includes the planning,

[1] City of Los Angeles, Los Angeles World Airports. *Taking Flight for a Better Future, Los Angeles International Airport Final Master Plan.* April 2004.



SOURCE: Thomas Guide; ESA Airports

Los Angeles International Airport 14 CFR Part 150 Study . 130072.02

Exhibit 1-1

Los Angeles International Airport and Surrounding Environs

design and development of an Automated People Mover (APM) system connecting passengers from the airport terminals to new Intermodal Transportation Facilities (ITF), a new Consolidated Rental Car Facility (CONRAC) and the regional Metro transit system.

In addition to this program, LAWA continues to invest in its existing $7 billion dollar capital improvement program at LAX, which includes several runway safety improvement projects and multi-million dollar renovations to the existing terminals at the airport. This investment has resulted in the completion of two award winning projects including the new Tom Bradley International Terminal, and the replacement Central Utility Plant.

1.3 Purpose of the Current Noise Exposure Map Update

LAWA is preparing updated noise exposure maps (NEMs) for LAX to ensure that ongoing aircraft noise mitigation programs that are managed by the Cities of Inglewood, Los Angeles, El Segundo, and the County of Los Angeles can continue to receive FAA grant funding. The ongoing funding of these noise mitigation programs is a critical part of LAWA's compliance with the State Noise Variance for LAX, and its obligations under the LAX Master Plan Stipulated Agreement, the Community Benefits Agreement, and the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP).[2] LAWA is not preparing an updated noise compatibility program (NCP) for LAX at this time.

1.4 Approach to Planning

This Title 14 Code of Federal Regulations Part 150 (14 CFR Part 150)[3] NEM Report update describes existing and future aircraft noise levels in the areas around the Airport. This report describes the analysis, methodology, assumptions and findings associated with development of the NEMs. For LAX, the existing (2015) NEM is based on aircraft operations at the Airport in calendar year 2013, the most recent full calendar year for which aircraft operations (landings and takeoffs) information were available when the maps were prepared. The future NEM represents 2020 conditions in conformance with 14 CFR Part 150, which requires preparation of a NEM representing forecast aircraft operations five years after the NEM date of submittal to the FAA (anticipated in 2015).

1.5 Airport Noise Compatibility Planning Overview

LAWA has a long history of implementing noise abatement and mitigation measures at LAX dating back to the late 1950s. LAX was declared a "noise problem" airport by the County of Los Angeles in November 1972. As a noise problem airport under Title 21 of the California Code of

2 City of Los Angeles, Los Angeles World Airports. *Alternative D Mitigation Monitoring and Reporting Program*. September 2004.

3 U.S. Department of Transportation, Federal Aviation Administration, Federal Aviation Regulations Part 150, *Airport Noise Compatibility Planning*, Code of Federal Regulations, Title 14, Chapter I, Subchapter I, Part 150, January 18, 1985, as amended.

Regulations, LAWA was required to install an aircraft noise monitoring system in the neighborhoods around LAX to define and monitor the Community Noise Equivalent Level[4] (CNEL) 65 decibel (dB) aircraft noise impact area. LAWA was also required to develop a comprehensive set of measures designed to minimize the impact of aircraft noise on noise sensitive land uses within the CNEL 65 and greater noise contours.

In 1981, the Los Angeles City Department of Airports in conjunction with the Los Angeles County Department of Regional Planning and the cities of El Segundo, Hawthorne, and Inglewood undertook an Airport Noise and Land Use Compatibility (ANCLUC) Study[5] to quantify LAX's aircraft noise exposure and to identify measures to mitigate aircraft noise impacts on the noise sensitive land uses surrounding LAX. The ANCLUC study process was the predecessor to the 14 CFR Part 150 study process commonly referred to as a FAR Part 150 Study.

The LAX ANCLUC process was completed in June 1984. The LAX NEM report, included in the ANCLUC and submitted under 14 CFR Part 150, was accepted by FAA on October 16, 1984. The ANCLUC recommended 40 noise mitigation and abatement measures. The Airport Board of Commissioners reviewed the ANCLUC study results and approved the recommended measures. On June 25, 1984, the Department of Airports submitted the ANCLUC recommendations to the Federal Aviation Administration (FAA) and requested that the measures be evaluated as a NCP under 14 CFR Part 150. On April 13, 1985, the FAA issued a Record of Approval (ROA) approving 28 of the 40 recommended measures **[See Appendix E for a list of the approved and disapproved NCP measures]**. As a result, the 28 approved measures comprise the LAX's Part 150 NCP. LAWA has undertaken numerous efforts to identify and implement additional noise mitigation and abatement measures since the FAA issued its ROA in 1985, but has not prepared an update to the 1985 NCP pursuant to the 14 CFR Part 150 process.

1.6 1985 Noise Compatibility Program

The following describes measures included in the 1985 NCP that were approved by the FAA in the April 13, 1985 ROA. LAWA did not implement NCP measures that were disapproved by the FAA. Disapproved measures are not discussed below. The implementation status of the NCP measures is also described below.

A. Airport Noise Monitoring, Management and Coordination

A.1 Emphasize noise abatement and enforcement activities as a priority function under the responsibility of the Deputy General Manager in Charge of Operations.

FAA Action: Approved. This is a local administrative action within the authority of the Department of Airports (DOA). Implementation is aimed at increasing the effectiveness and accountability of this function.

4 Noise metrics including CNEL are defined in Chapter 4.

5 City of Los Angeles, Department of Airports; Los Angeles County Department of Regional Planning. *Airport Noise Control and Land Use Compatibility Study*. July 1981.

