



Seattle-Tacoma International Airport

Part 150 Study Technical Review Committee

Meeting #1 | June 10, 2024



Agenda

- Welcome and Introductions
- Purpose and Role of the Technical Review Committee (TRC)
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise and Modeling
- Overview of Land Use Compatibility
- Project Schedule
- Questions

Welcome and Introductions – Consultant Team

Environmental Science Associates (ESA)

- 700+ person environmental consulting firm
- Experience at more than 230 airports nationally
- Highly complex projects
 - LaGuardia Part 150
 - John F. Kennedy International Part 150
 - Fort Lauderdale-Hollywood International Part 150
 - Los Angeles International Part 150
 - Tampa International NEM Update
 - San Antonio NEM Update
 - San Francisco International NEM Update



Welcome and Introductions – Consultant Team



Barry Technologies, Inc.

Noise Monitoring



BridgeNet International

Visualization/Graphics



Diverse Vector Aviation Consulting (DVAC)

Air Traffic Control/Airspace



PRR, Inc.

Community Engagement



RICONDO

Ricondo

Forecasting, Airspace, Modeling, and Integration



VMC

Airspace/Flight Procedures

Welcome and Introductions – TRC

TRC Members

- Alaska Airlines – Lynae Craig
- Delta Airlines – **TBD**
- Des Moines – Jason Woycke
- Burien – Liz Stead
- Federal Way – Brian Davis
- Normandy Park – Nicholas Matz
- SeaTac – Zach Shields
- Tukwila – Neil Tabor

TRC Liaisons

- FAA
 - Western Service Center ATO – Joe Bert
 - Seattle ADO – **TBD**
 - SEAATCT – **TBD**
- Port of Seattle
 - Tom Fagerstrom
 - Ryan McMullan
 - Paris Edwards
 - Tom Hooper

Technical Review Committee

Purpose and Role of the TRC

- TRC members represent the interests of their organization and/or constituents
- The TRC's role is to support the SEA Part 150 Study
 - Review study assumptions
 - Provide technical feedback within the context of the Part 150 Study
 - TRC members are encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TRC members
- TRC members are expected to advise their organization and/or constituents of the TRC's discussions
- The Port will respect and consider the TRC's technical input, but retains responsibility for, and decision-making authority on, the SEA Part 150 Study

Role of the TRC Meeting Facilitator

- To ensure that the TRC meetings are effective, meetings will be facilitated by a professional meeting facilitator
- The meeting facilitator:
 - Is responsible for ensuring that the TRC meetings adhere to the meeting agenda
 - May extend or shorten the length of a discussion related to an agenda item at their discretion
 - As well as the Port, may cancel or suspend a TRC meeting due to disrespectful or disruptive behavior

TRC Charter and Participation Agreement

- The TRC Charter and Participation Agreement are included in today's meeting materials
- The Charter describes the role of the TRC and describes the conduct of the TRC meetings
- Please return the signed Participation Agreement to The Port
- The Port anticipates there will be 15 to 20 TRC meetings during the Study's duration
- TRC meetings will typically be held every other month
- TRC membership is voluntary and TRC members will not be compensated for their time

Airport Overview

SEA Overview

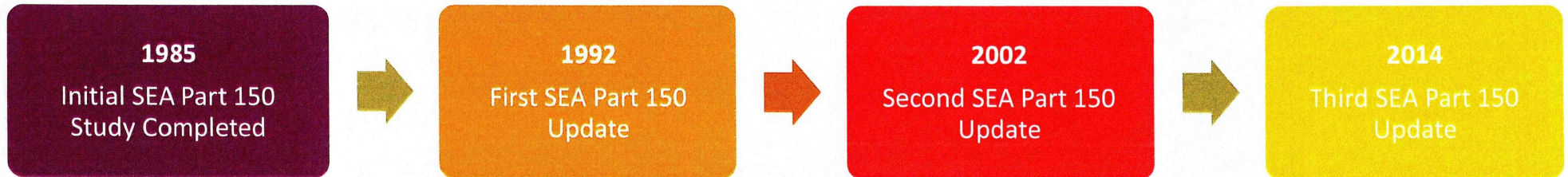
- SEA is one of the Pacific Northwest's leading economic engines
 - 151,400 jobs, including 87,300 direct jobs
 - \$7.1 billion in total personal income
 - \$22.5 billion in total business revenue
 - \$415 million in state taxes reflecting direct and secondary activities
- In 2023, the Airport had 422,500+ operations
- Served 50 million passengers in 2023
- Processed 417,000+ metric tons of cargo in 2023
- The only large hub airport in the PNW
- Non-stop flights to over 120 domestic and international cities



