



LOUISVILLE
MUHAMMAD ALI
INTERNATIONAL AIRPORT

Louisville International Airport Noise Exposure Map Update

Community Noise Forum Meeting
September 25, 2023



LOUISVILLE NEM UPDATE

Consultant Project Team



- Project Management
- Noise Lead
- Documentation



- Aviation Forecast
- Land Use Verification



- Aviation Forecast Review



- Community/CNF Liaison

LOUISVILLE NEM UPDATE

Meeting Agenda

1 What is an NEM Update?

2 NEM Update Goals

3 Roles and Responsibilities

4 History of Part 150 at SDF

5 Public Participation Process

6 Aircraft Noise Terminology

7 Supplemental Analysis

8 Noise Modeling Overview

9 Process Summary

10 Schedule

WHAT IS A NOISE EXPOSURE MAP UPDATE?

Airport Noise Compatibility Planning

REGULATION

Title 14 of the Code of Federal Regulations Part 150 (14 CFR Part 150 or “Part 150”), “Airport Noise Compatibility Planning”

- Voluntary FAA-defined process for airport noise studies
 - Over 250 airports have participated
- Sets national standards for analysis
- Provides access to FAA funding of some approved measures

TECHNICAL ELEMENTS

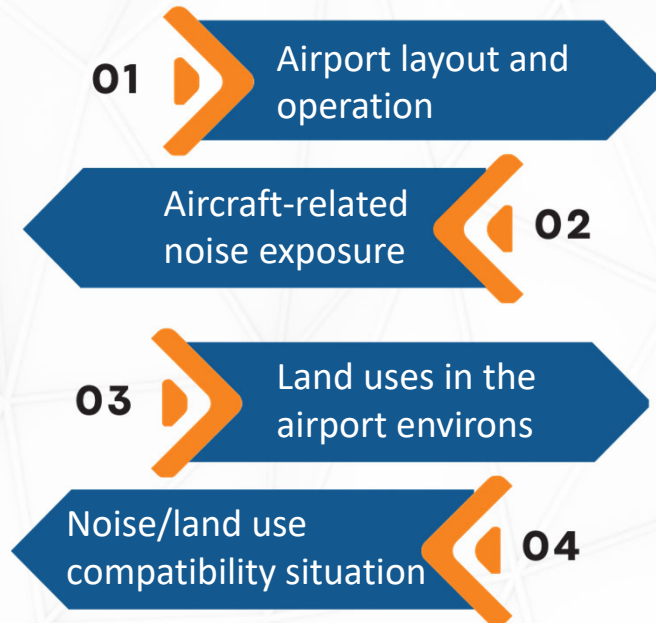
Part 150 has two technical elements:

1. Noise Exposure Map (NEM)
 - This project is an NEM update only
2. Noise Compatibility Program (NCP)
 - This project will not update the NCP

WHAT IS A NOISE EXPOSURE MAP UPDATE?

