

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

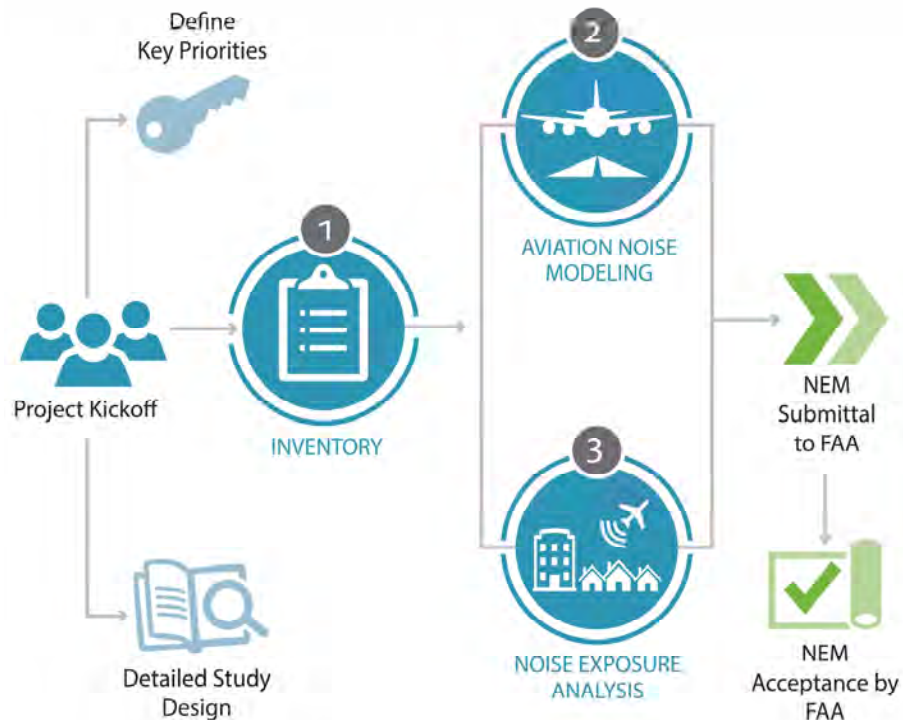
SEA’s Part 150 Efforts Span Four Decades



Phases of a Part 150 Study

PHASE I

NOISE EXPOSURE MAPS (NEM)



PHASE II

NOISE COMPATIBILITY PROGRAM (NCP)



COMMUNITY AND STAKEHOLDER ENGAGEMENT

Regulation of Airport Noise

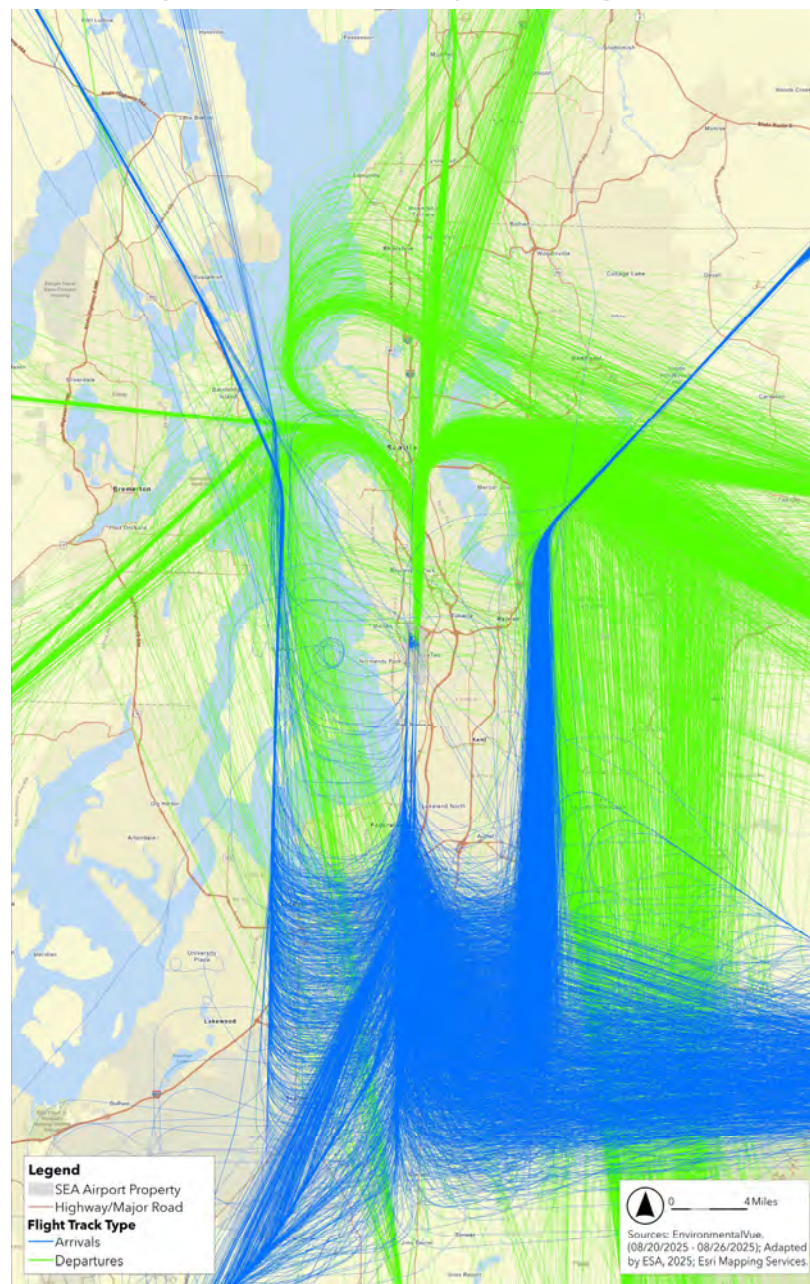
- Federal Aviation Administration:
 - Controls aircraft while in flight
 - Responsible for controlling noise at its source (i.e., aircraft engines)
 - Certifies aircraft and pilots
- State and Local Governments:
 - Promote compatible land use through zoning
 - Can require real estate disclosure
 - Can mandate sound-insulating building materials
- Airport Proprietors, the Port of Seattle:
 - Responsible for capital improvement projects and infrastructure
 - Can establish a "noise office", which serves 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