Status: Responsibility for the LAX Aircraft Noise Abatement Program rests with the staff in LAWA's Noise Management Section of the Environmental and Land Use Planning Division. Specific noise abatement restrictions are enforced by Airport Operations under the Deputy Executive Director of Operations and Emergency Management.

A.2a Develop computer-based noise performance/management system in the short-range (1984—86) implementation phase.

FAA Action: Approved. This action would develop a system with the capability to monitor progress in noise reduction as well as identify problem areas that would benefit from additional mitigation or corrective actions.

Status: LAWA employs a Bruel & Kjaer Airport Noise and Operations Management System (ANOMS) with sophisticated noise and radar flight track monitoring capabilities to monitor and report on its adherence to the approved NCP measures.

A.2b Install computer-based noise performance/management system to monitor implementation of the Noise Compatibility Program (NCP) elements and to refine NCP elements as appropriate based on the ongoing monitoring and noise modeling program.

FAA Action: Approved. This element would operationalize and refine the system developed in A.2a.

Status: LAWA uses the data collected by the ANOMS to prepare quarterly noise contours based on the modeled and measured levels. As a part of the State variance process (described in detail below) as well as it the LAX/Community Noise Roundtable Work Program, LAWA has and continues to refine the NCP elements.

A.3 Develop an ongoing airport/community compatibility forum in the short-range (1984—86) implementation phase and continuing through the medium and long-range phases.

FAA Action: Approved. This is the mechanism by which progress will be evaluated and revisions to the NCP developed. Representatives on the forum will be local elected officials, aviation industry representatives, airport officials and the FAA.

Status: LAWA created and supports the LAX/Community Noise Roundtable, which tracks LAWA's progress against its noise abatement and mitigation commitments.

A.4 Actively pursue amendment of California Airport Noise Standards during the short-range (1984-86) implementation phase to augment the definition of compatible land use.

FAA Action: Approved. The city has indicated that this action is to request the State of California to revise existing regulations covering state airport noise standards and definitions of compatible land uses. The concept implied here is that a consolidated effort under the aegis of an approved NCP would be more effective in achieving the revisions sought. This is a matter of local discretion; no Federal action or authorization is necessary. This approval does not endorse the amendment. Approval simply acknowledges that the proposed amendment would contribute to the reduction of noncompatible uses.

Status: LAWA has worked with, and continues to work with, state and federal officials to minimize aircraft noise impacts on noise sensitive land uses within LAX's noise impact area. LAWA has supported new, more stringent aircraft noise standards, pursued funding for land acquisition and sound insulation programs, sought clarification from the FAA on clarified sound insulation guidance included in FAA Order 5100.38D, *Airport Improvement Program Handbook.*[6] LAWA collaborates with the Los Angeles County Airport Land Use Planning Staff and Commission to develop airside and landside development programs to comply with the California Airport Noise Standards. LAWA has not sought an amendment to the California Airport Noise Standards to augment the definition of compatible land use.

B. Flight Procedure Changes

No FAA-approved measures.

C. Airport Noise Limits, Use Restrictions, Technological Advances

C.la Maintain existing policy pertaining to Supersonic Transport (SST) access prohibition.

FAA Action: Approved. There is no ordinance or other airport rule in place to implement or enforce this policy with explicit reference to SST's. Board of Airport Commissioners Resolution No. 5456 (Oct. 22, 1969) stated that no commercial aircraft would be permitted to use LAX if it generated more noise than a Boeing 707-320-C. Resolution No. 8661 (Oct. 30, 1974) expresses Board's desire that FAR Part 36 noise certification standards be established for SST aircraft. Resolution No. 9022 (Apr. 28, 1975) expresses opposition to use of LAX by SST aircraft unless they meet FAR Part 36 requirements. A noise regulation, Los Angeles City Ordinance No. 152,455 (May 31, 1979), was adopted pursuant to Board Resolution No. 11650 (May 7, 1979). This noise regulation establishes noise limits and a phased compliance schedule essentially consistent with FAR's 36 and 91. Aircraft operators may, until January 1, 1985, use the airport if their aircraft will not exceed established noise limits on approach or departure. No aircraft type or model is named in the regulation, but the effect is to bar access to the noisiest aircraft, including the SST.

Status: LAWA has maintained existing policy regarding the prohibition of SSTs at LAX. In addition, there are currently no commercial passenger SSTs in operation.

C.lc The Los Angeles Board of Airport Commissioners will transmit to the FAA its proposed position on FAR Part 36, Stage III aircraft.

FAA Action: Approved. The FAA will consider the merits of the concept to retire or retrofit Stage II aircraft under a Federal regulatory schedule. A notice of petition for rulemaking to that effect was published in the Federal Register on April 4, 1984. Approval of this element within the context of this NCP does not constitute a commitment by the FAA to establish such a regulation. That action can only be taken after completion of the process for publishing a new regulation, including the opportunity to comment by interested parties.

6 U.S. Department of Transportation, Federal Aviation Administration. Order 5100.38D, *Airport Improvement Program Handbook*. September 30, 2014.

Status: The Board of Airport Commissioners has submitted letters to FAA and other governing bodies, such as the International Civil Aviation Organization (ICAO), supporting more stringent aircraft noise regulations including the support for Stage III, Stage 4, and Chapter 14 noise regulations as well as the phase out of Stage I and II aircraft. In 1993, the Los Angeles City Council adopted Ordinance 168.852 to ensure that the commercial fleet at LAX would be entirely Stage III compliant by the federal deadline of December 31, 1999 as established by the *Airport Noise and Capacity Act of 1990*.[7]

C.2 Continue to pursue a policy of accelerating the requirement for installation of fixed ground power and air conditioning units at all aircraft parking locations for fuel conservation and reduced ground noise emissions.