Part 150 History at SEA

The 14 CFR Part 150 process is the Airport Sponsor's mechanism to improve the compatibility between the Airport and surrounding communities

SEA's Part 150 Efforts Span Four Decades



Part 150 Study Overview

Regulations and Guidelines

- Interim Rule on Federal Aviation Regulations (FAR) Part 150, *Airport Noise Compatibility Planning*, issued in 1981 and finalized in 1985, later recodified as Title 14 Code of Federal Regulations (CFR) Part 150
- Issued in response to provisions contained in the Aviation Safety and Noise Abatement Act (ASNA) of 1979
- Establishes the methodology to be followed when preparing aircraft noise exposure maps and developing airport/airport environs land use compatibility programs
- Part 150 studies are voluntary, but...
- Part 150 studies must adhere to 14 CFR Part 150 guidelines to be considered and accepted and approved by FAA

Regulatory Framework

- Three core organizations are involved in aircraft operations at SEA:
 - **Federal Aviation Administration (FAA)** - Directs the safe movement of aircraft in the air and on the ground
 - **The Port:** Manages the airport, improves and maintains airport facilities; has no control over where aircraft fly
 - **Pilots:** The pilot in command has ultimate responsibility for the safe operation of his/her aircraft
- **Federal law**
 - Sets aircraft noise standards, prescribes operating rules, establishes the compatibility planning process, and limits airport proprietor's ability to restrict aircraft operations.
- **State law**
 - Sets forth compatibility planning guidelines and noise standards but aircraft are exempt.
- **Local noise ordinances**
 - Set noise standards and provide for compatible land use planning but aircraft are exempt

