Airlake Airport ADVISORY COMMISSION

ALAAC

Regular Meeting

June 26, 2025

REMINDER:
Please
silence your phone
to avoid interruptions
and
mute yourself
when you are not
speaking.

ALAAC PURPOSE AND GOALS

GOAL:

This Commission is formed to further the general welfare of the community and the Airlake Airport, a public airport in the City of Lakeville, County of Dakota, State of Minnesota, through minimizing or resolving problems created by the aircraft operations at the airport.

PURPOSE:

1. The Commission shall advise the community and the Metropolitan Airports Commission with regard to all matters affecting the Airlake Airport, the classification, rules and regulations supplied to the operation of the Airport and the development of lands adjacent to the Airport.

2. The Commission shall cooperate with the Metropolitan Airports Commission staff in reviewing matters affecting the use and control of the Airlake Airport.

3. The Commission shall make its recommendations to the Metropolitan Airports Commission regarding any proposal affecting the use or operations of Airlake Airport.

Agenda

- Welcome & Introductions
- Agenda Discussion
- Consent Items
- Public Comment
- Businesss Items
- Information Items
- ALAAC Member Announcements
- Review Meeting Schedule
- Adjourn

Welcome
&
Introductions

Members & Coordinators

Community/Public Representatives	Airport User Representatives	Metropolitan Airports Commission
John Bermel, Co-Chair Lakeville	Tom Fitzhenry, Co-Chair Airport User	Yodit Bizen, MAC Commissioner
Tina Goodroad, Lakeville	Patrick Moynihan, Airport User	Sam Seafeldt, Technical Advisor
Donovan Palmquist, Eureka	Adam Forsberg, Airport User	Jennifer Lewis, Community Relations
Pending, Eureka	Dan Wolbert, Airport User	
Erin Laberee, Dakota County	Krista Jech, Chamber of Commerce	
Holly Bernatz, Farmington	Steven Guetter, Airport User	

Consent Items:

- Approve Minutes
- Aircraft Noise Complaints & Operations

Public Comment

Members of the public are welcome to share their remarks with the Commission

Please state your name and address

Limit remarks to 3 minutes

Business Items

Noise 101: Overview of Aircraft Noise Assessment

SOUND VS. NOISE

SOUND

- A physical phenomenon consisting of minute vibrations, which can be sensed by the human ear by traveling through a medium such as air or water.

NOISE

- Unwanted sound
- Temporary
- Annoyance is subjective

PERCEPTION OF SOUND

- How people perceive sound depends on several measurable physical characteristics of the sound:
  - Intensity (volume)
  - Frequency (pitch)
  - Changes in Sound Level
  - Rate of Change in Level

VARIABLES EFFECTING RESPONSE

- Emotional Variables
  - Activity at the time
  - Attitude about the environment
  - Sensitivity to noise
  - Belief about the effect of noise on health
  - Feeling of fear associated with the noise
  - Feelings about the necessity or preventability of the noise
- Physical Variables
  - Type of neighborhood
  - Time of day
  - Season
  - Predictability of the noise
  - Control over the noise source
  - Length of time exposed to noise

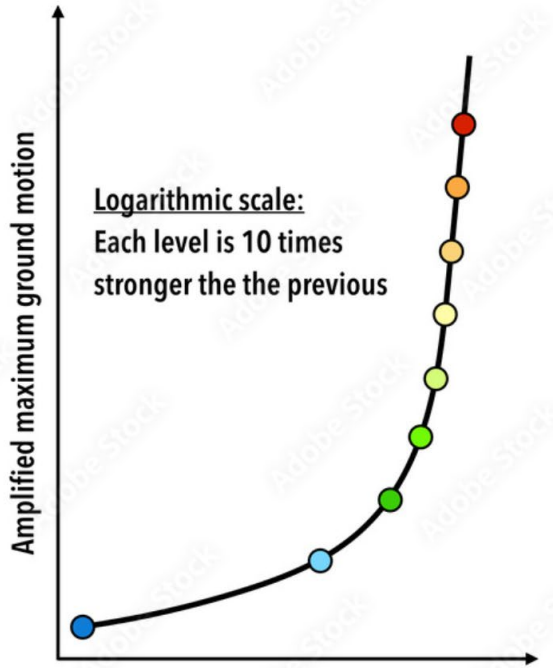
DECIBELS

- Decibels (dB) are the logarithmic unit of measurement on the loudness scale

- The decibel scale is logarithmic, not linear
  - Two sounds of the same level are not perceived to be twice as loud
  - In fact, two sounds of the same sound level equals a 3 dB increase
  - 10 dB increase is a doubling of acoustical energy

Richter scale

Level	Description	Occurrence
>9.0	Great	1 per 10 years
8.0-8.9	Great	1 per year
7.0-7.9	Major	10 per year
6.0-6.9	Strong	100 per year
5.0-5.9	Moderate	1,000 per year
4.0-4.9	Light	10,000 per year
3.0-3.9	Minor	100,000 per year
2.0-2.9	Minor	One million per year
1.0-1.9	Micro	Millions per year