FAA Action: Approved. Such a policy is within the purview of local airport management. No Federal action or authorization is necessary.

Status: LAWA has pursued and installed fixed ground power and air conditioning units at all aircraft parking locations where it has been practical and cost effective to do so. As of November 2014, all passenger gates (i.e., terminal and regional boarding ramp gates) are electrified with 400 hertz ground power in compliance with commitments made by LAWA in the LAX Master Plan Community Benefits Agreement.[8]

C.3 Maintain voluntary preferential runway utilization system with inboard Runways 25R-7L and 24L-6R and Taxiways K and U being preferred during noise sensitive nighttime (10 p.m. to 7 a.m.) hours.

FAA Action: Approved. This procedure is currently used, traffic and other conditions permitting. No mandatory use of this procedure is contemplated.

Status: LAWA has worked closely with the FAA's Airport Traffic Control Tower (ATCT) Manager to maintain a voluntary Preferential Runway Use Program that seeks to maximize the use of the inboard runways during the nighttime hours. LAWA has also worked with the FAA to implement a voluntary over-ocean operation from midnight to 6:30 am. The voluntary Preferential Runway Use Program has been incorporated into the ATCT's Standard Operating Procedures.

C.5. The Los Angeles Board of Airport Commissioners will adopt a policy for the Imperial Terminal that would allow continued use without the operation of aircraft engines at the terminal area.

FAA Action: Approved. This is a change in operating policy in the vicinity of the Imperial Terminal which was adopted by the Board of Airport Commissioners on June 13, 1984 to provide some of the relief sought. This policy requires that all turbojet aircraft and turboprop aircraft over 65,000 pounds be towed between taxiway F and the Imperial Terminal when arriving or departing. It also prohibits jet engine runs and run-ups and limits the use of aircraft auxiliary power units on that terminal ramp. The Board's resolution adopting this policy includes no enforcement measures, but operators have complied voluntarily without significant complaints.

7 U. S. Congress. *Airport Noise and Capacity Act of 1990.* (49 U.S.C. § 47528). 1990.
8 City of Los Angeles, Los Angeles World Airports. *Community Benefits Agreement – LAX Master Plan Program.* 2004.

Status: This operating policy for the Imperial Terminal, located south of Runway 07R-25L, was adopted by the Board of Airport Commissioners on June 13, 1984. The policy requires that all turbojet aircraft and turboprop aircraft over 65,000 pounds be towed to or from the taxiway adjacent to the Imperial Terminal ramp when arriving or departing. It also prohibits engine runs and run-ups, and limits the use of aircraft auxiliary power units on the Imperial Terminal ramp.

C.6 Increase pilot awareness of Standard Instrument Departure (SID) requirement of not turning prior to the coastline upon departure from Runway 25 L&R and 24 L&R unless so instructed by air traffic control; increase pilot understanding of the adverse noise impacts resulting from premature turns and drifts over adjacent residential neighborhoods (short term); continuous monitoring and enforcement. (Element A.5, acquisition of ARTS IIIA data, would augment current enforcement capabilities.)

FAA Action: Approved. The SID procedure requires aircraft departing to the west to continue on runway heading and not turn to an easterly heading until a shoreline crossing of 8000' is assured. The major thrust of this measure is pilot education for the purpose of closer adherence to the published departure procedures. Current practice is that ATC notifies the airport noise abatement office of aircraft which are observed to turn east (prematurely) with respect to the SID procedure. Airport staff then notifies the aircraft operator, or chief pilot in case of air carriers, of the infraction. Enforcement measures are not punitive, rather they rely on "jawboning" techniques to elicit compliance. In the past, the effectiveness of this measure has been criticized because the letter of notification has not been timely. More recently, tower personnel have notified user's officials (e.g. chief pilots) at the same time the airport staff is notified. Although not in letter form, the timeliness of this notice has proven to be very effective. Previous items A2.a and A2.b when implemented will improve the efficiency of the notification system and reduce the workload of ATC.

Status: LAWA has continuously worked to increase pilot awareness of the SID requirement of not turning prior to the shoreline for west departures. LAWA uses its ANOMS to monitor aircraft flight tracks and identify deviations from the desired procedures, which are sent to the airlines/operators as part of the ongoing Early Turn Notification Program. LAWA regularly briefs the LAX/Community Noise Roundtable on the monitored results and seeks improvement in performance from the airline participants. LAWA has also worked with FAA to improve adherence to the procedure.

C.7 Maintain and enforce existing regulation of nighttime engine maintenance run-ups. Review current regulation to develop strengthened program of enforcement for adoption. Existing regulations regarding nighttime engine maintenance run-ups were assessed and found adequate if properly enforced. Sufficient manpower and monitoring sites now exist to enforce this regulation.

FAA Action: Approved. The city has determined that adequate regulations and hardware exists to enforce the current airport regulation of no run-ups between 11 p.m. and 7 a.m. The city advised that this measure is within the management authority of the Department of Airports and enforcement will be handled the same as other violations of lease agreements which require adherence to airport operating rules.

Status: Over the years, LAWA has reviewed and sought to improve its run-up policies as well as its ability to monitor run-up activity. LAWA has implemented a maintenance run-up curfew between 11 pm and 6 am that is still in effect.

D. Capital Improvements Projects

D.l Prepare a detailed evaluation of the noise reduction benefits produced by a 2,000-foot westerly extension of the Runways 25/7 L&R together with a 2,600-foot take-off threshold relocation for a total landing threshold displacement of 4,600 feet (short range). Reverse thrust noise impact will be emphasized. Engineering feasibility and environmental assessment studies will also be included during the short range (1984-86) implementation phase.

