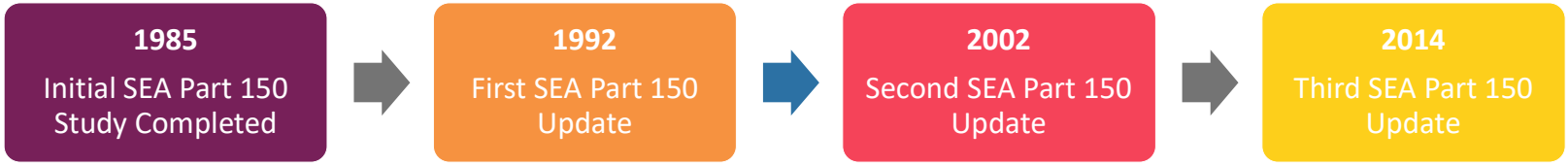
Welcome to the Public Workshop for the Seattle-Tacoma International Airport Part 150 Study

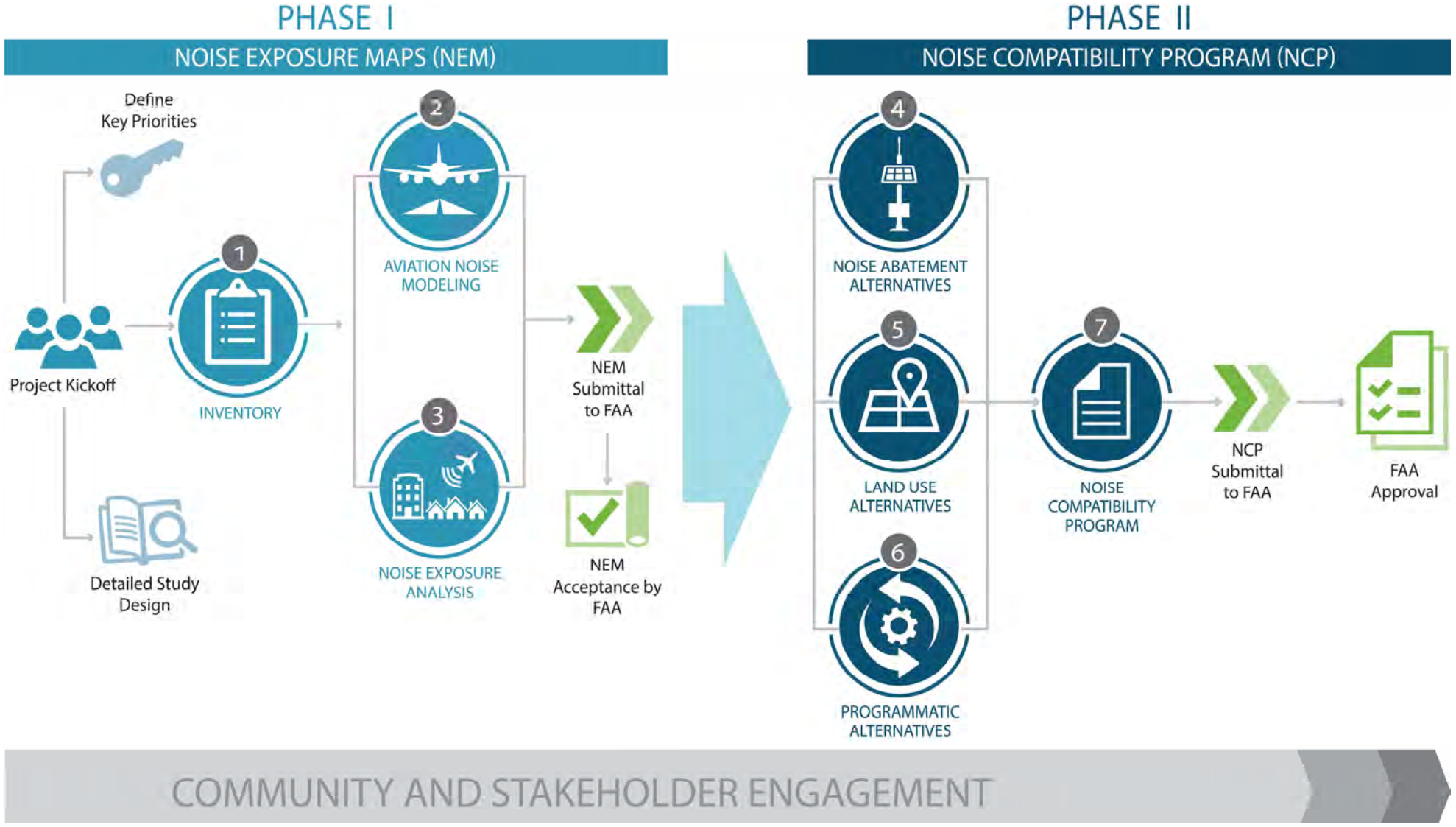
14 CFR Part 150 Overview

- Title 14 Code of Federal Regulations (CFR) Part 150 establishes the process for preparing Noise Exposure Maps (NEMs) and Noise Compatibility Programs (NCPs), together they are referred to as a "Part 150 Study"
- Why Conduct a Part 150 Study?
  - Determine existing and future noise conditions in the vicinity of an airport
  - Evaluate the feasibility of possible flight procedure/land use changes
  - Educate communities on the Federal process and what can and cannot be done to address aircraft noise concerns
  - Submit locally-endorsed recommendations to the FAA regarding noise reduction measures
- Part 150 studies are voluntary
- Part 150 studies must adhere to 14 CFR Part 150 requirements

SEA's Part 150 Efforts Span Four Decades



Phases of a Part 150 Study



Regulation of 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
- State and Local Governments:
  - Promote compatible land use through zoning
  - Can require real estate disclosure
  - Can mandate sound-insulating building materials
- Airport Proprietors, the 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

FEDERAL LAW TAKES PRECEDENCE OVER STATE AND LOCAL REGULATIONS

Key Priorities for this Part 150 Study