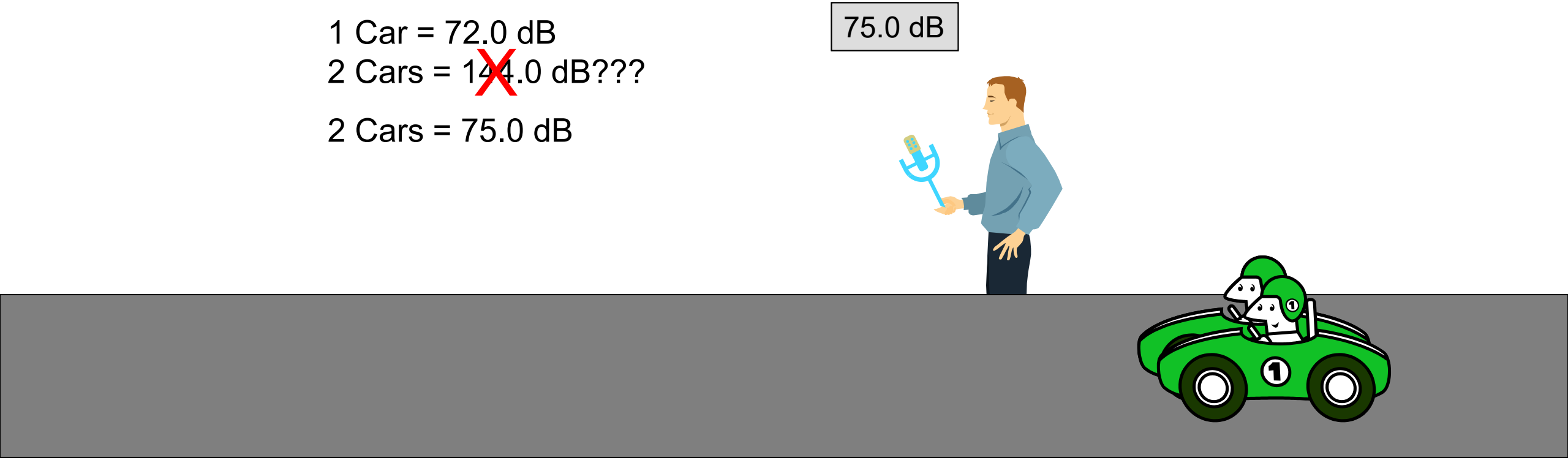


DECIBEL ADDITION

1 Car = 72.0 dB

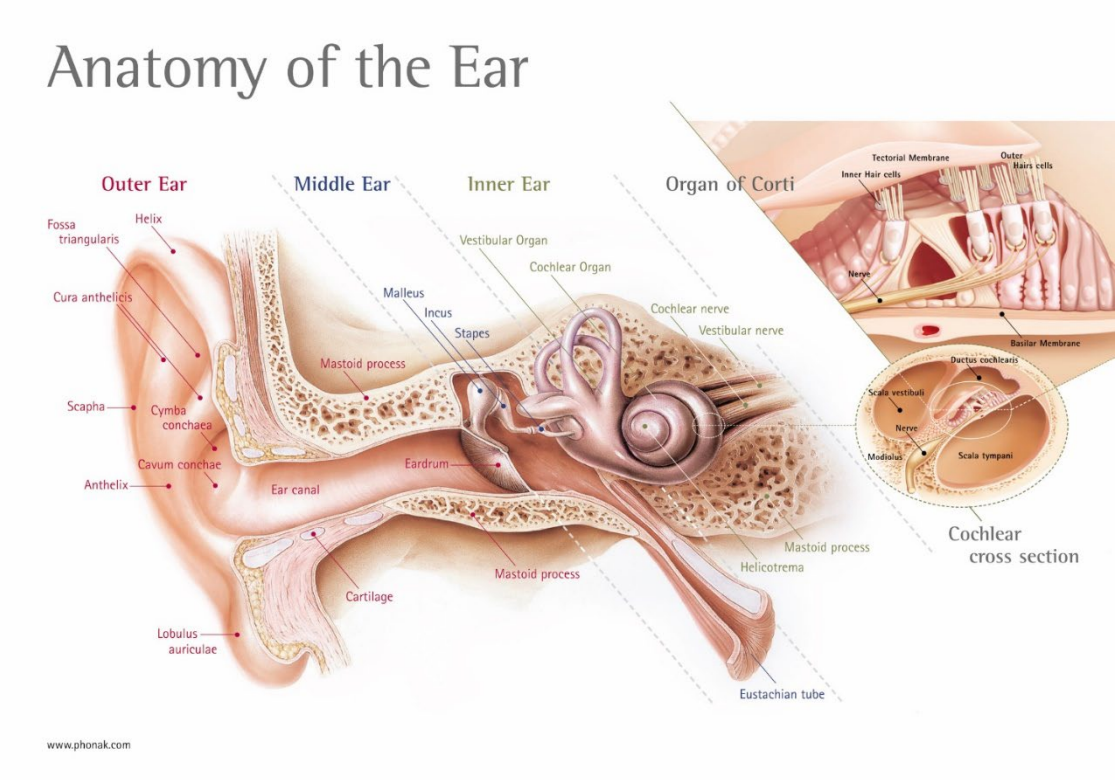
2 Cars = 144.0 dB???

