Welcome!

Los Angeles International Airport
FAR Part 150 Noise Exposure Map Report Update

Public Information Workshop #1

May 2014
Los Angeles World Airports (LAWA) has initiated an update of the Federal Aviation Regulations (FAR) Part 150 Noise Exposure Map (NEM) report for LAX.

The Alta Environmental Team has been selected by LAWA to prepare the LAX Part 150 NEM report.

The goal is to submit updated noise exposure maps for LAX to the Federal Aviation Administration (FAA) in 2015.

LAWA is updating the LAX NEMs to ensure continued eligibility for sound insulation program funding.
LAWA developed noise exposure maps for LAX in 1981 as part of an Airport Noise and Land Use Compatibility (ANCLUC) Study.

The FAA typically uses the airport’s future year noise exposure map to determine eligibility for federal funding of noise mitigation programs (e.g., sound insulation).

The FAA is currently relying on the 2015 LAX Master Plan Alternative D Community Noise Equivalent Level (CNEL) contours for funding current LAX sound insulation programs.
Project Overview

• The NEM report must be prepared in accordance with the guidance provided in FAR Part 150

• FAR Part 150 includes detailed guidance and a checklist of the items that must be included in the FAR Part 150 NEM report

• For example, the NEM report must include aircraft noise exposure contours for the year of submission and a future year (typically five years in the future)
  
  – The Alta Environmental Team will produce NEMs for 2015 and 2020
This LAX NEM report update is not an airport master plan update, FAR Part 161 Study, FAR Part 150 Noise Compatibility Program Update, and is not related to other ongoing studies.

The project team will develop an aircraft operations and fleet mix forecast for FAA’s review and approval.

The project team will consider completed and ongoing planning and environmental studies to ensure noise modeling assumptions are reflective of existing conditions and anticipated conditions in 2020.

The 2020 NEM must be based on “reasonably foreseeable” assumptions regarding future operations at LAX.
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Existing Facilities
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Existing Land Uses in the Study Area
The LAX NEM Report Update Will:

- Quantify existing and future aircraft noise exposure levels in the vicinity of LAX
- Provide the FAA and LAWA with a new set of NEMs to assess future noise mitigation needs

During The LAX NEM Report Update LAWA Will Not:

- Develop or recommend noise abatement or noise mitigation measures designed to minimize aircraft noise impacts
- Determine the sound insulation program boundaries
- Identify properties that are eligible for sound insulation
FAR Part 150 Terminology

Noise Exposure Contours
A noise exposure contour identifies areas of equal noise exposure around an airport. Noise exposure contours are similar to contours on topographic maps which show areas of equal elevation.

Noise Exposure Maps or NEMs
A noise exposure map is a map showing noise exposure contour lines (or footprints) which identify areas of specific noise levels around an airport. NEMs also include a graphic depiction of geographical features and land uses that surround an airport.
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FAR Part 150 NEM Update Process

INVENTORY
- Airport Operations
- Aircraft Fleet Mix
- Flight Procedures
- Base Mapping
- Local Zoning
- Local Land Use
- Population Data
- Define Key Issues
- Detailed Study Design
- Develop Study Database

AVIATION NOISE
- Flight Tracking
- Noise Monitoring
- Noise Contours: Existing/Future
- Noise Modeling

COMMUNITY IMPACTS
- Land Use
- Population
- Institutions
- Growth Risk
- Noise Impacts: Existing/Future

NTP

NEM Submittal to FAA

Los Angeles World Airport
### Project Schedule

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MONTHS</th>
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<tbody>
<tr>
<td>Community Outreach Program</td>
<td>1</td>
</tr>
<tr>
<td>Develop Comprehensive Database of Existing Conditions</td>
<td>2</td>
</tr>
<tr>
<td>Assemble Information for Noise Contour Development</td>
<td>3</td>
</tr>
<tr>
<td>Noise Contour Development</td>
<td>4</td>
</tr>
<tr>
<td>Prepare and Submit NEM Report</td>
<td>5</td>
</tr>
<tr>
<td>FAA Coordination</td>
<td>6</td>
</tr>
<tr>
<td>LAWA Coordination</td>
<td>7</td>
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</tbody>
</table>

- **FAA Review Period (180 days) Begins**
- **Acceptance of NEM Update**

**Legend:**
- Green Circle: Project Kickoff Meeting
- Blue Circle: Meeting with FAA Personnel
- Yellow Triangle: Public Information Workshops
- Blue Square: LAWA Board Meeting
- Orange Circle: LAX Community Noise Roundtable Meeting
- Orange Arrow: Six Month Duration
Who Can Regulate Airport Noise?