- Understanding community concerns about aircraft operations
  - Seasonal operations (North flow typically in the 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 Replacement Pilot Program

14 CFR Part 150 Terminology

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

Noise Exposure Maps: A Noise Exposure Map is a map showing noise exposure contour lines which identify areas of specific noise levels around an airport. NEMs also show geographical features and land uses that surround an airport.

Noise Compatibility Programs: A Noise Compatibility Program report includes descriptions and a detailed evaluation of noise abatement, mitigation, land use, and program management measures available to the airport.

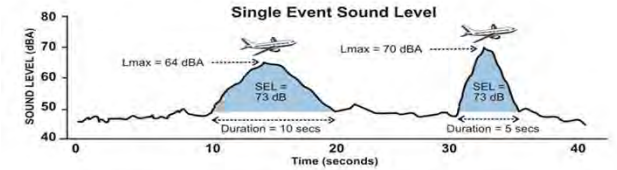
Noise Abatement Measures: These measures are intended to reduce actual aircraft noise levels in noise-sensitive areas by either reducing aircraft noise at the source by shielding noise sensitive areas, or with operational measures, such as changes to aircraft flight tracks or approach/departure flight profiles.

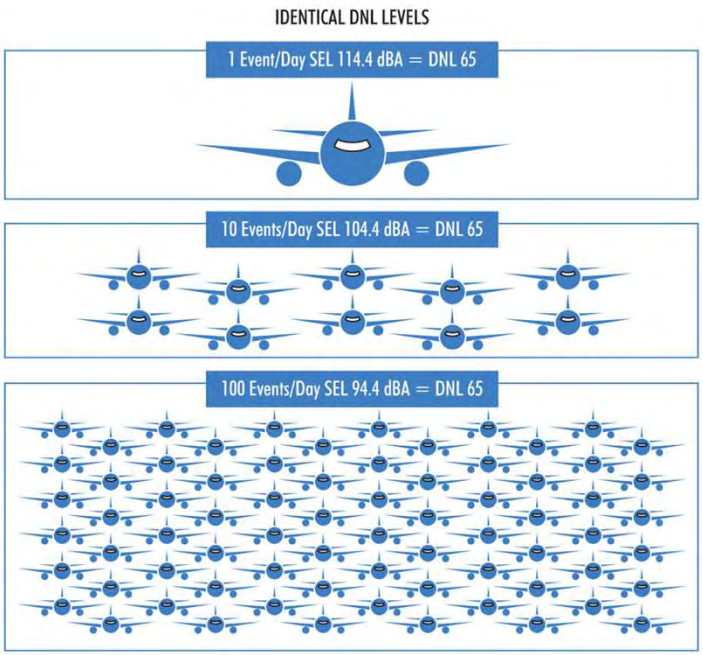
Noise Mitigation Measures: These measures are intended to reduce the effects of aircraft noise on the noise sensitive land use. Noise mitigation strategies may include property acquisition and acoustical treatment/ soundproofing programs.