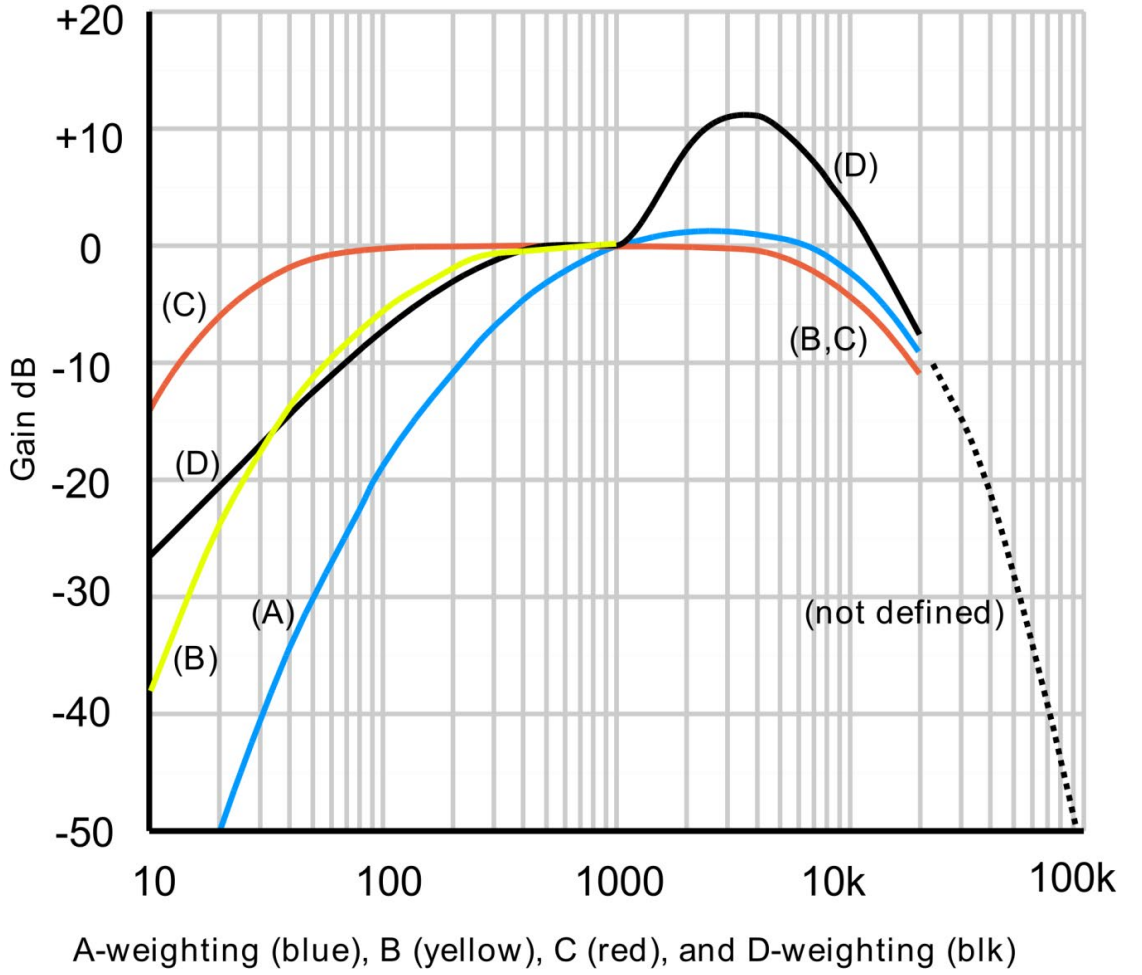
2 Cars = 75.0 dB

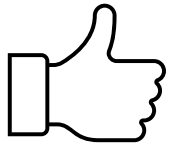


DECIBEL WEIGHTING

A-weighting most closely relates to range of the human ear

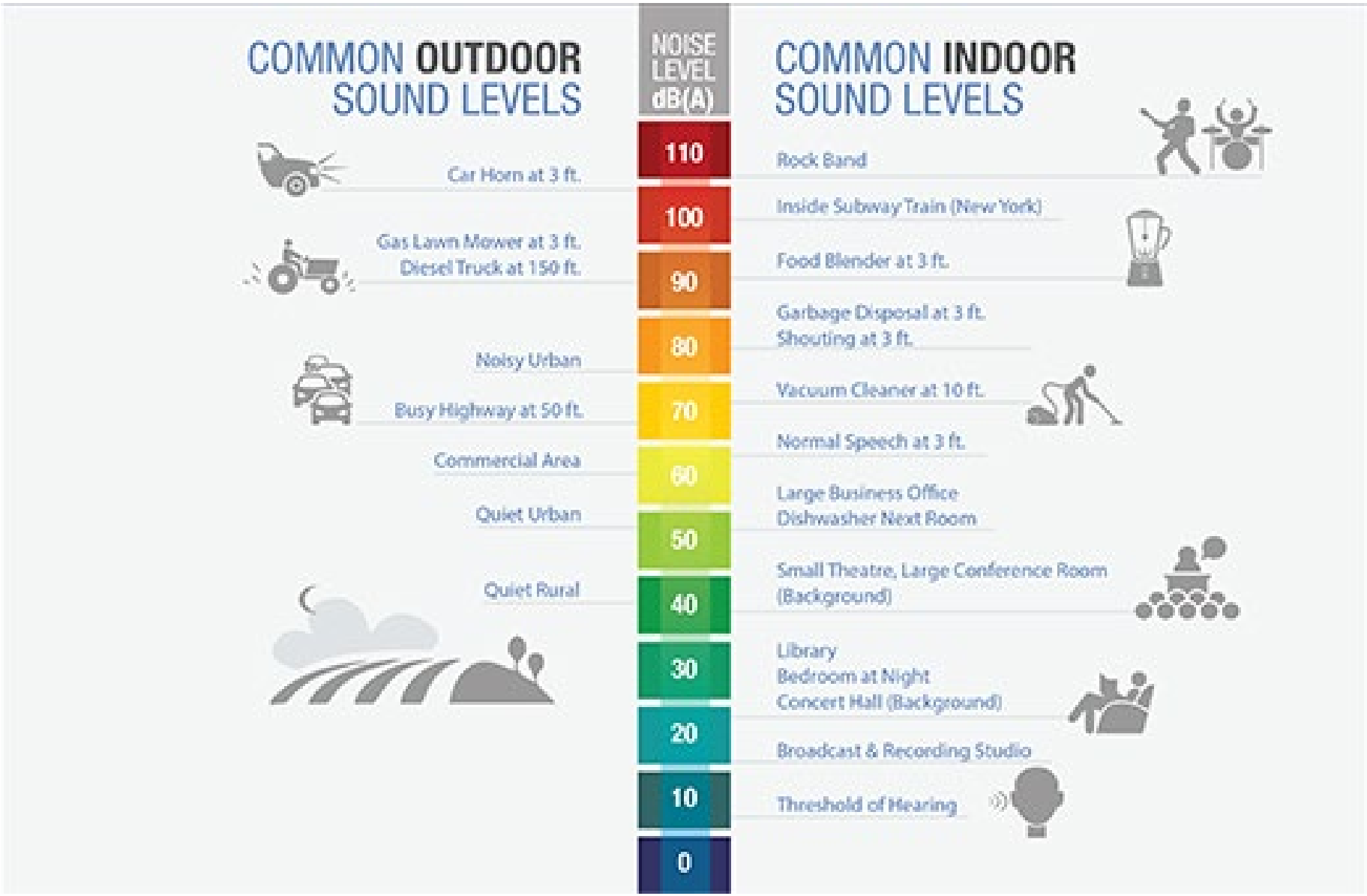




“RULES OF THUMB” 

- Smallest detectable change by the human ear is +/- 1 dB (laboratory setting)
- +/- 3 dB is noticeable to most people
- Adding two like sounds adds 3 dB increase
- Double or half the airport operations = +/- 3 dB on average
- +/- 10 dB sounds twice as loud or twice as quiet
- Double or half the distance between a sound and the receiver equates to +/- 6 dB