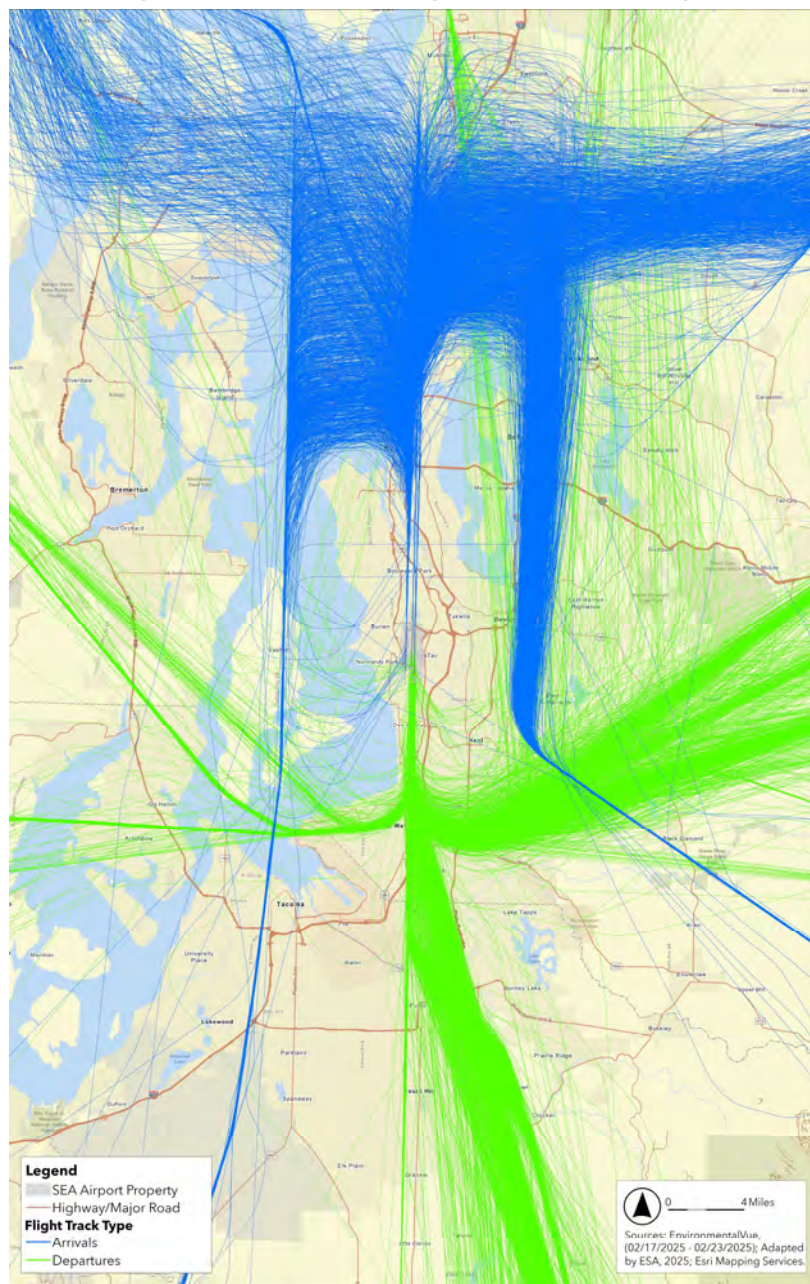
Required Elements of a Noise Compatibility Program (NCP)