Land Use Measures: These measures aim to prevent future noncompatible land use. Land use strategies may include revised zoning, building code changes, and real estate disclosures. These measures would have to be implemented by local jurisdictions.

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. and 7 a.m. is penalized by 10 dB to account for the higher sensitivity to noise during nighttime hours and the expected decrease in background levels that typically occur at night
- FAA requires the use of DNL for airport noise analyses
- Average Annual Day aircraft noise exposure is calculated over a broad area and then depicted using contour lines of equal noise levels



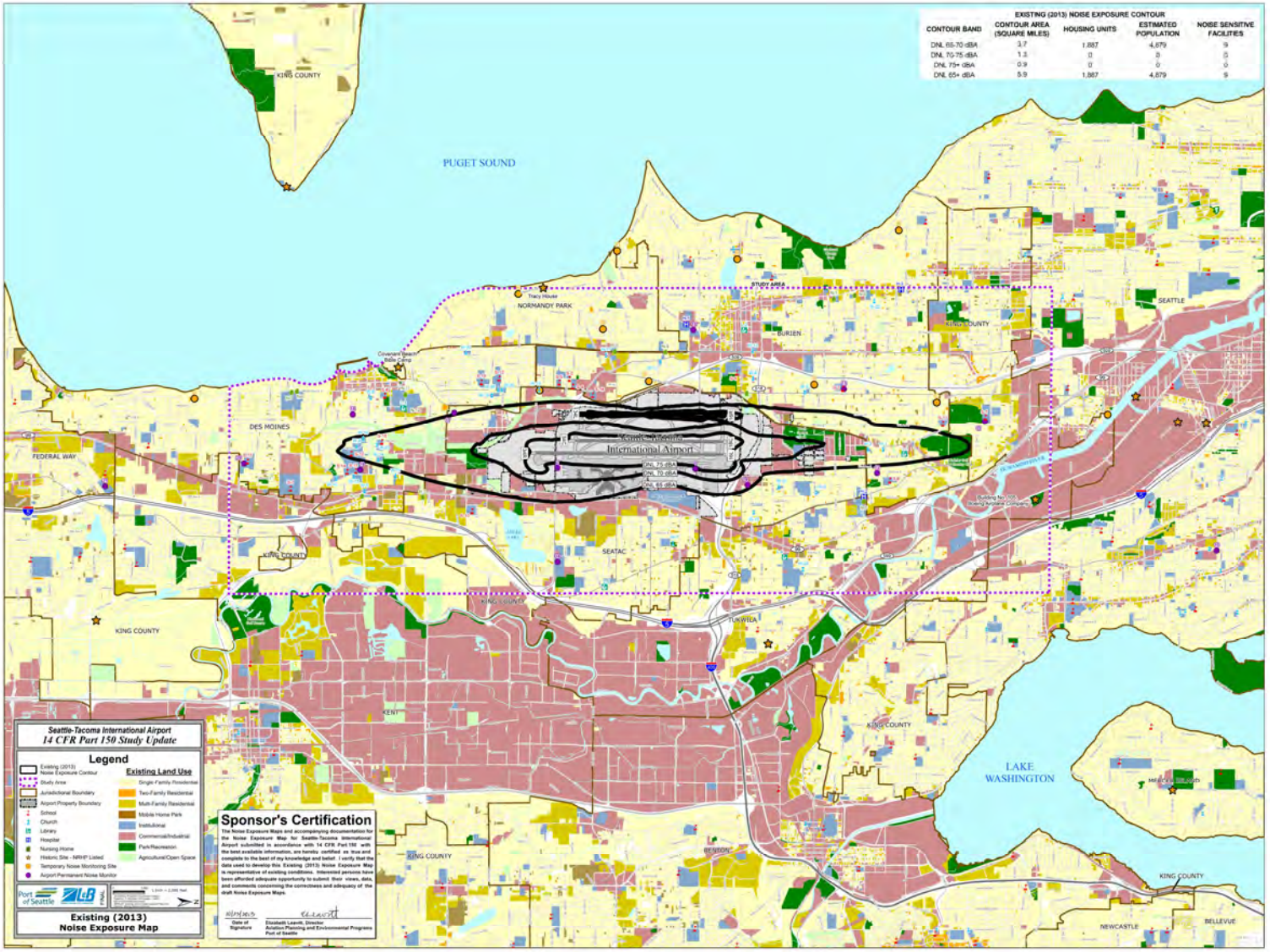


Noise Exposure Maps

Official Noise Exposure Maps:

- Base year and future year which is at least 5 years in the future
- Basis of comparison for effectiveness of potential noise abatement measures