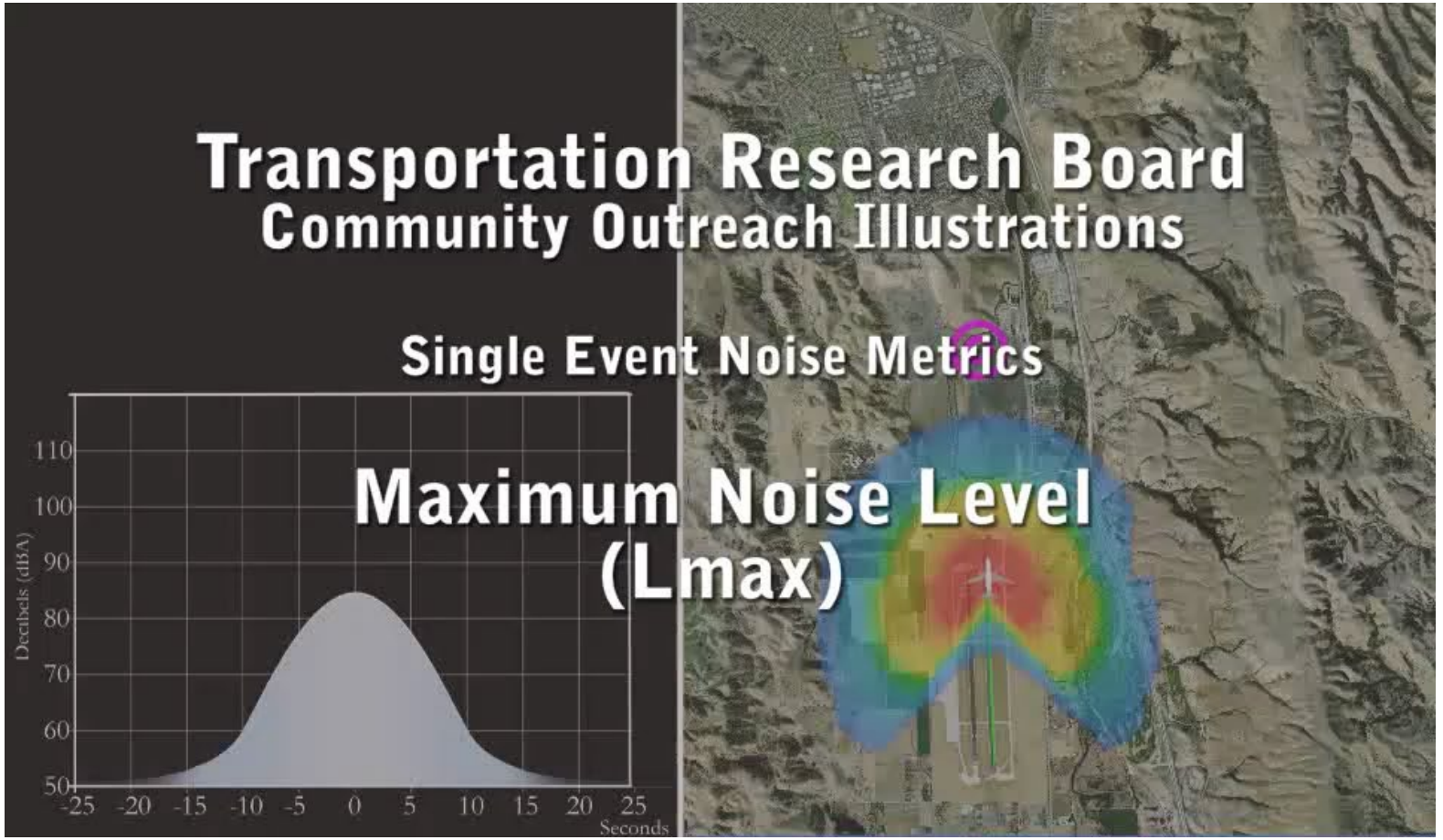
COMPARISON OF SOUND



NOISE METRICS

- L_{max} - Maximum noise level
- L_{eq} – Equivalent sound level
- SEL - Sound exposure Level
- DNL - Day-night average sound level
- Other Metrics
  - TA – Time above threshold
  - NA – Number of events above