FAA Action: Approved. This measure would produce a definitive study of the costs and benefits associated with a westerly extension of the south runways combined with landing threshold changes at the east ends. Noise exposure analysis indicates that this measure could have significant beneficial results, but reverse thrust noise impact as well as the cost, in both dollars and airfield efficiency, have not been fully addressed.

Status: No documentation was found regarding the proposed evaluation for Runways 07L-25R and 07R-25L described above. LAWA has examined the noise effects of a variety of runway improvement projects since the preparation of the NCP in state and federal environmental documents prepared for various capital improvement projects.

E. Residential Acoustical Insulation

E.la Undertake initial acoustical insulation program using representative housing sample in terms of both construction type and predominant noise exposure within the projected 1987 CNEL contour set, in the short range implementation phase and monitor effectiveness.

Mitigation of sideline and takeoff noise impacts in the communities of El Segundo and Westchester is a key objective of the initial FAR Part 150 Noise Compatibility Program for LAX. Because these communities are comprised of sound, high quality residential neighborhoods, land use conversion is not considered a viable option. Instead, it is recommended that an acoustical insulation program be implemented, with first priority funding directed into those neighborhoods most heavily noise impacted (70 CNEL+). Fully implemented, this program will encompass over 4,200 dwelling units, and achieve a 16 percent reduction in the total number of incompatible residential units within the projected airport noise impact area.

FAA Action: Approved. This is the first phase of an acoustical treatment program for noise-impacted communities. Twenty dwelling units will be treated under this project to formulate better estimates of costs and to develop project management techniques applicable to future projects.

E.lb Expand voluntary residential acoustical insulation program to Los Angeles City and El Segundo Neighborhoods exposed to CNEL levels of 70 dBA or greater during the remainder of the short range (1984-86) implementation phase.

FAA Action: Approved. This measure is a companion to item E.la, above.

E.lc Expand voluntary residential acoustical insulation program to neighborhoods within the projected target CNEL levels of 65 dBA in the cities of Los Angeles, El Segundo, Inglewood, and unincorporated Los Angeles County areas of Del Aire and Lennox during the remainder of the medium range (1986-90) implementation phase and the long range (1990+) as necessary.

An expanded acoustical insulation program in sound residential neighborhoods located within the 65 to 70 CNEL contour is recommended as the only off airport noise mitigation alternative. This program will involve both voluntary insulation of existing units, and mandatory insulation of proposed new residential units as a condition of development. Since nearly 13,000 dwelling units fall within this noise impact area, the recommended program will necessarily involve a long term, phased implementation effort.

FAA Action: Approved. This is a further expansion of the two areas immediately above.

Status: LAWA has supported the implementation and funding of a sound insulation program for residences within the noise impact boundary. LAWA employs a full time sound insulation program manager who is assisted by consultants to administer the program and assist participating jurisdictions. 18,011 dwelling units have been made compatible through sound insulation and/or property acquisition.

F. Actions and Projects to Reduce Incompatible Land Use

F.1 Redevelopment by the city of Inglewood in the Century and La Cienega Redevelopment Districts to airport compatible land uses. Action to commence in the short range and continue until completed. The recommended program is intended to support and accelerate efforts by the city of Inglewood to recycle portions of the La Cienega and Century Redevelopment Districts to airport compatible land uses. Once implemented, nearly 2,540 dwelling units will be removed from the projected airport noise impact area.

FAA Action: Approved. This project, although large in scope, falls within the concept of those voluntary measures described in FM Advisory Circular 150/5020-1, sections 3 and 4. The city of Inglewood has advised that it intends to initiate redevelopment in certain noncompatible high noise areas that have good potential for the introduction of compatible uses. The first steps in this project have been accomplished, and the city is now ready to implement the first acquisition and clearance measures. It should be emphasized that any relocation resulting from use of Federal funds will require the city to satisfy the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646). This measure, if fully implemented, could remove approximately 2,540 dwelling units from noncompatible use. The city has determined that it has the authority to initiate these actions, although some steps would involve state and/or Federal concurrence, particularly when outside funds are used. Approval of this concept within this NCP should not be construed as a commitment to future Federal funding under the AIP or successor legislation. (See FAA comment under item G.lf, below.) Local, state, and other Federal agencies may assist with such projects according to their authority and funding capability provided that the sponsoring jurisdiction develops satisfactory plans proposals, and funding necessary for the local matching share.

Status: Through 2009, the City of Inglewood has acquired 816 dwelling units using federal and airport funds. On December 29, 2011 the California Supreme Court upheld Assembly Bill AB 26, which terminated all redevelopment agencies in the state of California, including the Inglewood Redevelopment Agency. As a result, the Century and La Cienega Redevelopment Districts in the City of Inglewood are no longer active redevelopment areas.

On January 10, 2012 the City of Inglewood elected to become the Successor Agency of the former Inglewood Redevelopment Agency and to carry out specific projects in various stages of implementation. No projects located within the previously existing Century and La Cienega Redevelopment Districts have been elected for further implementation.

F.2 Rezoning actions by the City of Inglewood in specific areas to foster development of airport compatible uses and to preclude the development of noise sensitive land uses within the established noise impact area. This action would occur in the short range.

FAA Action: Approved. The city of Inglewood has advised that it proposes to rezone existing neighborhoods to encourage current or subsequent land owners to convert properties to compatible uses. If fully implemented, 440 dwelling units could be removed from noise exposure in excess of 65 CNEL. The city has advised that it has the necessary authority to implement this action.