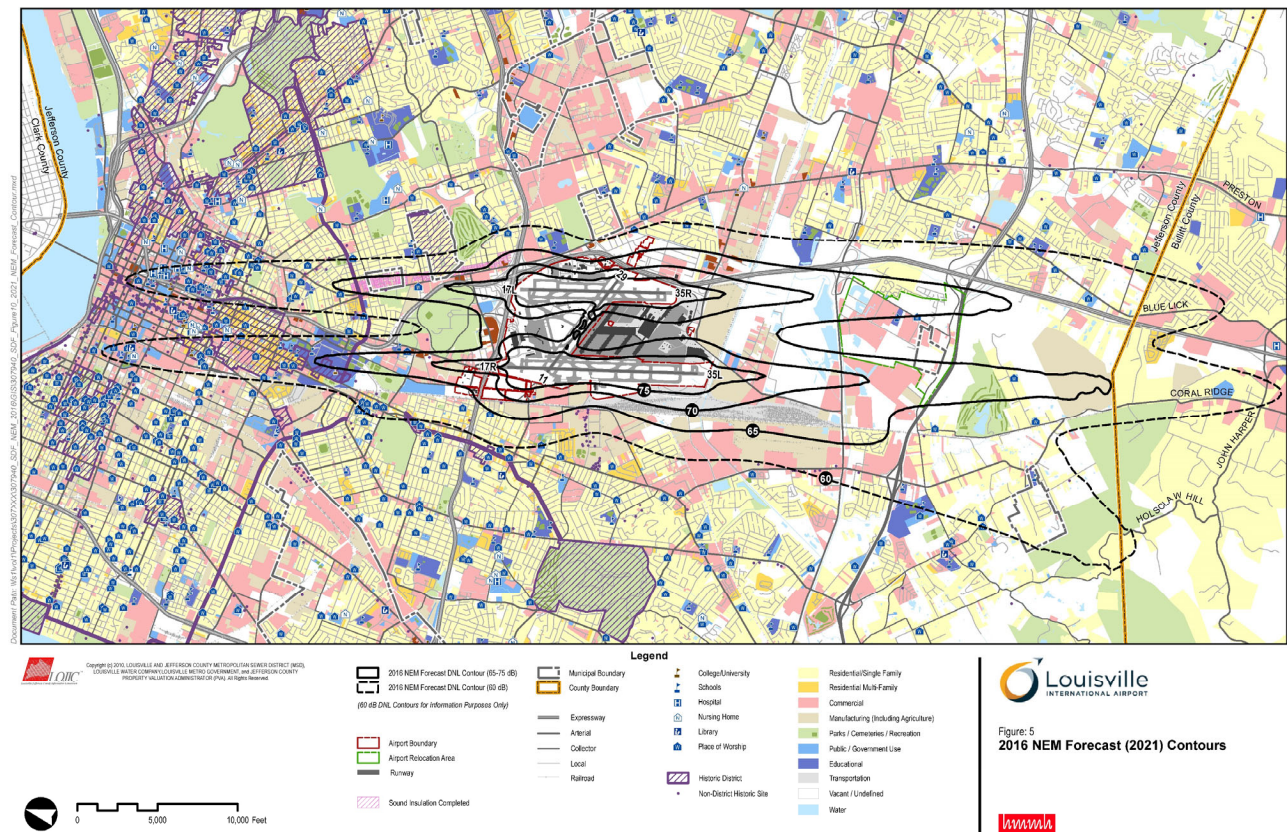
Noise Exposure Map (NEM)

The NEM describes:

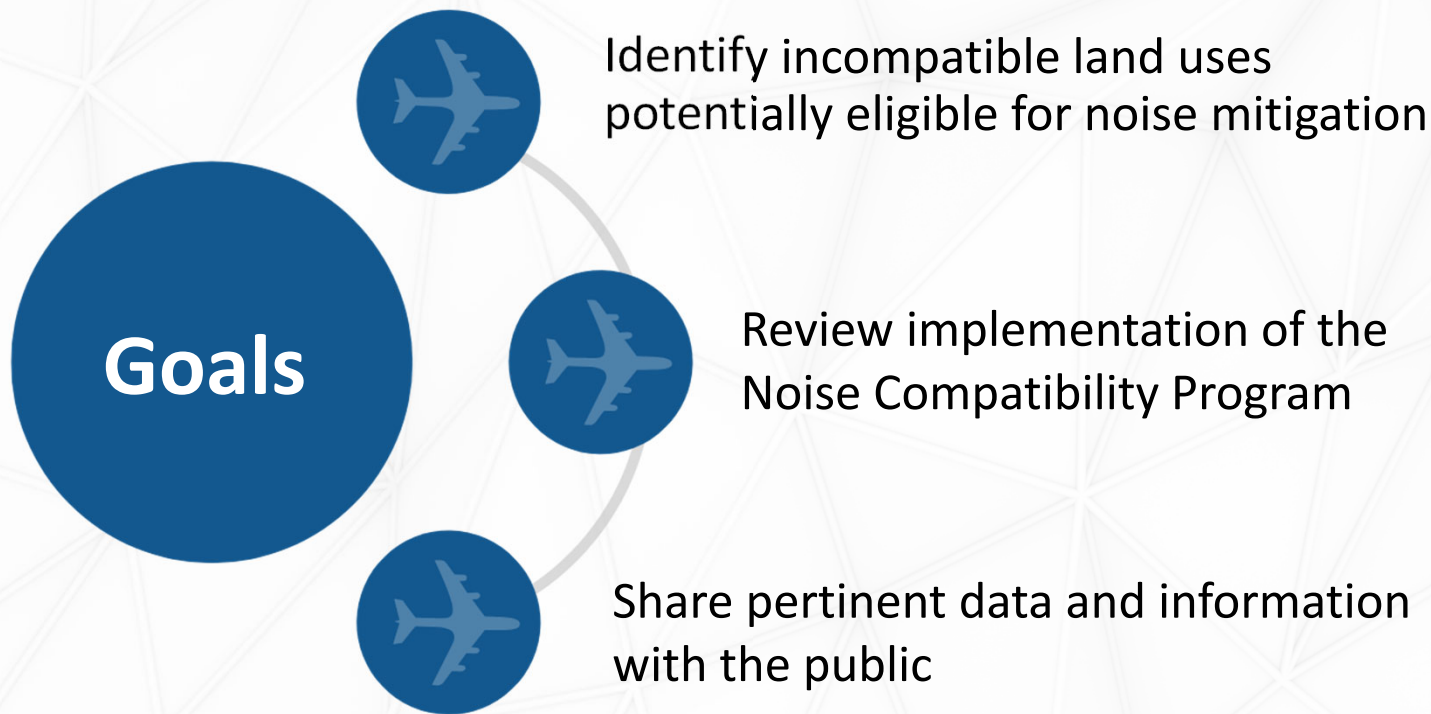


- NEM must provide information for two timeframes
 - Year of submission (2024)
 - Five-year forecast (2029)
- FAA [checklist](#) identifies NEM requirements and documentation
- Annual average daily noise exposure is depicted using contour lines on a map

FAA-Accepted 2021 Forecast NEM for Louisville International Airport (prepared in 2016)



NEM Update Goals



Note: *FAA requires that Noise Exposure Maps reflect existing and/or forecast conditions at all times – thus the need to update them on a regular basis.*

ROLES AND RESPONSIBILITIES

Airport Noise Compatibility

Stakeholder	Responsibilities
Federal government (FAA)	Regulate source noise emissions, air traffic control, funding, and safety oversight
Airport operators	Plan and implement noise compatibility measures
State and local government	Compatible land use planning and control
Aircraft operators	Develop cockpit procedures, and fleet improvements
Air travelers and shippers	Bear the costs (through ticket tax)
Current and potential residents	Seek to act in an informed manner

ROLES AND RESPONSIBILITIES

Louisville NEM Update

LRAA

- Project sponsor
- Contracts with consultant team
- Certifies the NEM is accurate and complete
- Submits NEM Update to the FAA for acceptance

FAA

- Provides federal funding for NEM Update
- Accepts NEM update
- Certification that the documentation meets federal regulations and guidelines

Consultant Team

- Overall project management, documentation, and outreach
- Aircraft noise analysis
- Land use compatibility analysis
- Aviation forecast and airfield analysis

Community Noise Forum

- Review study inputs, assumptions, analyses, documentation, etc.
- Input, advice, and guidance related to NEM development

Public

- Provide input on study during comment period
- Review public draft documents

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History of Part 150 at SDF

Original NEM/NCP
with 1991 base case
and 1997 future
conditions

NCP approved in
November 1994

NEM accepted in
October 1993

Supplemental
NCP approved in
November 1995

NEM/NCP update
conducted in 2003,
for 2003 base case
and 2008 future
conditions

NEM accepted in
November 2003

NCP approved in
May 2004 for 20
measures in full
and 8 measures in
part (out of 42
recommended)