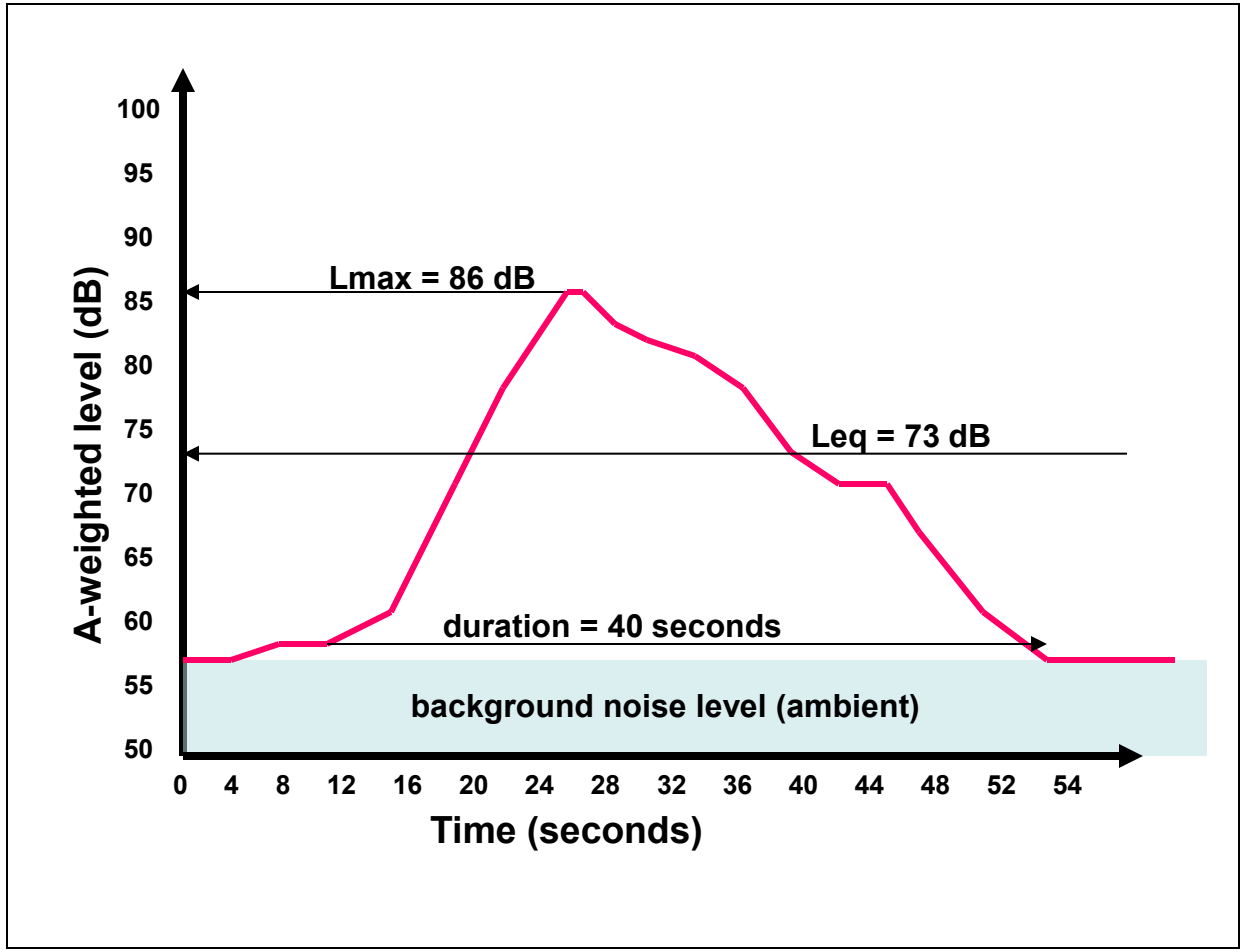
L_{MAX} – MAXIMUM SOUND LEVEL



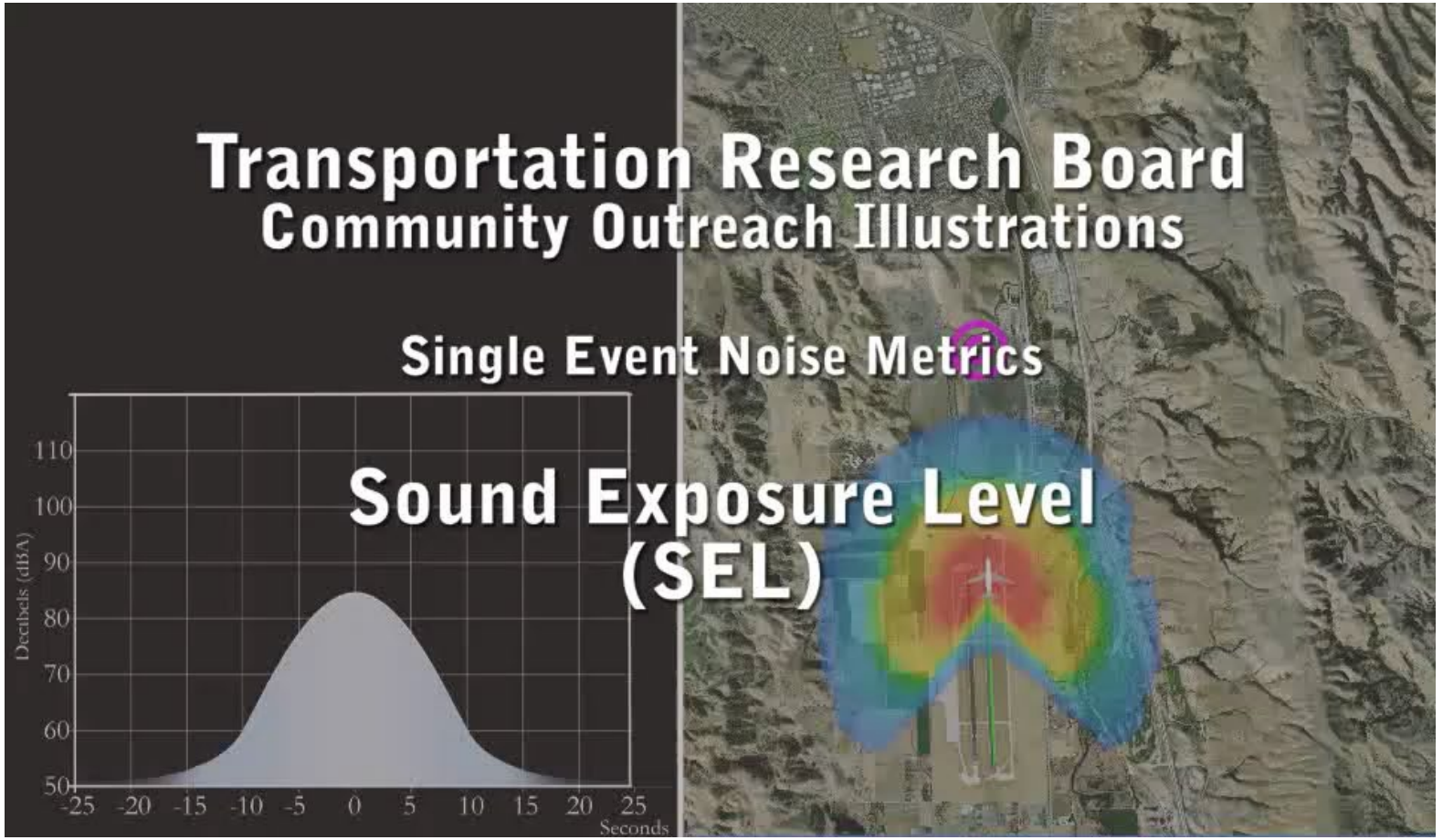
L_{EQ} – EQUIVALENT SOUND LEVEL

- Leq is the average sound level over any specified period
  - For an aircraft event, time period will depend on the duration of the event
  - For a set time period (e.g., 1-hour, 8-hour, 24-hour)
  - For a time period that has special meaning (e.g., average noise for when school is in session during a day, only nighttime hours, etc.)

L_{EQ} – EQUIVALENT SOUND LEVEL



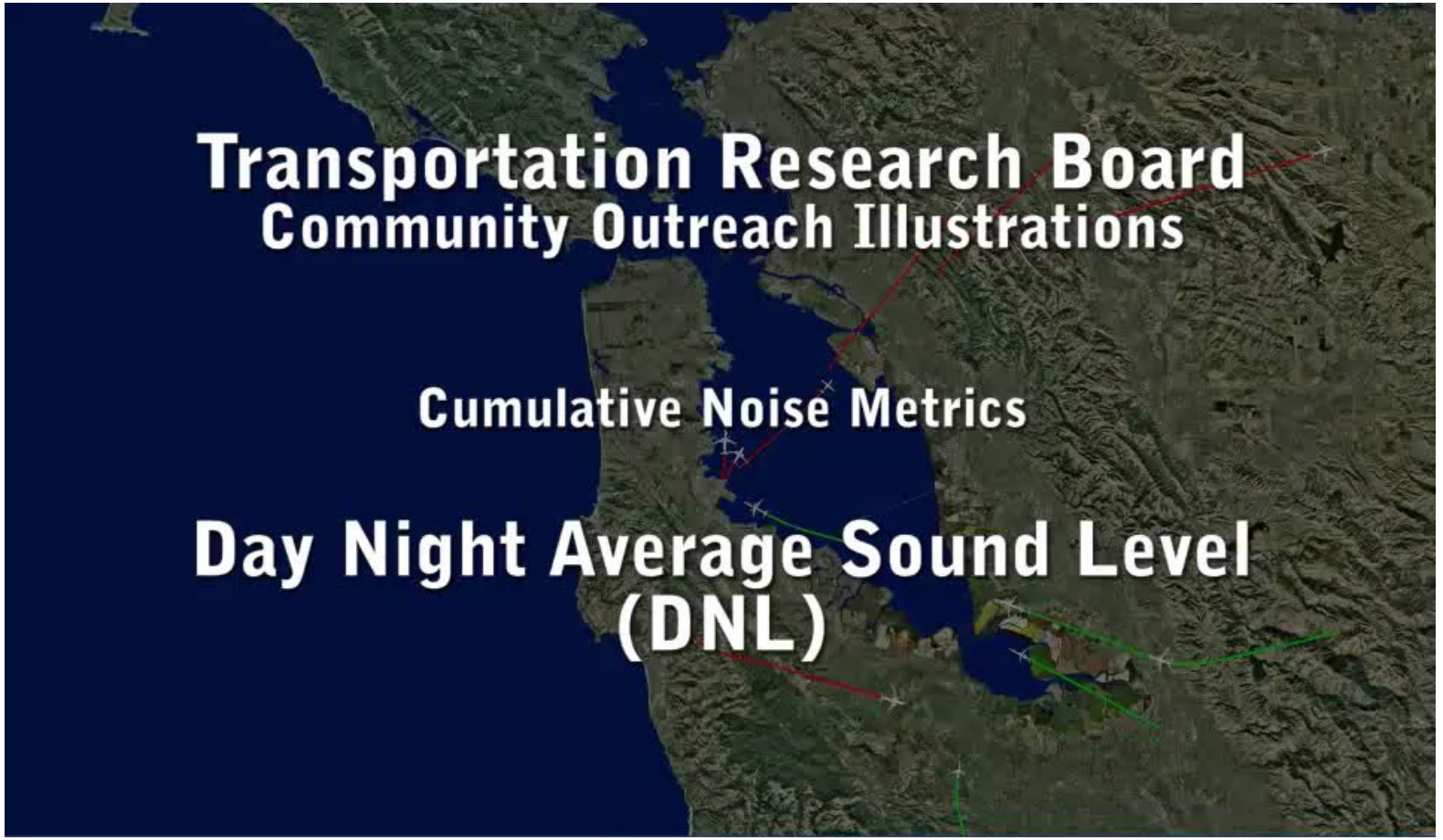
SEL – SOUND EXPOSURE LEVEL



SEL – SOUND EXPOSURE LEVEL

- SEL is a measure of the physical energy of the noise event which considers both intensity and duration
- SEL takes the energy of an event and compresses it into 1 second
- SEL allows different events to be compared
- SEL enables the addition of multiple events and the calculation of the average of multiple events