- Noise Compatibility Programs:
 - Identify noise abatement, land use, and programmatic strategies to reduce aircraft noise impacts on surrounding communities
 - Proposes measures to improve compatibility between airport operations and noncompatible land uses based on the NEMs
- The FAA reviews the entire NCP for technical accuracy, policy alignment, and effectiveness of proposed measures
- The NCP must include a provision for future revisions, including NEM updates
- The FAA issues a determination for each proposed measure: approved, disapproved, approved or disapproved in part, or no action (for NCP measures involving flight procedures)
- All NCP Measures Must Consider:
 - Reduction of existing incompatible land use and prevention / reduction of future incompatible land use
 - The FAA will not approve NCP measures that do not reduce exposure to noise of DNL 65 and higher
 - Safety and efficiency
 - Consistency with the powers and duties of the FAA
 - Avoidance of unjust discrimination against certain aircraft types
 - Interstate commerce
 - Measures cannot impose an undue burden on interstate commerce (requires balancing of interests)
 - The ability to meet both local needs and national air transportation system needs
- Per FAA policy, aircraft noise cannot be redirected from one community to another

North Flow Operations Sample (August 20-26, 2025)

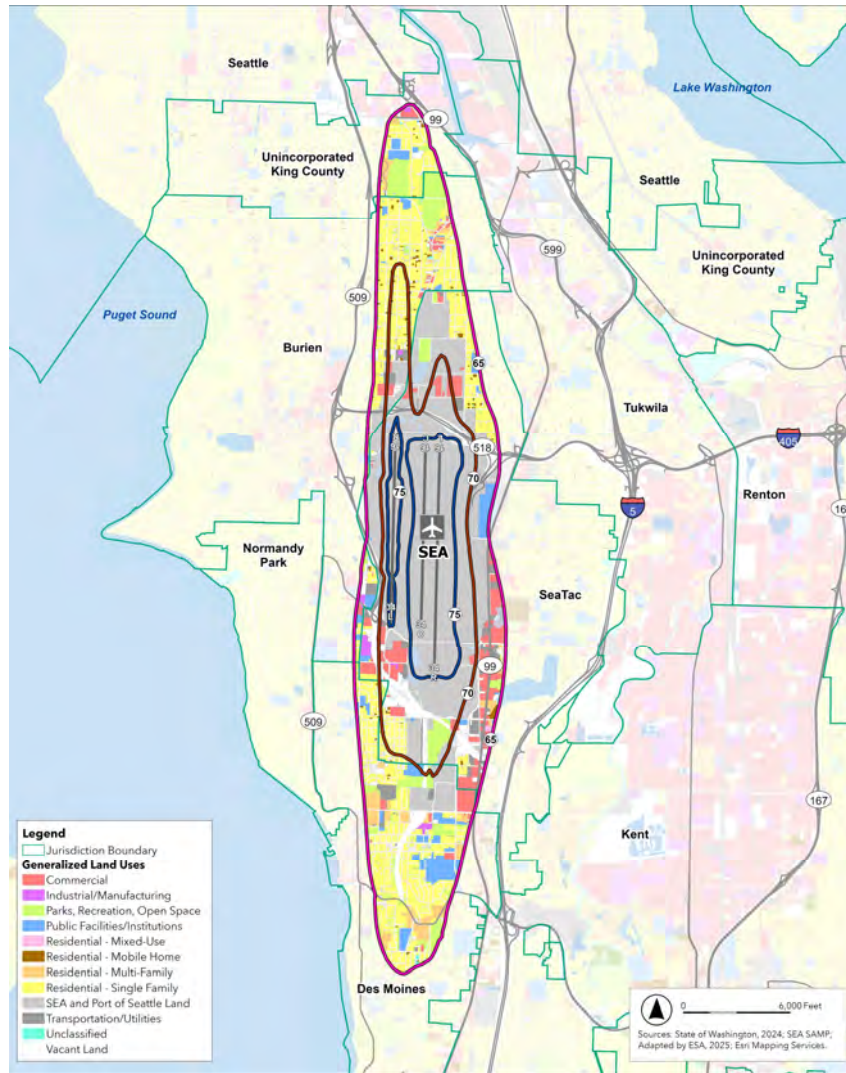


South Flow Operations Sample (February 17-23, 2025)