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/Port of Seattle**

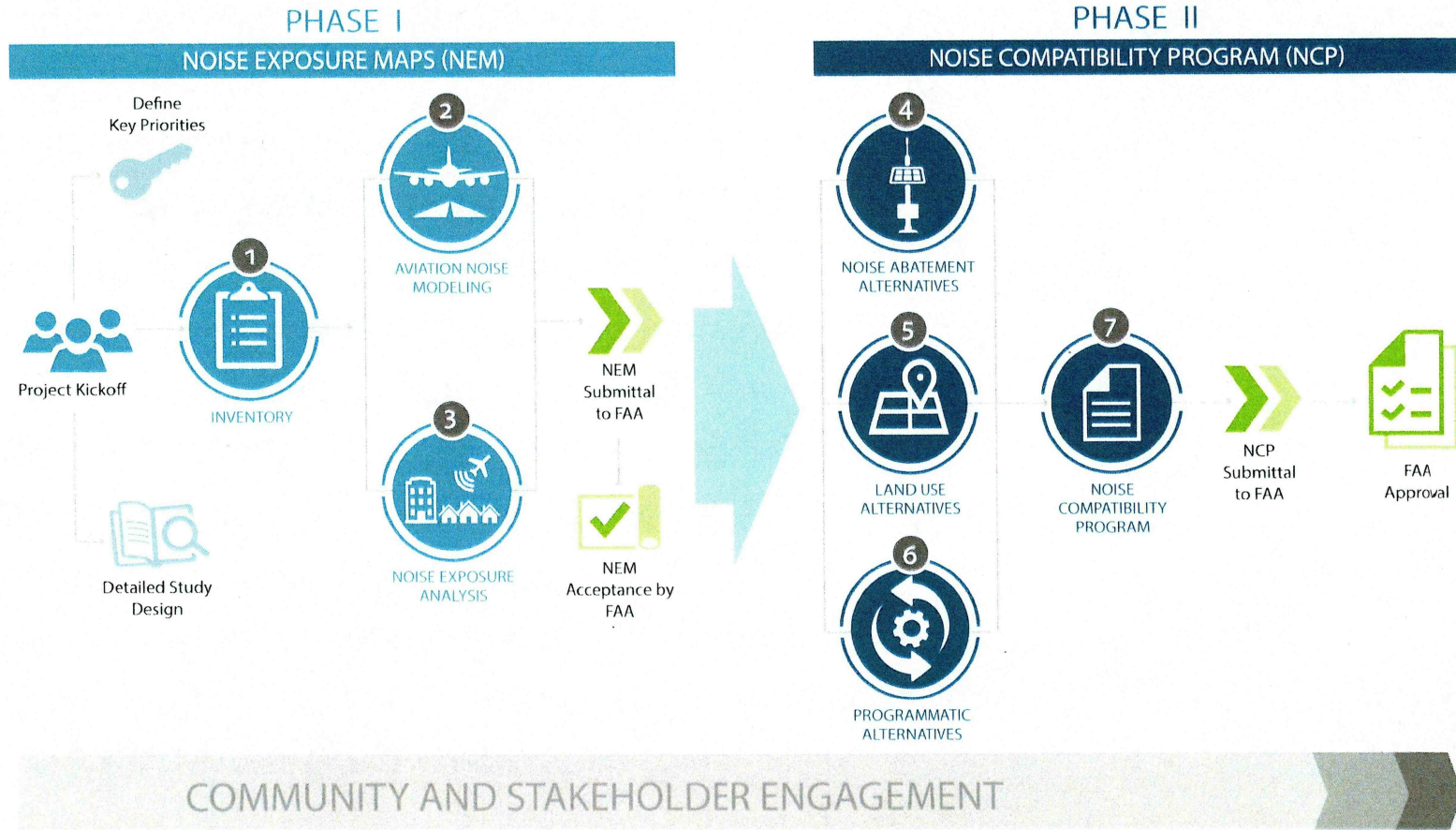
- Responsible for capital improvement projects and infrastructure.
- Can establish a "noise office", which services as a bridge between the Airport, FAA, and the community to minimize the impact of aircraft noise while ensuring the Airport operates safely and efficiently.
- Very limited authority to adopt local restrictions though can adopt and promote voluntary noise abatement measures

- **Local Governments and States**

- Promote compatible land use through zoning
- Can require real estate disclosure
- Can mandate sound-insulating building materials

**FEDERAL LAW TAKES PRECEDENCE
OVER STATE AND LOCAL
REGULATIONS**

Phases of a Part 150 Study



Part 150 Study Overview

- **Noise Exposure Map Report (NEM)**
 - Develop a comprehensive database of current conditions
 - Noise contour development and impact analysis
 - Prepare and submit NEM Report
- **Noise Compatibility Program (NCP)**
 - Identify and evaluate noise abatement alternatives
 - Identify and evaluate compatible land use alternatives
 - Identify and evaluate administrative measures
 - Prepare and submit NCP Report
- **Stakeholder Outreach Program**
 - Local Jurisdictions/Agencies
 - FAA
 - Public

Analyze, Evaluate, Educate

- Determine existing and future noise conditions in the vicinity of an airport
- Identify noncompatible uses
- Identify measures to improve compatibility
 - Evaluate the feasibility of possible flight procedure/land use changes
 - Submit locally-endorsed recommendations to the FAA regarding noise reduction measures
 - Approved measures may be eligible for Federal grant funding
- Educate communities on the Federal process and what can and cannot be done to address aircraft noise concerns

Part 150 Studies Must Adhere to 14 CFR Part 150 Guidelines to be Accepted and Approved by FAA