- Year of submittal must be consistent with base year
  - Anticipated Existing Condition: 2025
  - Anticipated Future Condition: 2030
- Existing Condition based on recent 12 months of operational data applied to the anticipated 2025 projected activity level
- Future Condition based on forecast aircraft operations and anticipated aircraft fleet changes

DNL Noise Contour Example (2013)



Noise and Land Use Compatibility

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

The Part 150 process is the Airport Sponsor's way 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.

*The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

NOTES

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

KEY TO TABLE

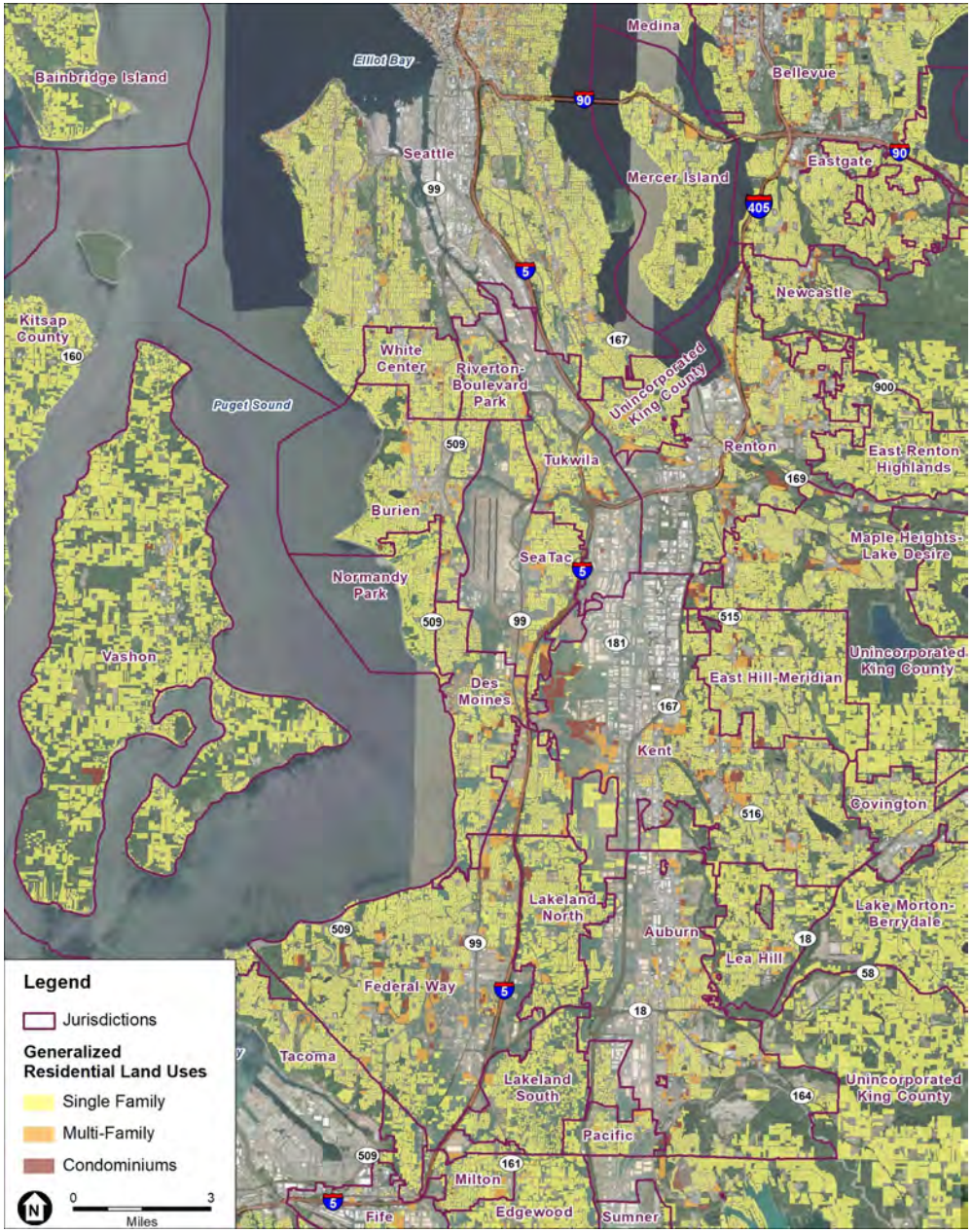
SLUCM	Standard Land Use Coding Manual.
Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into 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.