Status: The City of Inglewood is currently operating under the direction of a General Plan adopted in 1980. The Land Use Element of the General Plan was amended in 1986 and 2006.[9] The General Plan does not specifically address rezoning actions to foster the development of airport compatible uses and/or to preclude the development of noise sensitive land uses within the established noise area. However, the 2006 Land Use Element does include overarching goals and policies to foster development of airport compatible land uses.

F.3a Development and adoption of a Revitalization Strategy and Implementation Program by Los Angeles County for the unincorporated Los Angeles County Lennox area to encourage development of airport compatible land uses (short range).

FAA Action: Approved. This measure is similar to that described under item F.1, above, except that the target area is under jurisdiction of Los Angeles County. FAA comments under items F.l and G.lf are also applicable to this item. This project has the potential to benefit residents in approximately 3,900 dwelling units exposed to more than 65 CNEL (Ldn).

Status: The Department of Regional Planning (DRP) is not currently nor has it previously prepared and adopted a Revitalization Strategy and Implementation Program for Lennox to encourage the development of airport compatible land uses. However, in 2010, DRP did complete *Vision Lennox*[10]; a community plan with a goal of developing a shared vision for the future of the Lennox community. Through a series of community workshops DRP and community members were able to develop a land-use, transportation, and economic revitalization vision for the community. *Vision Lennox* does not provide the regulatory

9 City of Inglewood, 2006. *City of Inglewood General Plan Update Technical Background Report.* August 2006.
10 Los Angeles County, 2010. *Vision Lennox Plan*. Adopted June 30, 2010.

tools for Los Angeles County to encourage development of airport compatible land uses within the Lennox community.

F.3b Amendment of the Countywide General Plan to reflect the Lennox Revitalization Strategy and initiate the implementation programs (medium range and long range).

FAA Action: Approved. Los Angeles County intends to revise the county plan in accordance with the results of item F.3, above, and to implement certain actions within the plan. This measure can be initiated under existing county authority although state and/or Federal concurrence may be required for certain steps.

Status: DRP is not currently nor has it previously prepared a Lennox Revitalization Strategy or implementation program for Lennox. However, DRP is currently updating the general plan for Los Angeles County (Draft 2035 General Plan). The Draft 2035 General Plan provides the policy framework for future growth throughout Los Angeles County including the community of Lennox. As part of the general plan update, zone changes are being made to achieve consistency with the goals and policies included in the Draft 2035 General Plan. The general plan update also takes into consideration the recommendations of the *Vision Lennox* plan which was completed in 2010. Additional information regarding the Draft 2035 General Plan is provided in **Appendix B**.

F.3c Initiation of rezoning actions by the County of Los Angeles as necessary, to support the Lennox Revitalization Strategy and Implementation Program.

FAA Action: Approved. The city has identified that the proposed zoning changes are within the authority of Los Angeles County. They require no Federal action or concurrence.

Status: DRP is not currently nor has it previously prepared a Lennox Revitalization Strategy and Implementation Program. DRP is currently amending zoning in the Lennox community to achieve consistency with the goals and policies set forth in the Draft 2035 General Plan.

F.4a Preparation and adoption by the City of Los Angeles of amendments to the Westchester/Playa del Rey District Plan to foster development of airport compatible uses in areas adjacent to the north runway threshold. (Short range 1984—86).

FAA Action: Approved. The city has advised that the proposed plan revisions are within the authority of the city of Los Angeles. They require no Federal action or concurrence.

Status: In 1984, the City of Los Angeles approved 4,500,000 square feet of commercial development in the area located just north of Los Angeles International Airport (LAX), known as the LAX Northside Area. The LAX Northside Area was once primarily single-family homes but was acquired by LAWA prior to 1984 using FAA grant funds. Use of the FAA grant funds to purchase the properties within the LAX Northside Area triggered the need to convert the use of the properties into airport compatible land uses.

The following documents and ordinances were approved between 1984 and 1986 for the LAX Northside Area:

- 1984 Zoning Ordinances (159,526; 169,254; and 169,768) and Final Tract Map No. 34836

F.4b Rezoning actions by the City of Los Angeles to support the District Plan amendments in fostering airport compatible uses in areas adjacent to the north runway thresholds during the medium range (1986—90) implementation phase.

FAA Action: Approved. The proposed zoning changes are to be consistent with the plan changes adopted as a result of item F.4a, above. The city has advised that it has the necessary authority to initiate such changes, and no Federal action or concurrence is required.

Status: In addition to the 4.5 million square feet of commercial development approved in 1984, the City of Los Angeles prepared the *LAX Northside Design Plan and Development Guidelines*[11] in 1989 to provide additional guidance with development of the property located in the LAX Northside Area. The guidelines recommended land uses for each area of the property, established urban design standards for architectural and landscape designs including setbacks, height restrictions, lighting, signs and street furniture, as well as other standards such as design review processes and zone change conditions.

F.6 Adoption of a comprehensive Airport Land Use Compatibility Plan for LAX and environs reflecting the provisions of the FAR Part 150 action program by Los Angeles County Regional Planning Commission acting as the Airport Land Use Commission as mandated by Assembly Bi11 No. 2920 and codified as chapter 1041 (short range 1984—86).

FAA Action: Approved. Los Angeles County is designated by state law as the agency responsible for developing airport land use compatibility plans for the areas surrounding each airport in the county. This item emphasizes that responsibility and establishes the NCP as the basis for much of the plan. No Federal action or concurrence, beyond the approval or disapproval of this NCP, is required to implement this action.

Status: The DRP has prepared an airport land use compatibility plan for Los Angeles County Airports including LAX. The Los Angeles County Airport Land Use Plan[12] was adopted by the Los Angeles Airport Land Use Commission on December 19, 1991. A revised county-wide plan was adopted on December 1, 2004.