Key Priorities for this Part 150 Study

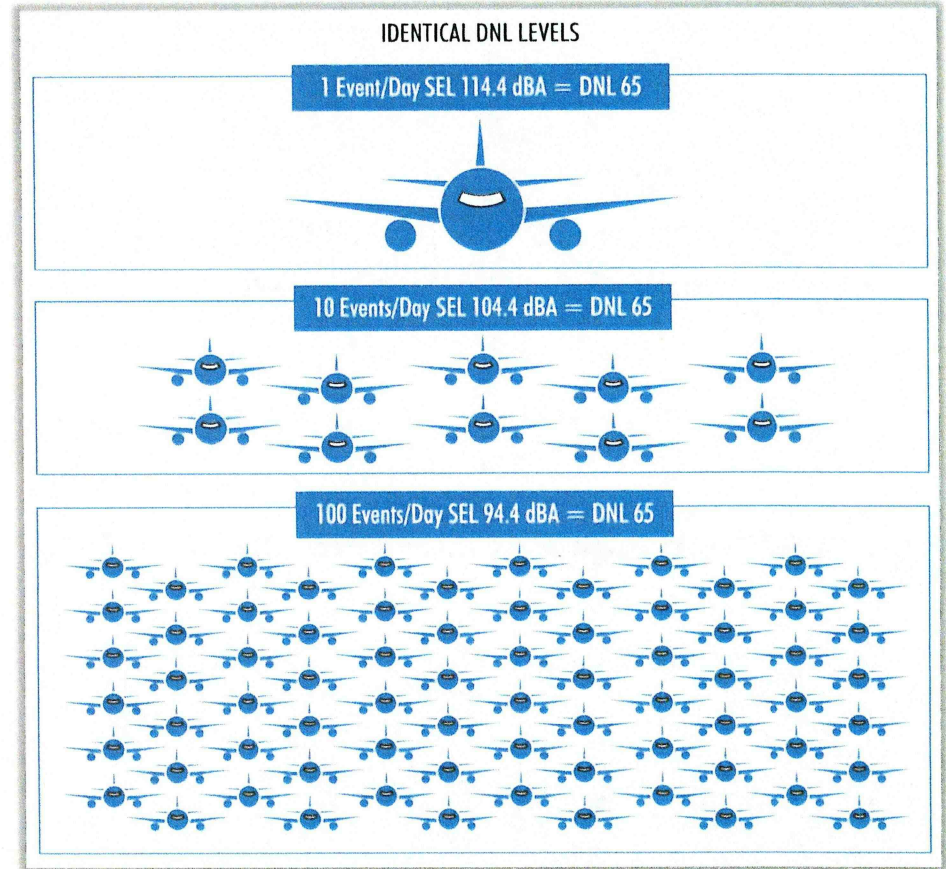
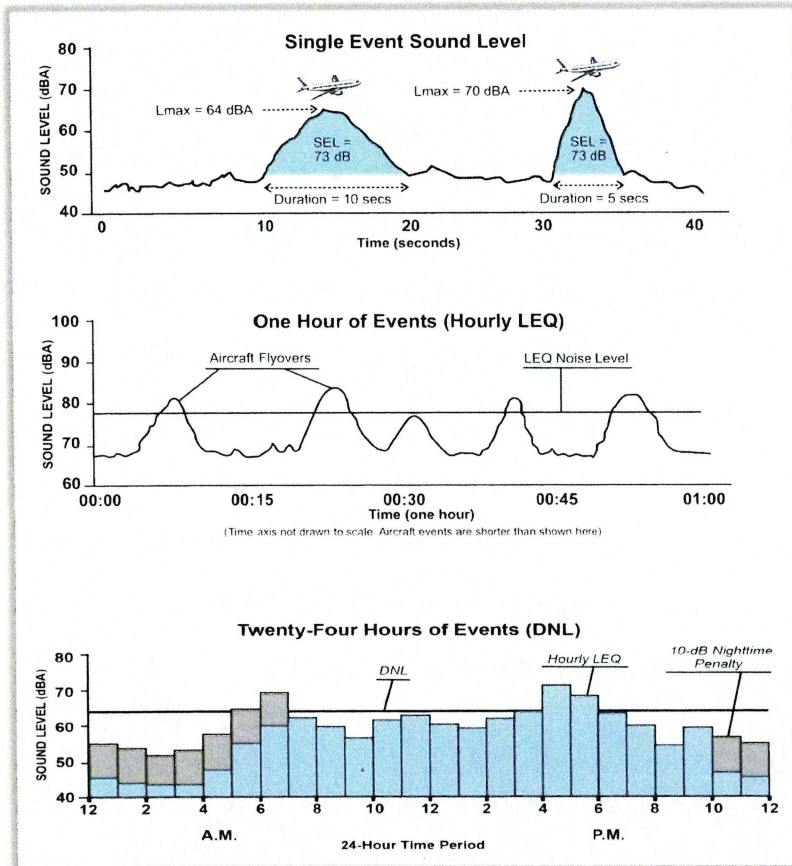
- Understanding community concerns about aircraft operations
 - Seasonal operations (north flow typically in summer)
 - Increase in annual aircraft operations
- Meaningful community engagement
- Communicating the Part 150 Study process and managing expectations
- Avoiding confusion about ongoing Port programs separate from the Part 150 Study:
 - Sustainable Airport Master Plan Near-Term Projects (SAMP NTP)
 - Ongoing Sound Insulation Program
 - Sound Insulation Repair and Replace Pilot Program