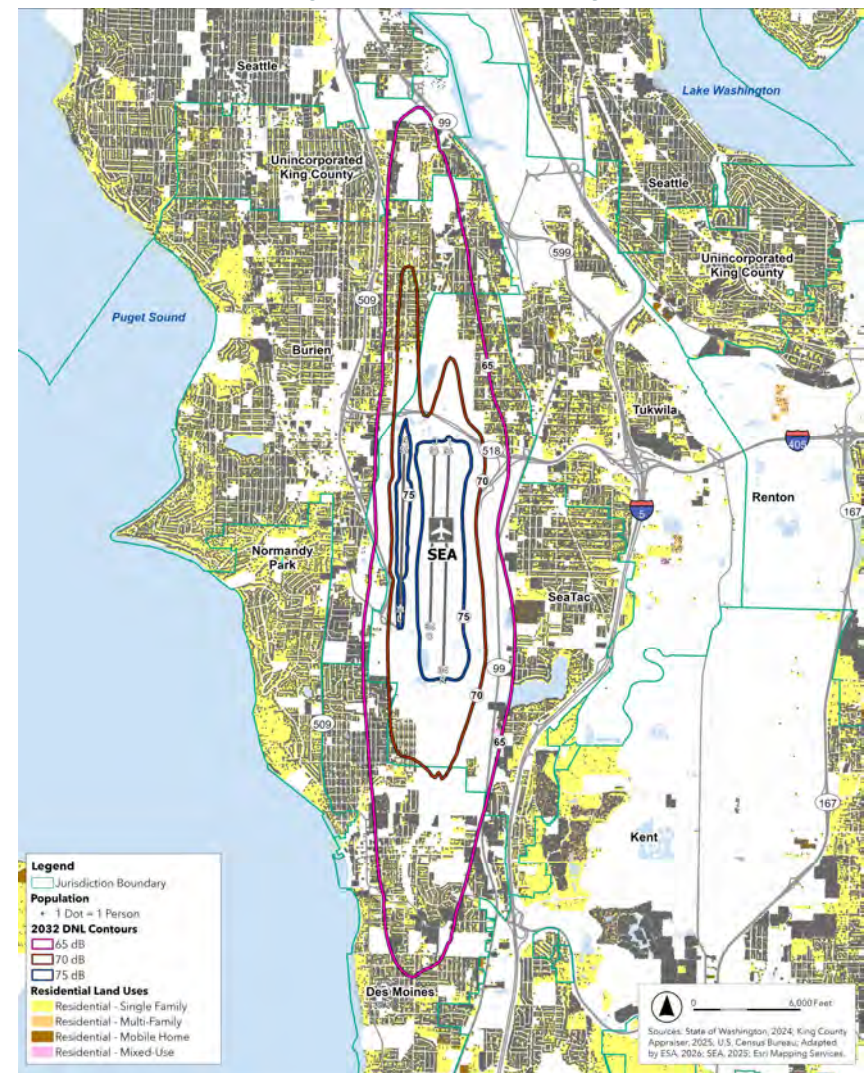


2032 DNL Contours – Land Use and Population Density

Land Use



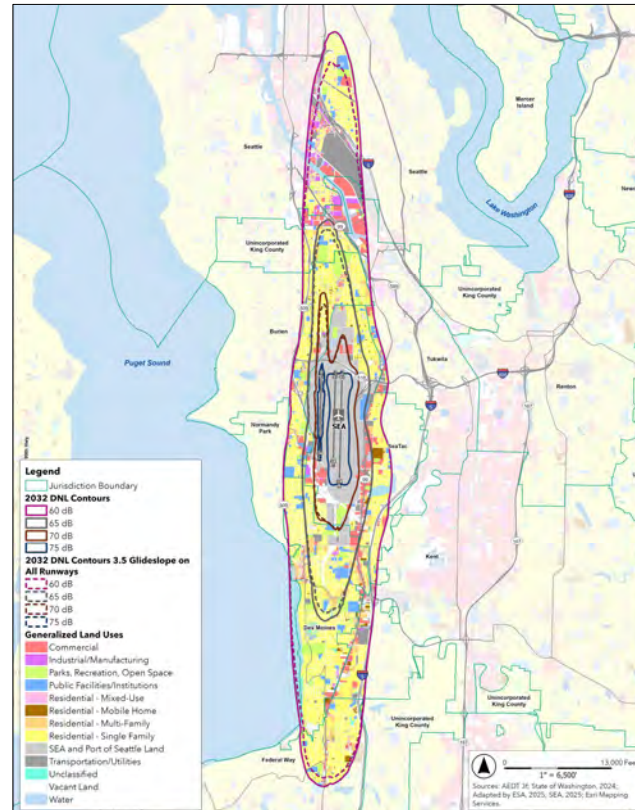
Population Density



3.5 Degree Increased Glideslope on Arrivals

- Increase arrival aircraft altitudes by raising the descent angle on final approach from 3 degrees up to 3.5 degrees
- Evaluated increasing the aircraft descent angle for:
 - All runways 24 hours a day
 - Runways 16R and 34L only during the nighttime hours (10 PM – 7 AM)
- Additional benefits below DNL 65