Record of Action
issued August 2009
approving 3
additional measures

NEM updated in
2011, for 2011
base case and
2016 future
conditions

NEM accepted
in April 2011

NEM updated in
2016, for 2016
base case and
2021 future
conditions

Current NEM
Update

Public Participation Process

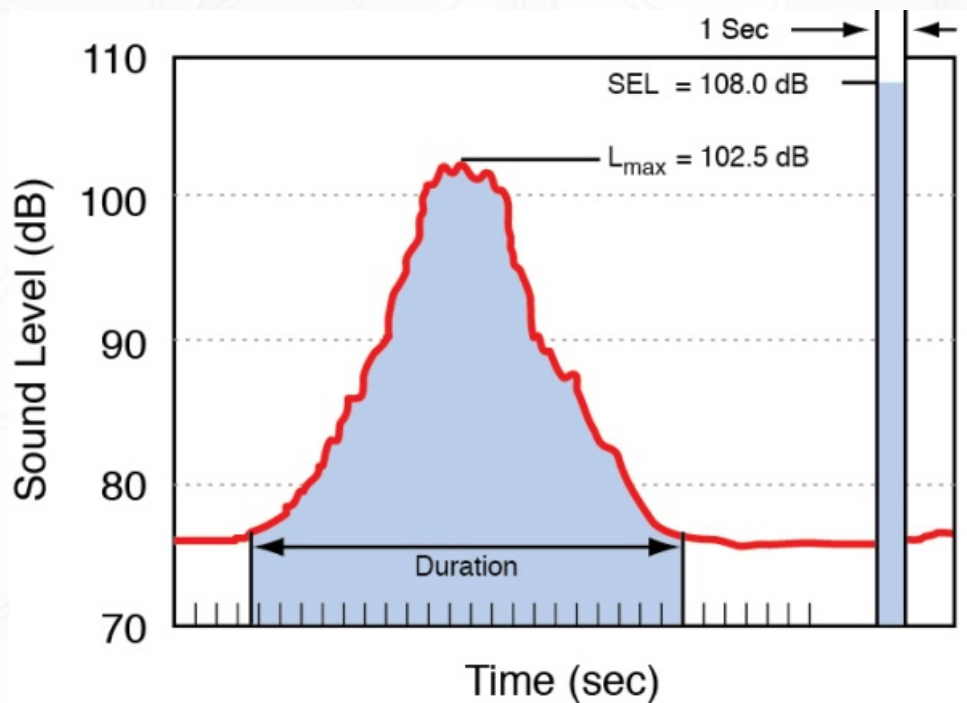
Provide public with an opportunity for review of the Draft NEM Update and associated documentation

Request comments from public on Draft NEM Update

Hold a public workshop:

- Provide overview of Draft NEM Update
- One-on-one time with NEM Update project team
- Information sharing
- Education

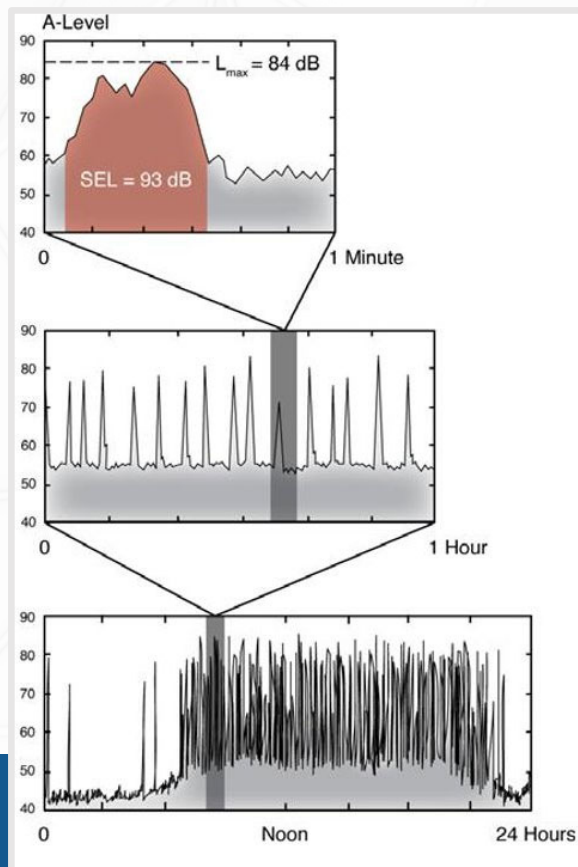
Aircraft Noise Terminology



- Noise levels can be expressed many ways, including but not limited to:
 - Maximum Noise Level (L_{max})
 - Sound Exposure Level (SEL)
- Day-Night Average Sound Level (DNL)