Noise and Noise Modeling

Introduction to Aircraft Noise

- Day-Night Average Sound Level (DNL)
 - 24-hour time weighted energy average noise level based on A-weighted decibels (dBA)
 - Noise occurring between 10 p.m. to 7 a.m. is penalized by 10 dB to account for the higher sensitivity to noise during nighttime hours and for the expected decrease in background levels that typically occur in the nighttime
 - FAA requires the use of DNL for airport noise analyses
 - Average Annual Day (AAD) aircraft noise exposure is calculated over a broad area and then depicted using contour lines of equal noise levels

Introduction to Aircraft Noise



Noise Modeling

- Aircraft noise modeling allows:
 - Calculation of noise exposure at any point
 - Depicting annual average aircraft noise exposure
 - Predicting future aircraft noise exposure
 - Assessing changes in noise impacts resulting from runway configuration changes or new runways
 - Assessing changes in fleet mix and/or number of operations
 - Evaluating operational procedures
- Aviation Environmental Design Tool (AEDT) replaced the Integrated Noise Model (INM) when it was released in 2015. The current version, AEDT 3f, will be used for the SEA Part 150 Study.

Noise Model Inputs

- The Amount of Noise Exposure is determined by:
 - Aircraft types
 - Stage length (AEDT input for takeoff weight based on distance to destination)
 - Number of average annual day operations
 - Nighttime weighting (1 nighttime operation = 10 daytime operations)
- The Noise Exposure Distribution is determined by:
 - Runway configuration and use
 - Flight track locations
 - Flight track use
- Other Factors
 - Meteorological conditions



**Aviation Environmental
Design Tool (AEDT)
Version 3f**

Land Use Compatibility

Land Use Compatibility

- 14 CFR Part 150 Appendix A, Table 1 provides noise and land use compatibility guidelines
- Considers levels below DNL 65 dB to be compatible with all land uses
- Allows for the adoption of appropriate local land use standards for land use compatibility planning purposes

The 14 CFR Part 150 process is the Airport Sponsor's mechanism to improve the compatibility between the Airport and surrounding communities

LAND USE	Yearly Day-Night Average Sound Level (Ldn) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Numbers in parenthesis refer to notes