F.7 Evaluate and construct sound attenuation barriers in appropriate locations adjacent to residential areas within the city of El Segundo. The evaluation would occur in the short range with construction to occur during the remainder of that phase and into the medium range.

FAA Action: Approved. This measure would evaluate the feasibility and the expected benefits of a noise barrier to protect certain portions of El Segundo south of LAX. The barrier would be constructed if the evaluation resulted in a positive recommendation.

Status: An evaluation of the effectiveness of sound attenuation barriers adjacent to residential areas within the city of El Segundo was conducted. The evaluation concluded that noise barriers would not be effective due to the contribution of noise from aircraft in flight which would overtop the barriers.

11 City of Los Angeles Department of Airports. *LAX Northside Design Plan and Development Guidelines.* April 20, 1989.

12 Los Angeles County Department of Regional Planning. *Los Angeles County Airport Land Use Plan*. Adopted on December 19, 1991 (Revised December 1, 2004).

G. Noise Compatibility Program Implementation and Funding

G.1b Evaluate legality and feasibility of amending Federal law to allow the airport proprietor to implement a passenger facility charge which as a condition must have FAA and Congressional approval during the short range (1984-86) implementation phase to provide for the local share of noise compatibility program implementation funding.

FAA Action: Approved. Current legislation precludes the establishment by local airport authorities of certain charges on air passengers. This NCP item expresses the intent of the Board of Airport Commissioners to study and evaluate ways in which such charges can be levied. The proposal recognizes that new Federal legislation would be required to establish such authority at a local level. This approval does not endorse this legislative proposal. Approval simply acknowledges that additional funding sources to carry out a noise program would contribute to the reduction of noncompatible uses.

Status: LAWA was successful in obtaining federal legislation that permits airports to collect a passenger facility charge (PFC). LAWA has collected $349,828,789 for LAX Land Acquisition, $158,201,087 for LAX Soundproofing, and $137,252,523 for local jurisdictions in PFCs to help fund the noise mitigation programs.

G.1d Evaluate legality and feasibility of additional NCP implementation funding sources including the following to provide the local share of noise compatibility program funding:

- Amendment of AIP Program through Federal legislation to provide 100 percent financing for approved noise compatibility program elements.
- Conversion of a portion of the 8 percent ticket tax to a levy permitting its applicability as a debt service fund enabling the issuance of special bonds for the specific purpose of implementing an approved element of the noise compatibility program.
- Application of "In-Kind Services" by local authorities.
- Provision of the local share should be by the local agency having jurisdiction.

FAA Action: Approved. As in item G.lb, above, this measure recommends local study to develop alternatives for reducing the financial burden on local communities for NCP projects. Approval of this study item does not constitute approval of any specific funding concept. Approval simply acknowledges that additional funding sources to carry out a noise program would contribute to the reduction of noncompatible uses.

Status: LAWA has explored a number of alternative funding sources and approaches. AIP, PFCs and Airport Revenue remain the primary source of funding for the sound insulation programs.

G.1e The Department of Airports will negotiate a contract with its Financial Consultant to provide an additional review of the possibilities existing for other alternative financing methods that might be used to accomplish the off-airport redevelopment and insulation actions included in the noise compatibility program.

FAA Action: Approved. This measure recommends further study of local initiatives which could be used to generate revenue for the local matching funds in AIP grants. Approval simply acknowledges that additional funding sources to carry out a noise program would contribute to the reduction of noncompatible uses.

Status: LAWA has not yet pursued a comprehensive review of all off-airport redevelopment around LAX as part of the noise compatibility program update. However, LAWA is seeking to entitle and develop the 340 acres of the LAX Northside Area to allow for 2.3 million square feet of compatible commercial development and to serve as a buffer zone between the Westchester community and LAX airfield operations. Additionally, LAWA is seeking an approximate 4 million square feet of compatible collateral development in the Century Corridor Business District as part of the LAX Landside Modernization Program.

1.7 Other Noise Mitigation Efforts

Over the years, LAWA has undertaken numerous noise abatement and noise mitigation efforts outside of the 14 CFR Part 150 process. The following sections describe noise abatement measures and program measures that are currently implemented at LAX.

1.7.1 Noise Abatement Measures

In addition to the measures described in Section 1.6, LAWA also implements other procedures to minimize aircraft noise. During standard westerly operations, civil turbojet aircraft are encouraged to adhere to reduced thrust climb procedures contained in FAA Advisory Circular 91.53A[13] for westerly departures.[14] LAWA's Noise Management Section actively monitors and promotes adherence to the measures by working with aircraft operators and the FAA to identify where improvements can be made.

LAWA has adopted rules and regulations regarding aircraft noise as it relates to aircraft operations at LAX. Noise abatement measures and related actions under Section 5 "Aircraft Noise Abatement Operating Procedures and Restrictions" of the *LAX Rules and Regulations*[15] are summarized below.

Over-Ocean Operations

To minimize the nighttime noise impacts of LAX aircraft operations between midnight and 6:30 a.m., aircraft approach LAX from the west over the Pacific Ocean and depart to the west over the Pacific Ocean, unless Air Traffic Control (ATC) determines that weather and/or airport operational conditions are unsafe for such operations. The Over-Ocean Operations noise

13 U.S. Department of Transportation, Federal Aviation Administration. Advisory Circular 91.53A, *Noise Abatement Departure Profile*. July 22, 1993.
14 Use of a reduced thrust takeoff technique is allowed for westerly departures, but discouraged for easterly takeoffs.
15 City of Los Angeles, Los Angeles World Airports. *LAX Rules and Regulations*, Section 5 "Aircraft Noise Abatement Operating Procedures". September 2010.

abatement procedure seeks to have aircraft operations over the Pacific Ocean rather than over people's homes during the night.