DNL – DAY-NIGHT AVERAGE SOUND LEVEL

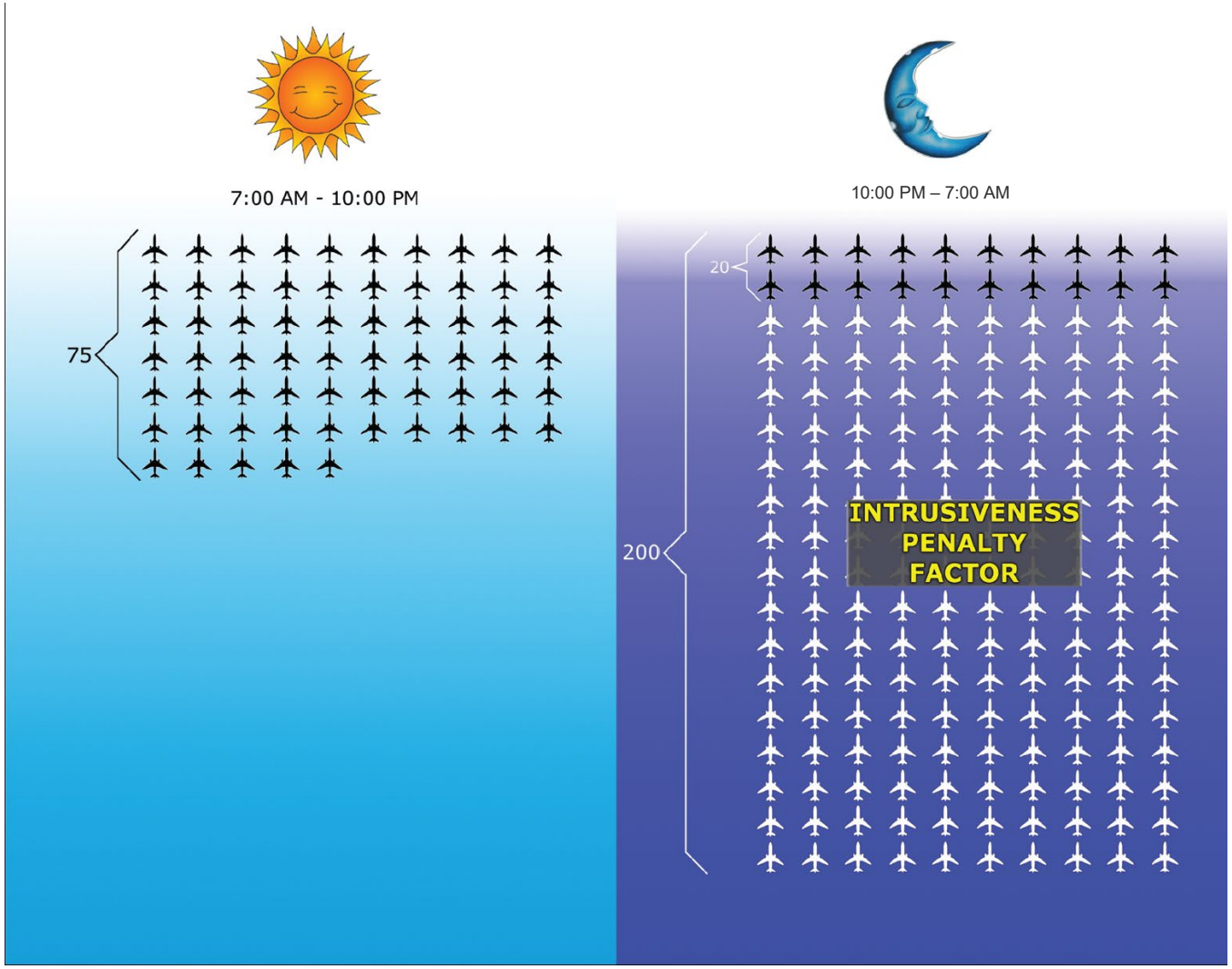


DNL – DAY-NIGHT AVERAGE SOUND LEVEL

- 24-hour time-averaged sound level with a 10 dB nighttime (10:00 pm-7:00 am) weighting
- DNL = Total Daytime Sound Energy + 10 times Total Nighttime Sound Energy divided by Time (in seconds)
- DNL is the metric of choice in the airport world. Its use is required to define noise contours of equal exposure for environmental studies (other metrics can be used)
- All Federal agencies have adopted DNL as the metric for airport noise analysis

DNL – DAY-NIGHT AVERAGE SOUND LEVEL

- Intrusive Penalty Factor during nighttime hours is due to lower ambient nighttime noise levels and typical sleeping hours.



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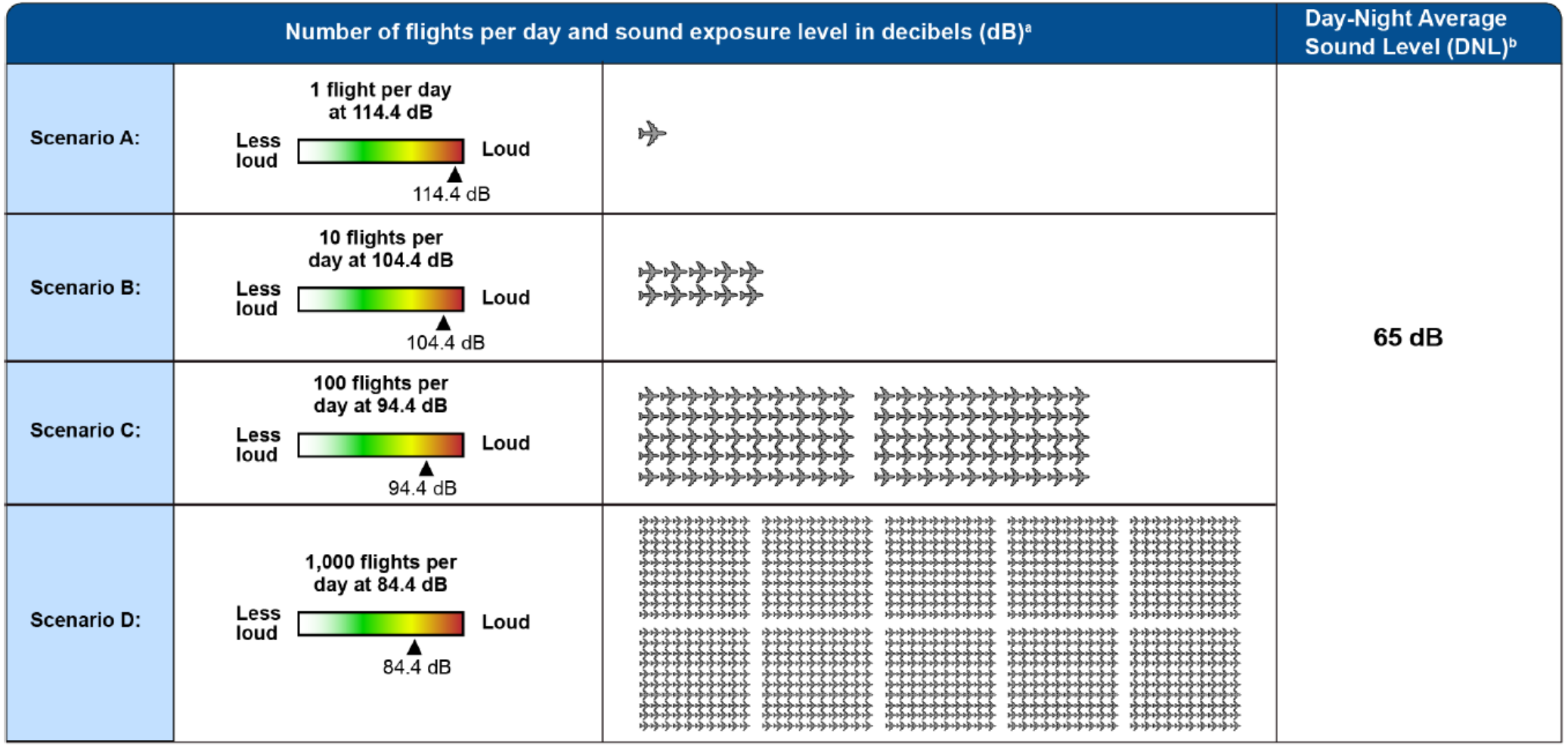