KEY TO TABLE

SLUCM Standard Land Use Coding Manual

Y (Yes) Land Use and related structures compatible without restrictions

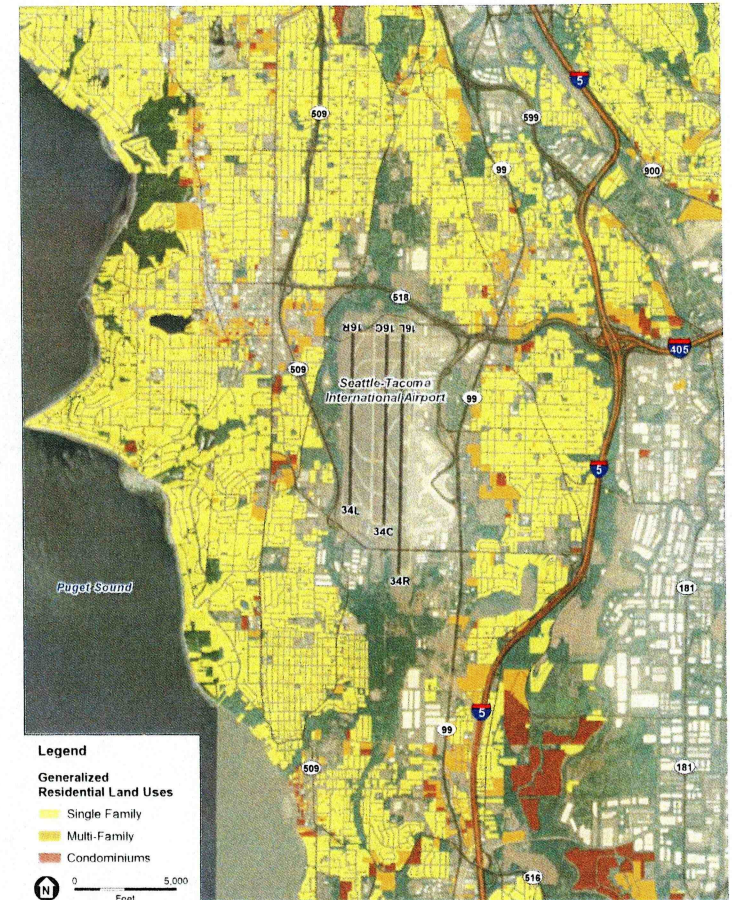
N (No) Land Use and related structures are not compatible and should be prohibited

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

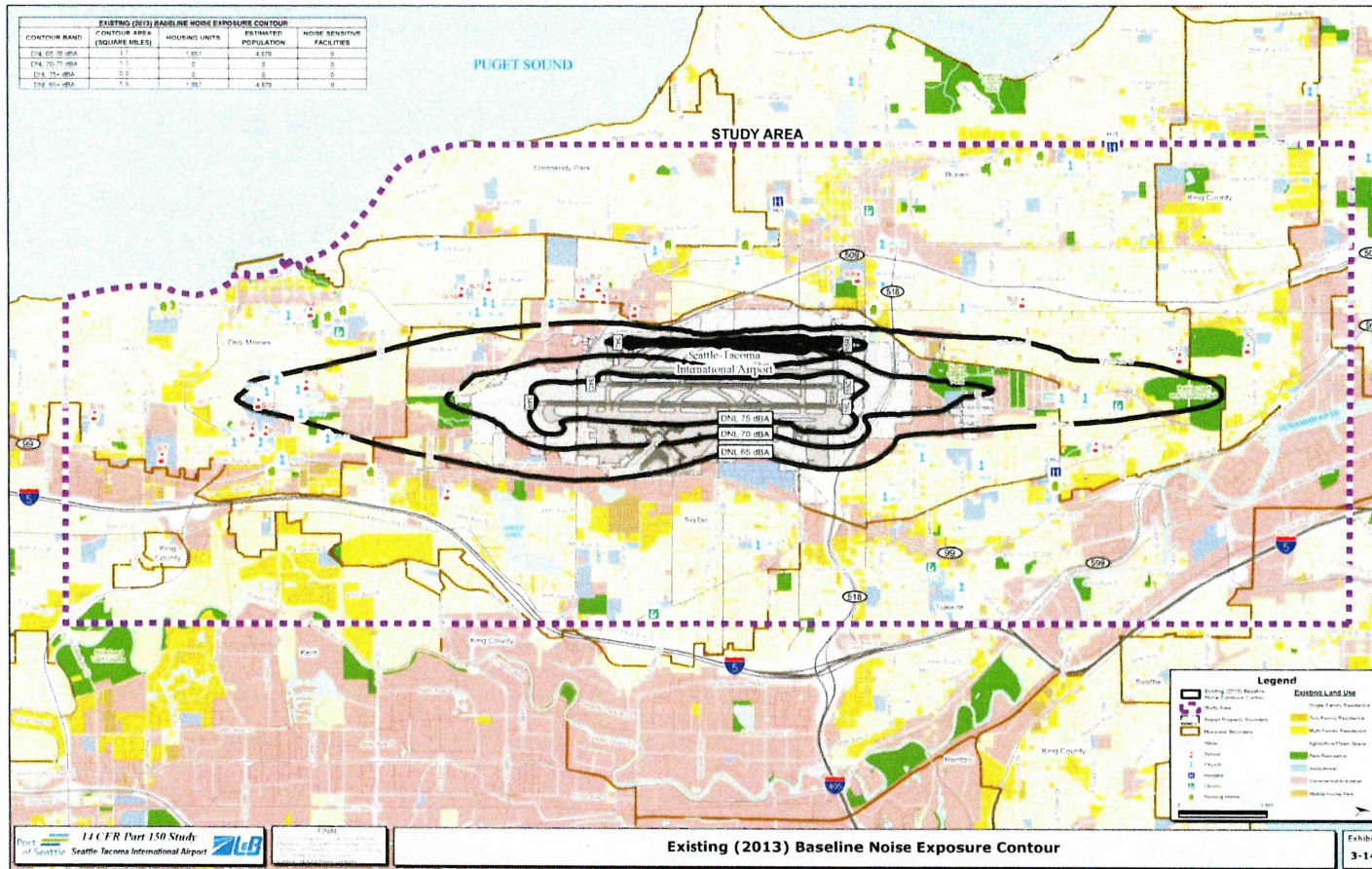
25, 30 or 35 Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Land Use Compatibility