Early Turn Restrictions

All aircraft departing to the west are to maintain runway heading until past the shoreline before commencing any turns, unless specifically instructed otherwise by ATC. LAWA staff members monitor all early turns to the north and south on a routine basis and use recordings of ATC communications to determine if ATC staff instructed the pilot to make the early turn. LAWA staff members send notification letters and graphics to the airlines and generate a monthly report and distribute it to interested communities, the FAA, and other interested parties.

Helicopter Operating Procedures

Helicopter operators must comply with the ATC requirements and procedures pertaining to helicopter routes and altitudes within the Los Angeles Class B Airspace. Operators arriving or departing LAX must carry a current Helicopter Route Chart and use the flight routes designated by the FAA for Visual Flight Rules (VFR) and Special Visual Flight Rules (SVFR) operations. Operators are requested to use the southerly (industrial) route when arriving or departing LAX during SVFR operations, unless instructed otherwise by ATC. In addition to using FAA-designated flight routes, operators will maintain an altitude of 2,000 feet, weather, traffic and safety permitting. Operators shall use noise abatement approach and departure flight techniques and avoid nighttime (10:00 p.m. to 7:00 a.m.) operations except in extreme emergency cases. Except for FAA certification flights, LAX restricts helicopter training operations such as touch-and-goes, stop- and-goes, and low approaches.

Preferential Runway Use

During the noise sensitive hours of 10:00 p.m. to 7:00 a.m., ATC maximizes use of the inboard Runways 06R-24L and 07L-25R and inboard Taxiways E and C, respectively. At all other times, the inboard runways are preferred over the outboard runways for departures and, except as required for Over-Ocean Operations, the outboard runways are preferred over the inboard runways for arrivals. In addition, intersection takeoffs are only to be used when they improve the overall efficiency of the traffic flow, and even then, are only to be accomplished from Taxiways E-8 and F when the Airport is operating in west flow. No intersection takeoffs are permitted during east flow.

Imperial Terminal Procedures

All turboprops over 65,000 pounds Maximum Gross Landing Weight and all turbojets, regardless of weight, arriving at the Imperial Terminal are required to shut down their engines on Taxiway A and be towed to their assigned parking position. On departure, these aircraft are towed to the taxiway and positioned facing east or west prior to starting engines. Jet engine runs and run-ups, and turbine-based ground power units are restricted on the Imperial Terminal ramp and auxiliary power units (APUs) may only be operated when required during tow-in or -out.

Engine Run-up Restrictions

Run-ups for maintenance or test purposes of engines mounted on aircraft are restricted between the hours of 11:00 p.m. and 6:00 a.m. unless waived on an individual case basis by the Executive Director, or the Director's duly authorized representative, subject to the following conditions:

- The engine(s) will be run in a sound suppression unit that will reduce the sound level at the airport perimeter to 8 dB or less above the ambient background level in surrounding residential areas at the time the run-up is conducted.

- A single engine will not be operated to exceed idle power at each leasehold area. If more than one engine is to be checked, each engine must be checked separately.

- APUs will be operated only for maintenance and preflight checks. Idle engine checks are to be operated at the minimum time required on an aircraft to accomplish the necessary maintenance or preflight check.

Maintenance or test running of jet engines not mounted on an aircraft is restricted unless performed in a test cell of adequate design. The test cell must reduce noise levels to meet specified criteria at a distance of 250 feet from the center of the test cell.

1.7.2 Aircraft Noise Community Response Program

LAWA maintains a noise complaint phone line (424-64NOISE) and there is a noise complaint form on the LAX website. Concerned citizens can access the noise complaint phone line and the website 24 hours a day, seven days a week. LAWA also provides a web-based flight tracking system where the public can research a particular aircraft operation that may have caused a disturbance. The web-based flight tracking system provides a link to submit a complaint with specific aircraft data included. Complaints received via email or fax, are also logged in the noise complaint database. Currently, staff members investigate one incident of disturbance per noise complaint and a maximum of five noise complaints per person per month. Response letters are provided to those residents requesting a written response to their noise complaints. A summary report is generated each month and is available on LAWA's website.

1.7.3 In-Flight Monitoring Program

LAWA monitors specific arrival and departure procedures for compliance with described minimum altitudes and/or location of aircraft, as established by the FAA or contained in the Aircraft Noise Abatement Operating Procedures and Restrictions section of the LAX Rules and Regulations. In addition to the regular monthly and quarterly programs described above, these ad hoc monitoring efforts include reviews of the following procedures:

- Short Turns (On North arrivals, turns to base leg prior to the Harbor Freeway);

- Monterey Park Overflights (Extended downwind approach legs);
- Go-arounds (Either ATC- or pilot-initiated; non-runway headings);
- Loop Departure Procedure (Improperly flown loop departures overflying communities south of LAX); and
- Palos Verdes Peninsula Overflights (Southbound turboprops and jets avoid overflying communities unless directed by ATC).

1.7.4 LAX/Community Noise Roundtable

The LAX/Community Noise Roundtable was created in September 2000 and is intended "to identify noise concerns in the surrounding communities and to recommend courses of action to LAWA, the FAA, or other responsible entity that could reduce noise over affected communities without shifting noise from one community to another".[16] Membership of the Roundtable consists of local elected officials and staff, representatives of congressional offices, members of recognized community groups, the FAA (a non-voting member), airline representatives and LAWA Management. This forum provides a mechanism that attempts to ensure cooperation between LAWA and local impacted communities in achieving noise reduction in those communities wherever possible without shifting noise from one community to another.