Source: GAO analysis of Federal Aviation Administration information. | GAO-22-105844

OTHER METRICS

- Time Above (TA)
  - TA represents the time (generally minutes or seconds) that noise is above a given level (e.g., 30 minutes/day above 80 dB)

- Number Above (NA)
  - NA represents the number of events above a specified noise level for a period of time (e.g., 30 aircraft events/day above 80 dB Lmax or SEL)

THRESHOLDS OF SIGNIFICANCE

- Three Thresholds of Significance to Consider [1]
    1. 65 DNL or greater
    2. 1.5 dB increase inside the 65 DNL[2]
    3. 3.0 dB increase outside the 65 DNL[2]

- ‘Significant’ impacts can translate into sound-insulation for a homeowner
- No matter where the threshold is set, there will always be people living just outside the area

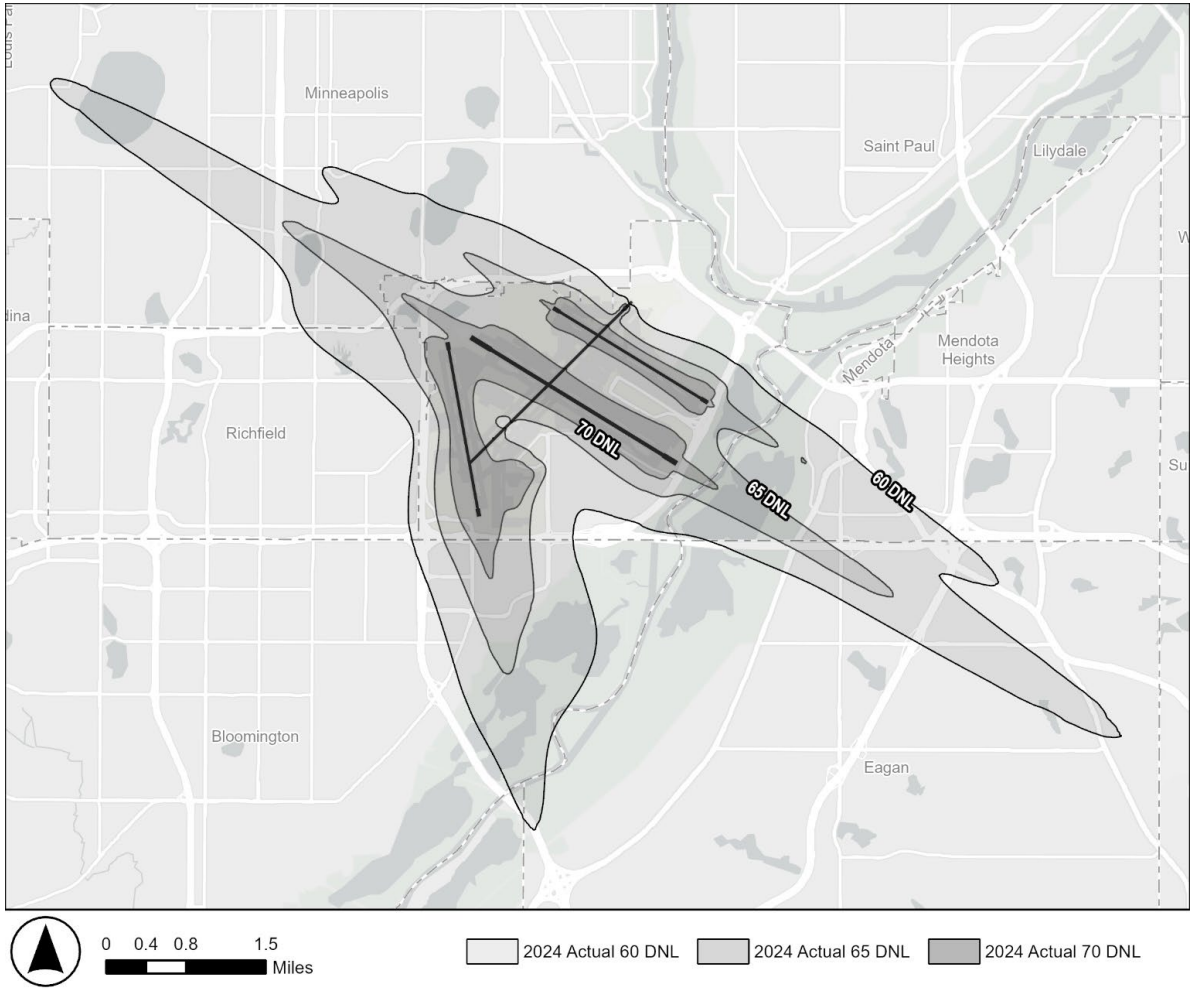
[1] FAA Order 1050.1F, Environmental Impacts: Policies and Procedures

[2] With project alternative compared to the no action alternative for the same timeframe