- Land Uses
 - Existing and future land use
 - Land parcel data
 - Zoning
 - Jurisdictional boundaries and neighborhoods
- Noise Sensitive Uses
 - Residential
 - Places of worship
 - Schools, colleges and universities
 - Libraries/cultural institutions
 - Hospitals and residential healthcare facilities
 - Daycare and assisted living facilities
 - Historic properties



Sample Noise Exposure Map



Frequently Asked Questions

- Will the study “fix” all the noise issues around the airport?
 - No, overflights of residential areas are unavoidable and sensitivity to noise varies by person
- What type of noise monitoring will be conducted?
 - While all analysis is modeling based, which allows consistency and evaluation of future conditions, noise monitoring will be conducted to identify trends that should be evaluated in the operational data
- Will the Study address concerns about safety, soot, or other concerns related to aircraft operation?
 - The Part 150 process focuses exclusively on noise and land use compatibility

Part 150 Study Schedule

Preliminary Part 150 Study Schedule

Preliminary 14 CFR Part 150 Schedule

- Noise Exposure Maps

- Data Collection Summer 2024
- Public Outreach Summer/Fall 2024
- Noise Modeling Spring/Summer 2025
- NEM Report/FAA Acceptance Fall/Winter 2025

- Noise Compatibility Program

- Alternatives Analysis Summer/Fall 2025
- NCP Report Fall/Winter 2025/2026
- Public Hearing Summer 2026
- FAA 180 Day Review/ROA 2027

Summary of Kickoff Public Workshops

(1) Gregory Heights Elementary School

16216 19th Avenue SW
Burien, WA 98166
6:00 P.M. – 8:00 P.M.

June 5th, 2024

(2) Mount Rainier High School

22450 19th Avenue S
Des Moines, WA 98198
6:00 P.M. – 8:00 P.M.

June 6th, 2024

(3) Glacier Middle School

2450 S 142nd Street
SeaTac, WA 98168
10:00 A.M. – 12:00 P.M.

June 8th, 2024



Future Meetings

Technical Review Committee

- TRC Meeting #2 (Tentative)
- TRC Meeting #3 (Tentative)

August 2024

October 2024

- Reminder notices will be sent out in advance of each meeting
- Following the meeting, TRC materials will be posted on the Project Website at www.seapart150.com

Communications

- Project Website
 - Project Information
 - Process
 - FAQs
 - Tentative Schedule
 - Public Draft and Final NEM and NCP Reports
 - Reference Material
- Communication and Feedback:
 - Upcoming meetings including location/dates/times
 - Comment portal during public comment periods
 - Links to other websites/resources

Questions?