Noise Modeling

- Aircraft noise modeling allows for:
  - Calculating 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) is the FAA's required model for aircraft noise

Land Use Compatibility

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



Note: Preliminary data, subject to change. All noise-sensitive land uses will be analyzed in the Part 150 Study.

Model Inputs

- The amount of noise exposure is determined by:
  - Aircraft types
  - Stage length (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

Community Engagement

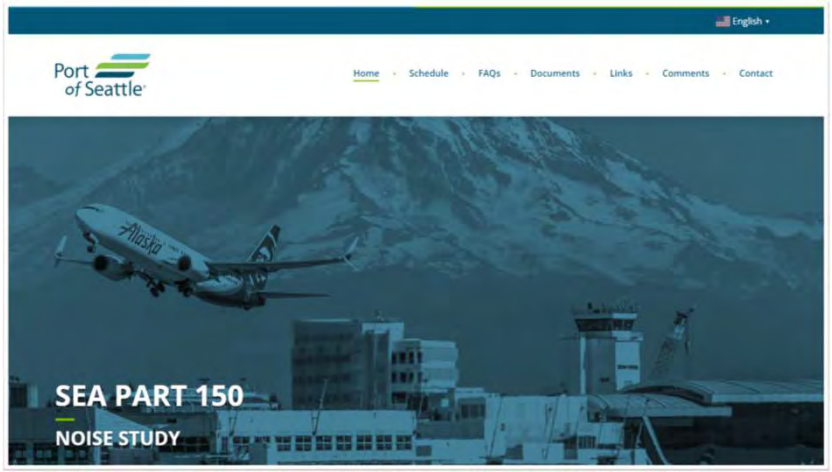
- Initial coordination with Airport communities through the SEA Stakeholder Advisory Round Table (StART) Committee
- Kickoff Public Workshops
- Technical Review Committee
  - Review study assumptions
  - Provide technical feedback within the context of the Part 150 Study
- Study website
- Targeted outreach to underserved communities
- NEM Public Workshops
- NCP Public Workshop/Hearing

Preliminary Part 150 Study Schedule

- Noise Exposure Maps (NEMs)
  - Data Collection — Summer 2024
  - Noise Modeling — Fall 2024
  - NEM Public Workshops — Spring/Summer 2025
  - NEM Report/FAA Acceptance — Fall/Winter 2025
- Noise Compatibility Program (NCP)
  - NCP Recommendations Screening — Summer/Fall 2025
  - NCP Analysis — Fall/Winter 2025/2026
  - NCP Report & Public Workshop/Hearing — Summer 2026
  - FAA 180 Day Review/ROA — 2027

Communications

- Project Website: www.seapart150.com
  - 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
  - Links to other websites/resources
  - Comment portal during public comment periods



1944

- The Seattle-Tacoma Airport opened
- The Army Air Forces used the airport for shipping Boeing B-29 bombers

1947

- The airport's first scheduled commercial flights occurred on September 1st

1949

- Seattle-Tacoma International Airport's (SEA) official dedication

1985

- First Part 150 Study began
- Start of the Port's Sound Insulation Program

2005

- Fly Quiet Program established at SEA

2018

- SEA Stakeholder Advisory Round Table forms and proposes initiatives to address community noise concerns