1.8 Consultation and Public Involvement

The airlines serving the Airport, other Airport tenants and users, the FAA, local and regional planning agencies (including the City of Los Angeles, the County of Los Angeles, the City of El Segundo, and the City of Inglewood), local elected officials, the California Division of Aeronautics and the general public were consulted during the development of the NEMs for LAX. Management staff for residential sound insulation programs in the aforementioned jurisdictions were also consulted during the development of the NEMs and provided information regarding the location of noise mitigated parcels in the vicinity of LAX. The public involvement program for the NEM update included two rounds of public workshops, briefings to the LAX/Community Noise Roundtable, and a briefing to FAA ATCT staff.

Public information workshops occurred on May 12, 2014; May 13, 2014; May 11, 2015; and May 12, 2015. A briefing with FAA ATCT staff based at LAX occurred on March 11, 2015. LAX/Community Noise Roundtable briefings occurred on March 12, 2014; May 14, 2014; and May 13, 2015. As shown in **Table 1-1**, the LAX/Community Noise Roundtable membership includes local elected officials and staff, representatives of congressional offices, members of recognized community groups, the FAA, the airlines, and LAWA management.

[16] LAX/Community Noise Roundtable By-Laws, Article II – Mission, Approved by the Roundtable May 8, 2002 and amended March 9, 2011.

TABLE 1-1
LIST OF ATTENDEES – LAX/COMMUNITY NOISE ROUNDTABLE MEETINGS
MARCH 12, 2014; MAY 14, 2014; AND MAY 13, 2015

Name	Representing	Meeting(s) Attended
Denny Schneider (Chairman)	Westchester Neighbors Association	March 12, 2014 and May 13, 2015
Robert Ackerman	Westchester Neighbors Association	May 14, 2014
Carl Jacobson (Vice Chairman)	City of El Segundo	March 12 and May 14, 2014; May 13, 2015
Blake LaMar	City of Palos Verdes Estates	March 12 and May 14, 2014; May 13, 2015
Matt Waters	City of Rancho Palos Verdes	March 12, 2014
So Kim	City of Rancho Palos Verdes	May 14, 2014
Petra Schneider	City of Rancho Palos Verdes	May 13, 2015
Jessica Duboff	City of Los Angeles – Council District 11	May 13, 2015
June Lehrman	City of Culver City	May 13, 2015
Chris Arriola	City of Monterey Park	May 13, 2015
Olivia Valentine	City of Hawthorne	May 13, 2015
Jim Withrow[1]	City of Inglewood	March 12 and May 14, 2014; May 13, 2015
JoAnn Williams	United Homeowners Association	March 12, 2014
Danna Cope	LAX Area Advisory Committee	May 14, 2014 and May 13, 2015
Yvonne Bedford	Ladera Heights Civic Association	May 14, 2014 and May 13, 2015
John Bailey	Southeast Torrance Homeowners' Association	March 12, 2014 and May 14, 2014
Martin Rubin	North Westdale Neighborhood Association	March 12 and May 14, 2014; May 13, 2015
Rolan Morel	Federal Aviation Administration	March 12, 2014 and May 13, 2015
Faviola Garcia	Federal Aviation Administration	May 14, 2014
Scott Tatro	LAWA	March 12 and May 14, 2014; May 13, 2015
Kathryn Pantoja	LAWA	March 12 and May 14, 2014; May 13, 2015
David Chan	LAWA	March 12 and May 14, 2014; May 13, 2015
Georgiana Streeter	LAWA	March 12, 2014 and May 14, 2014
James Duke	LAWA	March 12, 2014
Lisa Trifiletti	LAWA	May 14, 2014
Rene Spencer	LAWA	May 13, 2014

NOTE:
[1] Mr. Withrow became an official member of the LAX/Community Noise Roundtable on May 13, 2015.

SOURCE: Los Angeles World Airports, July 2015.

Copies of correspondence letters between LAWA and the FAA related to the NEM Update are provided in **Appendix E**. Published notices, sign-in sheets, handouts, and presentation materials for the public workshops are provided in **Appendix F**. Also provided in Appendix F are copies of the presentation slides used for the LAX/Community Noise Roundtable briefings, presentation slides from the FAA ATCT staff briefing, and a list of agencies and individuals that were invited

to attend the public workshops and to submit comments regarding the Draft Noise Exposure Map Report. Comments received during the preparation of the updated noise exposure maps and responses to those comments are provided in **Appendix G**.

1.9 Report Organization

This report provides updated NEMs for LAX and the technical documentation required under 14 CFR Part 150. The remainder of this report is organized as follows:

Chapter 2: Summary of the aviation activity forecast for the Airport.

Chapter 3: Description of the existing Airport and currently planned improvements that could affect future noise exposure; existing and planned land use in the Airport environs; and zoning controls available to the local jurisdictions to achieve land use compatibility.

Chapter 4: Summary of the aircraft noise analysis, including the assumptions and inputs used to develop the existing and future NEMs.

Chapter 5: Delineation of the NEMs and documentation of the number of households, people and noise-sensitive land uses exposed to aircraft noise.

Appendix A: Glossary of Terms

Appendix B: Summary of Land Use Plans and Zoning

Appendix C: Radar Flight Tracks for Los Angeles International Airport

Appendix D: Annual Average Day Aircraft Operations: 2015 and 2020

Appendix E: Correspondence and Consultation

Appendix F: Public Involvement and Outreach

Appendix G: Public Comments and Responses

Appendix H: Los Angeles International Airport Airspace Overview

Appendix I: Oversized Maps **[Provided under separate cover]**