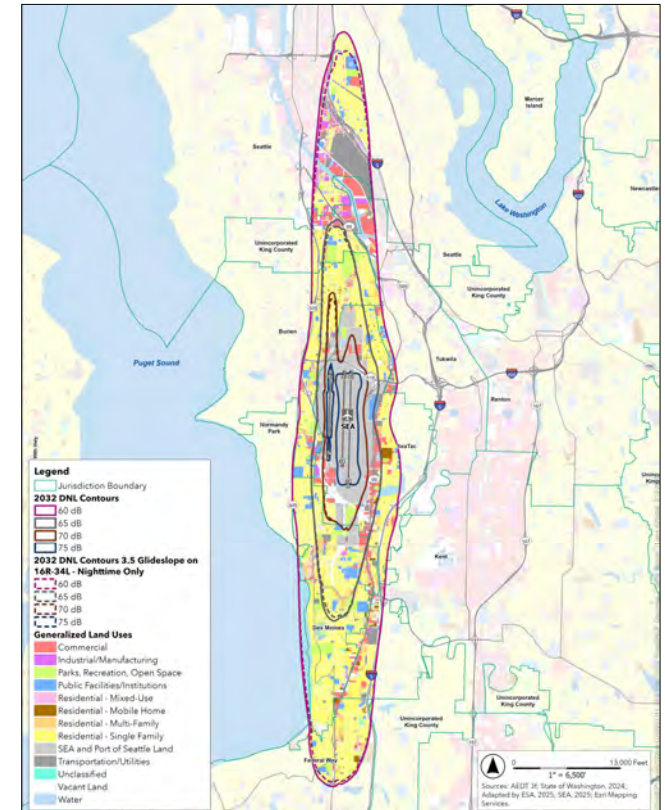
All Runways – All Day



Land Use	Change in Population from 2032 NEM
Single Family	-1,230
Multi-Family	-1,569
Mobile Home	-29
Vacant	-
Mixed-Use	-2
Total	-2,830

Source: ESA, 2026; State of Washington, 2024.

Runway 16R/34L – Nighttime Only



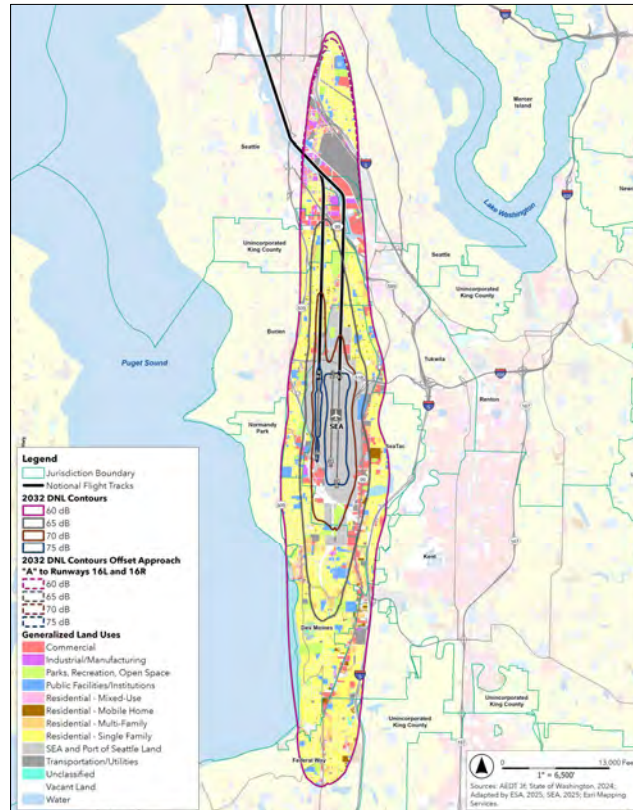
Land Use	Change in Population from 2032 NEM
Single Family	-484
Multi-Family	-726
Mobile Home	-18
Vacant	-
Mixed-Use	-
Total	-1,229

Source: ESA, 2026; State of Washington, 2024.