HOW DO WE MEASURE AIRCRAFT NOISE

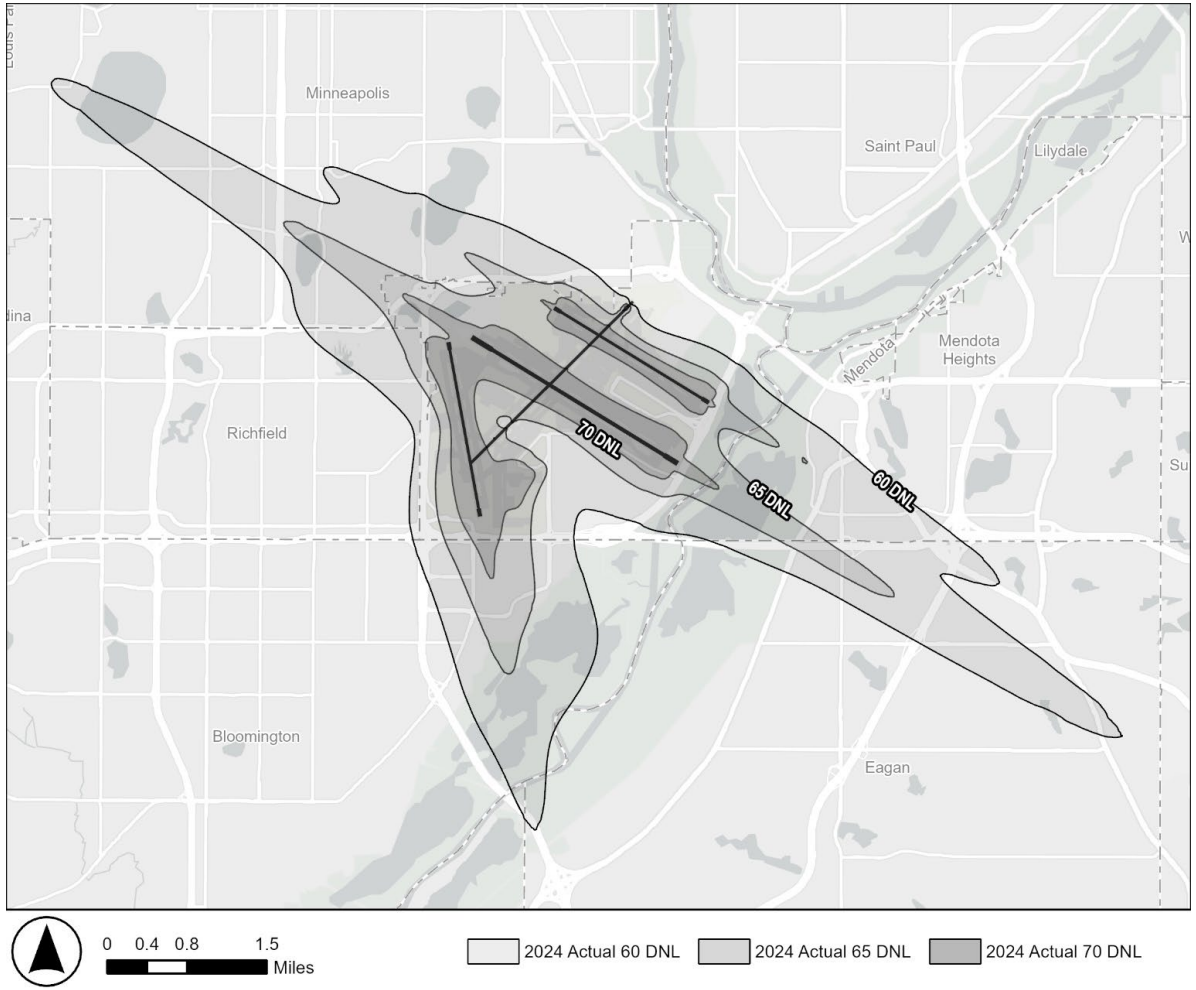
MEASURED

MODELED

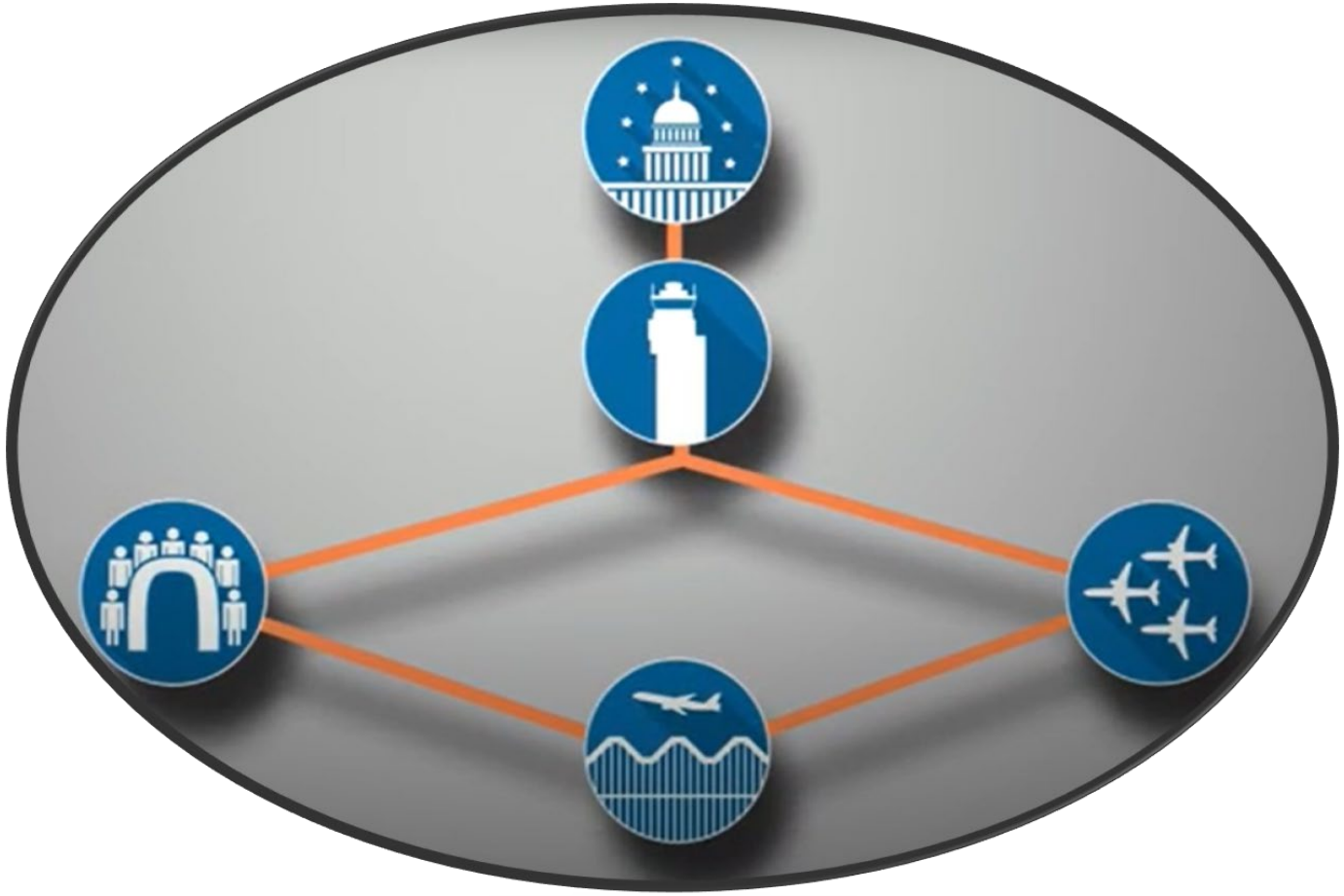


AVIATION ENVIRONMENTAL DESIGN TOOL (AEDT)

INGREDIENTS
Airport Information
Flight Tracks
Operation Levels
Types of Aircraft
Runway Use
Time of day
Aircraft Profiles
Engine Types



Aircraft Noise Basics: www.metroairports.org



Information Items

Pan-o-Prog: Behind the Scenes

Roadway Update

LVN CTAF Frequency Update

Airport Manager Update

AIRLAKE AIRPORT (LVN)
BY THE NUMBERS

168
based aircraft

106
leases

595
acres

8
pieces of equipment
maintaining the airfield and airport grounds

42,611
annual flight operations

$13.2M
economic output annually

$431,222
annual operating revenue

1
fixed based operator (FBO)

104
jobs supported

1
runway

4,098
total feet of runway pavement

212
runway and taxiway lights

1 Flight school • **No** Air Traffic Control Tower • **1** Full-time Airport Maintenance Staff • **1** Civil Air Patrol
1 EAA Chapter • In the community since **1966** • Owned by the MAC since **1981** • On-site public viewing area

Updated June 2025

Member Announcements

Next ALAAC Meeting:

September 11, 2025 and November 20, 2025


N41VT
Thank you!