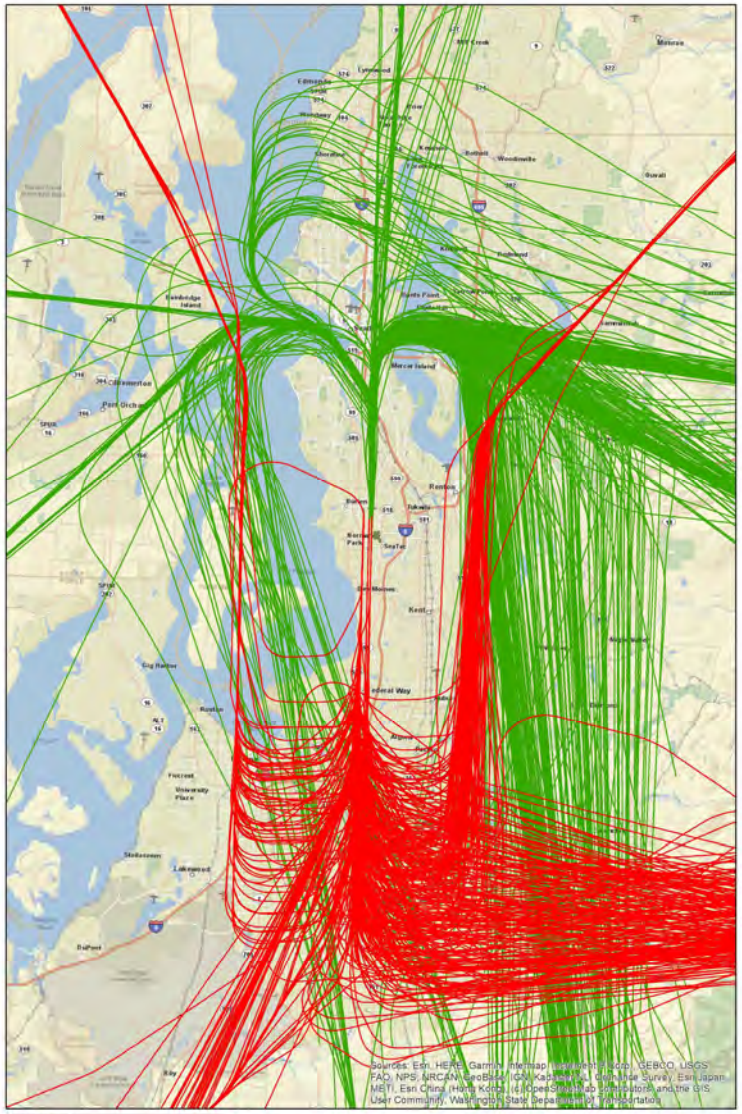
2024

- Fourth Part 150 Study Update

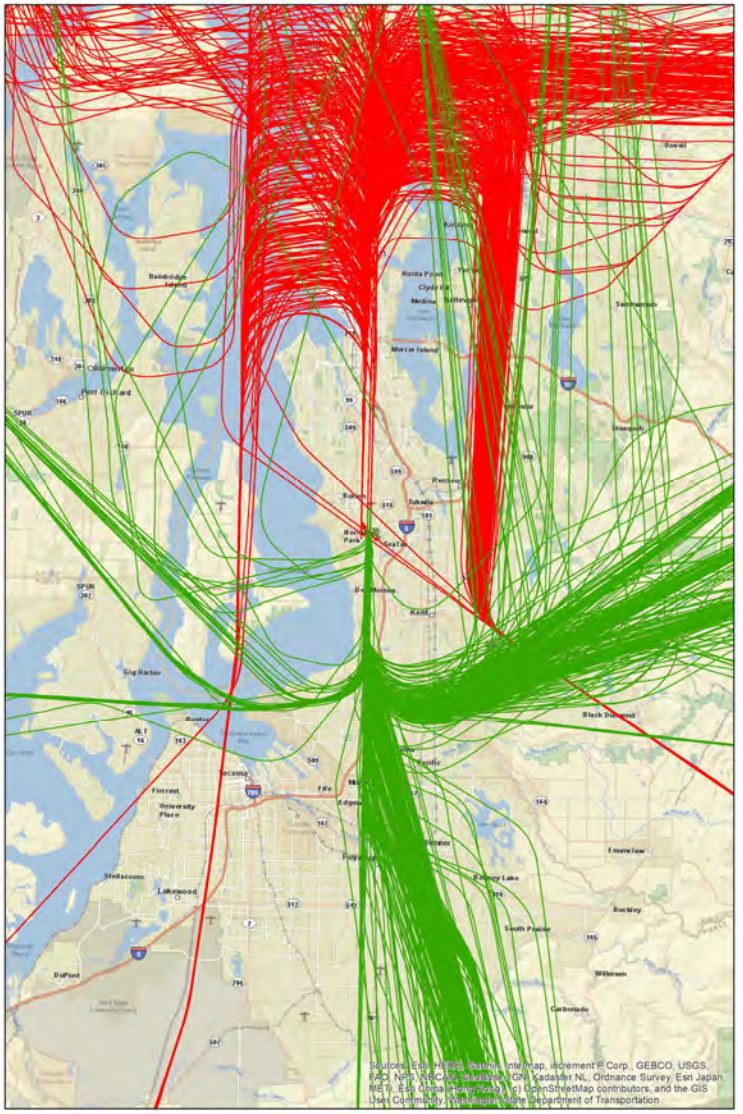
SEA Overview

- 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 422,508 operations
- Served 50 million passengers in 2023
- Processed 417,052 metric tons of cargo in 2023
- The only large hub airport in the PNW
- Non-stop flights to over 120 domestic and international cities

SEA North Flow Operations Sample Map



SEA South Flow Operations Sample Map



How to Provide Comments:

You may provide written comments during this public workshop. Comment forms are available at this meeting to submit here, email P150@portseattle.org, or by mail to:

Port of Seattle
Aviation Noise Programs
C/O SEA Part 150 Study
17801 International Blvd, #6012M
Seattle, WA 98158-12025

Thank You for Your Participation!

Other Port of Seattle Programs

Sustainable Airport Master Plan (SAMP)

AIRSIDE

A01 - Taxiway A/B Extension
A02 - Runway 16R-34L Blast Pads
A03 - Taxiway L Relocation *(Pre-SAMP project)*
A04 - Taxiway B 500' Separation & RIM Mitigation
A05 - North Hold Pad
A06 - Runway 34L Highspeed Exit
A07 - Taxiway D Extension
A08 - Hardstand (north)
A09 - Hardstand (central)
A10 - Taxiway Fillets (not shown)

LANDSIDE

L01 - NAE Relocation (southbound lanes)
L02 - Elevated Busway & Stations
L03 - Second Terminal Roads / Curbside
L04 - Main Terminal North GT Lot
L05 - North GT Holding Lot
L07 - Employee Parking Structure