Runway 16L and 16R Offset Approaches (Nighttime)

- Maximize flying over commercial/industrial corridors north of the Airport
- Assumed 20% of nighttime (10 PM - 7 AM) arrivals on the HAWKZ, MARNR, and JAWBN procedures would utilize offset approaches
 - Represents 8% of all nighttime arrivals
 - ~2,898 annual/7.94 Annual Average Day (AAD) operation
- Additional benefits below DNL 65

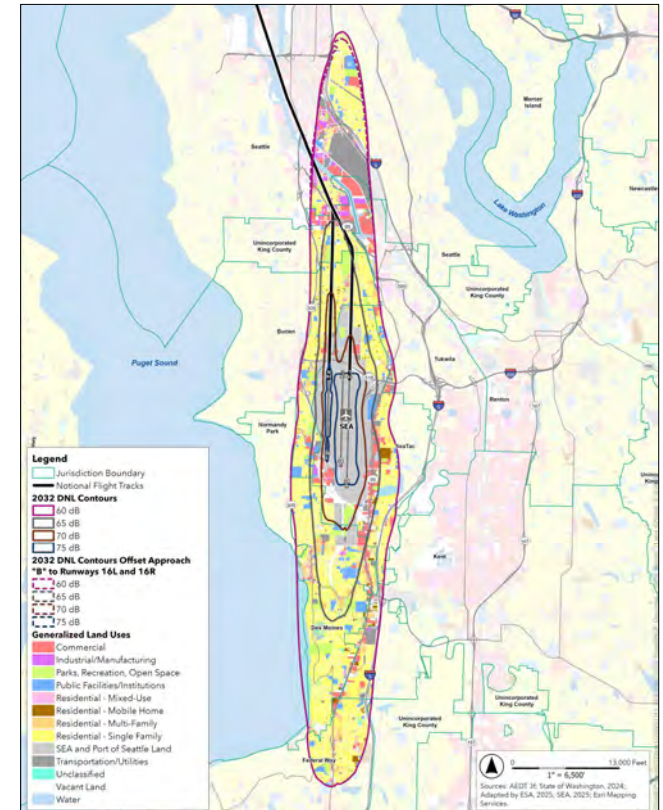
Offset A



Land Use	Change in Population from 2032 NEM
Single Family	-12
Multi-Family	-
Mobile Home	-
Vacant	-
Mixed-Use	-
Total	-12

Source: ESA, 2026; State of Washington, 2024.

Offset B

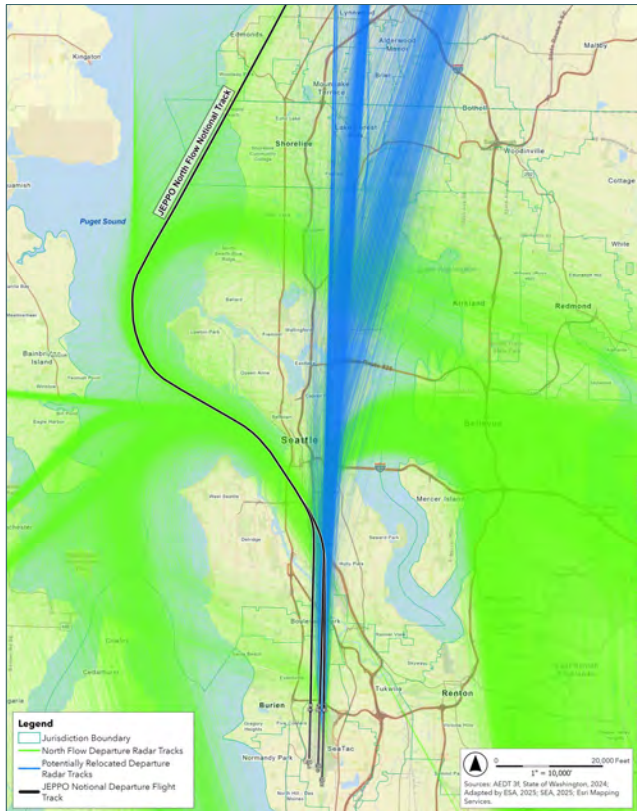


Land Use	Change in Population from 2032 NEM
Single Family	-11
Multi-Family	-
Mobile Home	-
Vacant	-
Mixed-Use	-
Total	-11