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Aircraft Noise Terminology – DNL



- FAA requires use of DNL in a Part 150 study
 - DNL represents noise as it occurs over a 24-hour period, with 10 decibels (dB) added to noise events occurring at night (10 p.m. to 7 a.m.).
 - Nighttime operations are weighted to represent the greater sensitivity for most people by nighttime sounds.
- Part 150 guidelines consider all land uses compatible below 65 dB DNL

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Supplemental Analysis

- FAA requires land use analysis where DNL is 65 dB or greater; LRAA will continue evaluating noise out to 60 the DNL 60 contour
- LRAA will consider supplemental noise metrics (other than DNL) as appropriate
- LRAA has requested flight track density plots

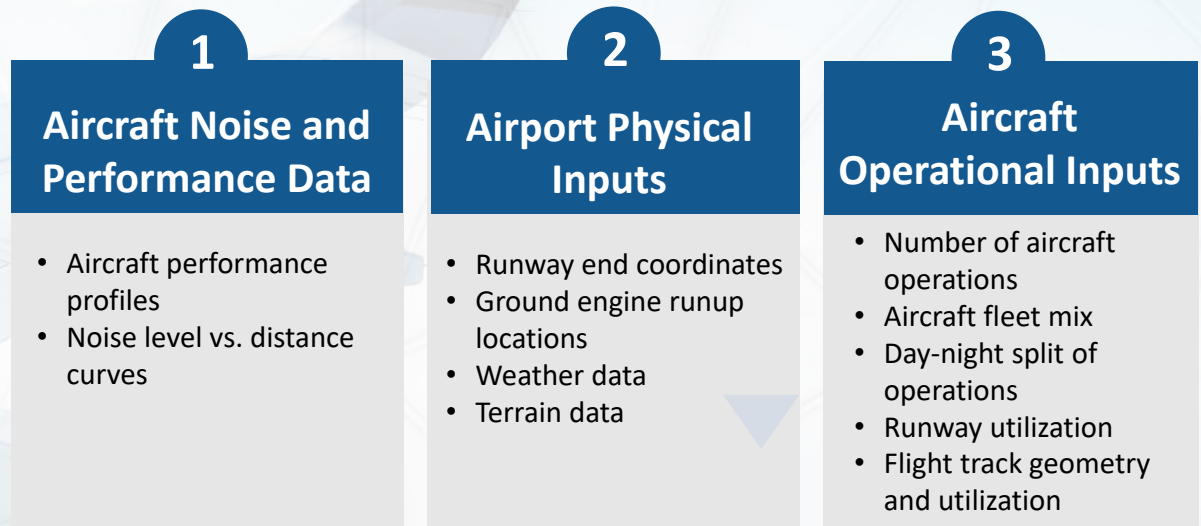
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Noise Modeling Overview

Use of FAA's Aviation Environmental Design Tool (AEDT) noise modeling software is required

- The most current version at study's commencement
 - Version 3e (<https://aedt.faa.gov>)

AEDT requires noise model input data in three categories:



NEM Update Process Summary

1. Collect data and information
2. Develop five-year forecast of aircraft operations
3. Prepare noise model inputs
4. Run the noise model and assess land use compatibility
5. Prepare draft Noise Exposure Map (NEM) documentation
6. Publish NEM documentation for public review and hold public workshop
7. Submit NEM to the FAA for review and acceptance

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NEM Update Schedule

Phase		Expected Completion
No.	Description	
1	Project Initiation	September 2023
2	Data Collection and Forecast	January 2024
3	Prepare Draft Noise Exposure Maps	May 2024
4	Public Comment Period and Workshop	June 2024
5	Prepare and Submit Noise Exposure Maps	July 2024



Thank you!