TERMINAL

T01 - North Gates
T02 - Second Terminal & Parking

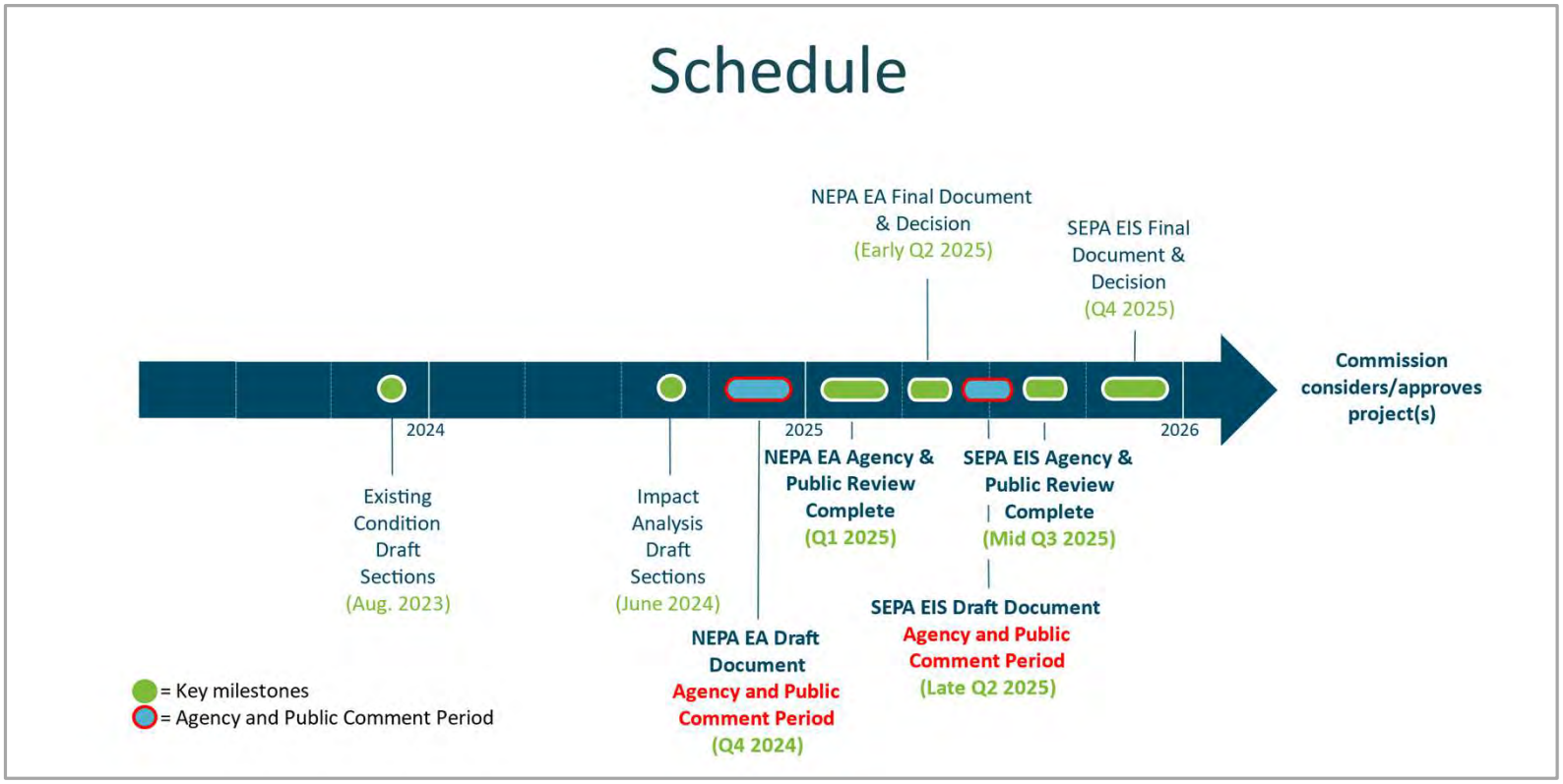
CARGO

C01 - Cargo 4 South Redevelopment
C02 - Off-site Cargo PH 1 (L-Shape)
C03 - Off-site Cargo PH 2 (L-Shape)

AIRPORT/ AIRLINE SUPPORT

S01 - Fuel Farm Expansion
S02 - Primary ARFF
S03 - Secondary ARFF
S04 - Fuel Rack Relocation
S05 - Triculator
S06 - Consolidated De-icing Tanks
S07 - Westside Maintenance Campus
S08 - Airline Support (north)
S09 - Airline Support (west)
S10 - Centralized Rec. & Dist. Center

Sustainable Airport Master Plan (SAMP)



SEA Sound Insulation Programs

Current Sound Insulation Programs

- The current sound insulation programs are funded by SEA Airport revenues (20%) and FAA grant funds (80%)
- Since the start of the program in 1985, the Port has insulated:
  - Over 9,400 single-family homes
  - 6 condominium complexes (274 individual units)
  - 10 of 15 identified Highline schools
  - 14 buildings on Highline College campus
  - Apartment and Places of Worship construction starting in 2025
- Within the 2014 Noise Remedy Boundary and meet additional eligibility requirements
- SoundInsulation@portseattle.org

Repair and Replacement Pilot Program

- Perform a survey-based assessment of previously installed sound insulation packages to understand:
  - Project Scale
  - Financial Investment
- Define a Repair and Replacement Pilot Program including:
  - Identifying potential issues or defects with previously installed sound insulation packages
  - Explore potential FAA grant eligibility by Performing acoustical testing of a sampling of homes
  - Determining eligibility for the Pilot Program starting in 2025
- SEARepairReplacePilot@portseattle.org