• Federal Aviation Administration
  – Controls aircraft while in flight
  – Responsible for controlling noise at its source (i.e., aircraft engines)
  – Certifies aircraft and pilots

• Airport Proprietors/LAWA
  – Limited authority to adopt local restrictions
  – Responsible for capital improvement projects and infrastructure

• Local Governments and States
  – Promote compatible land use through zoning
  – Require real estate disclosure
  – Mandate sound-insulating building materials
## The Decibel Scale

<table>
<thead>
<tr>
<th>Normal Numbers</th>
<th>Decibels</th>
<th>Common Sounds</th>
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<tbody>
<tr>
<td>100,000,000,000,000</td>
<td>110</td>
<td>Pneumatic Hammer at 6 Feet</td>
</tr>
<tr>
<td>10,000,000,000,000</td>
<td>90</td>
<td>Night Club</td>
</tr>
<tr>
<td>1,000,000,000,000</td>
<td>80</td>
<td>Vacuum Cleaner</td>
</tr>
<tr>
<td>1,000,000,000</td>
<td>70</td>
<td>Normal Speech</td>
</tr>
<tr>
<td>100,000,000</td>
<td>60</td>
<td>Quiet Residential neighborhood</td>
</tr>
<tr>
<td>10,000</td>
<td>50</td>
<td>Whisper</td>
</tr>
<tr>
<td>1,000</td>
<td>40</td>
<td>Threshold of Pain</td>
</tr>
<tr>
<td>100</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>20</td>
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<tr>
<td>1</td>
<td>10</td>
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<td>0.1</td>
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### Sample CNEL Values

<table>
<thead>
<tr>
<th>CNEL</th>
<th>Outdoor Location</th>
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<tbody>
<tr>
<td>90</td>
<td>Apartment Next to Freeway</td>
</tr>
<tr>
<td>80</td>
<td>3/4 Mile From Touchdown at Major Airport</td>
</tr>
<tr>
<td>70</td>
<td>Downtown with Some Construction Activity</td>
</tr>
<tr>
<td>70</td>
<td>Urban High Density Apartment</td>
</tr>
<tr>
<td>60</td>
<td>Urban Row Housing on Major Avenue</td>
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<tr>
<td>60</td>
<td>Old Urban Residential Area</td>
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<tr>
<td>50</td>
<td>Wooded Residential</td>
</tr>
<tr>
<td>40</td>
<td>Agricultural Crop Land</td>
</tr>
<tr>
<td>40</td>
<td>Rural Residential</td>
</tr>
<tr>
<td>30</td>
<td>Wilderness Residential</td>
</tr>
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</table>

### DECIBELS COMMON SOUNDS NORMAL NUMBERS

- **Threshold of Pain**: 130
- **Near Jet Engine**: 140
- **Night Club**: 120
- **Vacuum Cleaner**: 80
- **Normal Speech**: 60
- **Quiet Residential neighborhood**: 40
- **Whisper**: 20
- **Threshold of Hearing**: 0

### DECIBELS COMMON SOUNDS NORMAL NUMBERS

- **Los Angeles International Airport**: 100
- **FAR Part 150 Noise Exposure Map Report Update**
# Day-Night Average Sound Level (DNL) and Community Noise Equivalent Level (CNEL)

<table>
<thead>
<tr>
<th>DNL</th>
<th>CNEL</th>
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<tbody>
<tr>
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### Aircraft Noise Levels

#### Single Events (SEL or Lmax)

- **Duration = 10 secs**
- **Duration = 5 secs**
- **Lmax = 64 dBA**
- **SEL = 73 dB**
- **Lmax = 70 dBA**

#### One Hour of Events (Hourly LEQ)

- **Aircraft Flyovers**
- **LEQ Noise Level**

(Time axis not drawn to scale. Aircraft events are shorter than shown here)

#### One Day of Events (CNEL)

- **1 Event/Day SEL 114.4 dBA = CNEL 65**
- **10 Events/Day SEL 104.4 dBA = CNEL 65**
- **100 Events/Day SEL 94.4 dBA = CNEL 65**

(10-dB Nighttime Penalty)

**Los Angeles World Airports**

**ALTA**

**Environmental Services**

**ESA**

**Los Angeles International Airport**

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