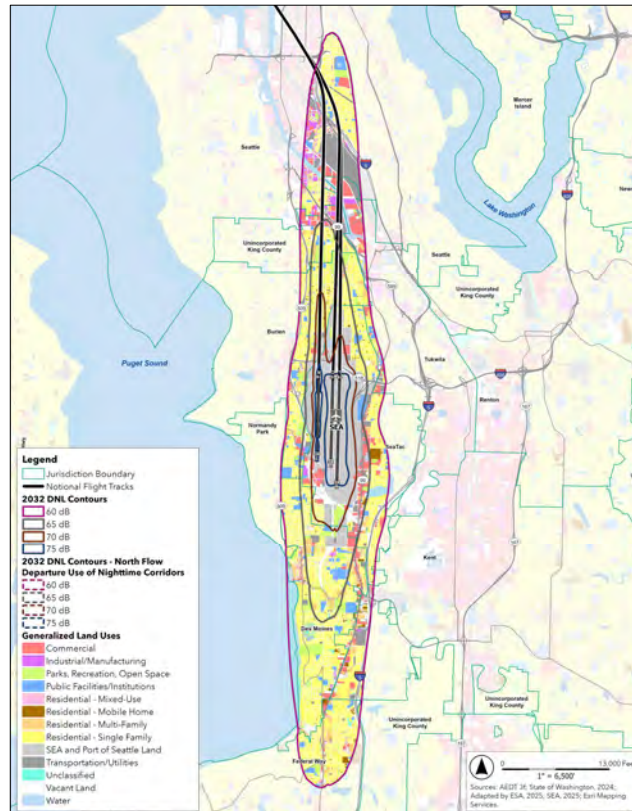
Source: ESA, 2026; State of Washington, 2024.

North Flow Departure Corridor

Notional Flight Track



Results



- Straight-out north flow departures to use the existing JEPP0 departure procedure
- Represents 4% of all 2032 forecast north flow departures
 - ~2,530 annual/6.9 AAD operations
- Additional benefits below DNL 65

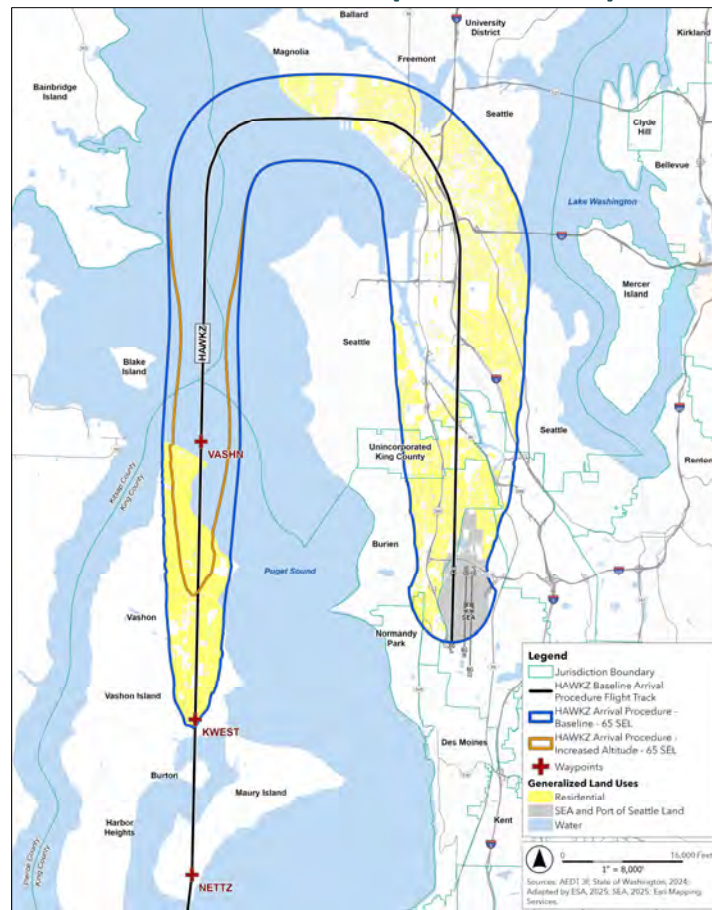
Land Use	Change in Population from 2032 NEM
Single Family	-2
Multi-Family	-
Mobile Home	-
Vacant	-
Mixed-Use	-
Total	-2

Source: ESA, 2026; State of Washington, 2024.

Arrival Modifications – Increased Aircraft Altitudes

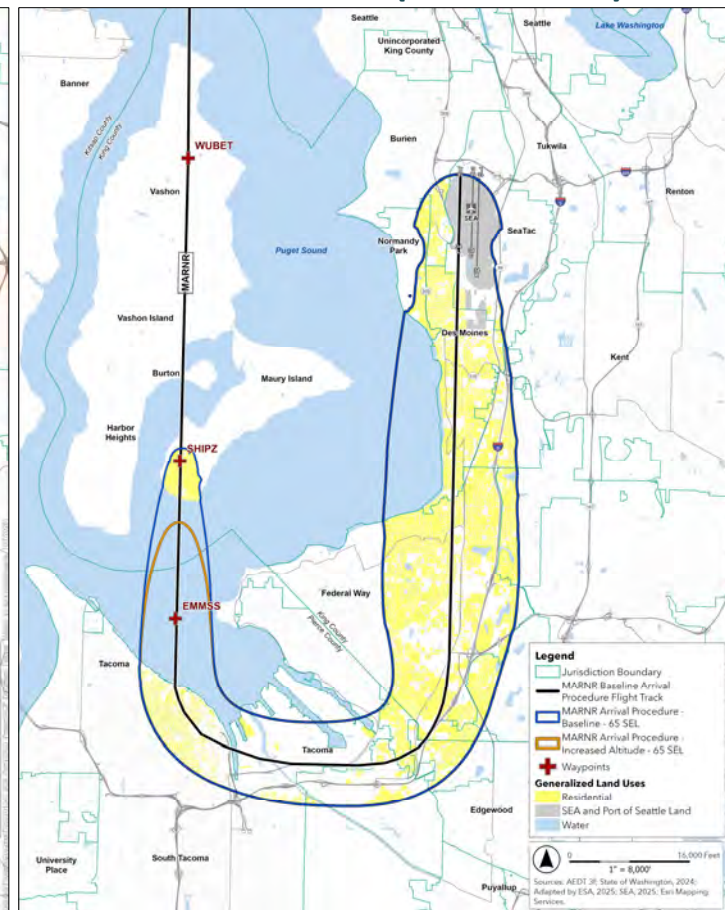
- Increased altitudes by 1,000 feet for south flow arrivals on HAWKZ procedure and north flow arrivals on MARNR procedure
- Assumed all aircraft would fly the increased altitudes
- No benefit within DNL 65, but potential benefits at lower levels
- Noise benefits on single event/Sound Exposure Level (SEL) basis

HAWKZ Arrival (South Flow)



SEL 65 dB Contour - Boeing 737-800 on Runway 16R

MARNR Arrival (North Flow)



SEL 65 dB Contour - Boeing 737-800 on Runway 34L

Arrival Modifications – Potential Flight Track Alternatives

- Identify potential alternatives to shift south flow arrivals on the HAWKZ procedure and north flow arrivals on the MARNR procedure to the west
- Assumed aircraft distributions for sequencing to the final approach course from the procedures and aircraft altitudes would remain the same

HAWKZ Alternative A



**Increase in residential
single event noise exposure**

SEL 65 dB Contour - Boeing 737-800 on Runway 16R

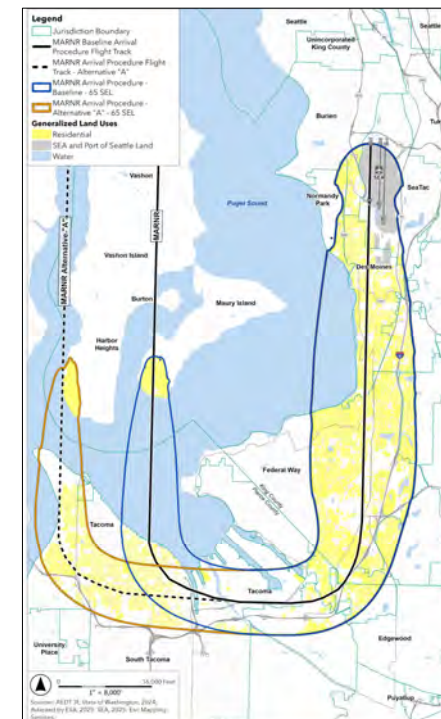
HAWKZ Alternative B



**Decrease in residential
single event noise exposure**

SEL 65 dB Contour - Boeing 737-800 on Runway 16R

MARNR Alternative



**Increase in residential
single event noise exposure**

SEL 65 dB Contour - Boeing 737-800 on Runway 34L

Increased Use of South Flow RNP Z Approaches

- Increase utilization of existing Required Navigation Performance (RNP) Z approaches at night (10 PM – 7 AM)
 - Currently utilized ~1% at night
 - Increased nighttime utilization to 20% for south flow arrivals on the HAWKZ procedure
- No benefit within DNL 65, but potential benefits at lower levels
- Noise benefits on single event/SEL basis

Typical HAWKZ South Flow Arrival



SEL 65 dB Contour - Boeing 737-800 on Runway 16R

RNP Z HAWKZ South Flow Arrival

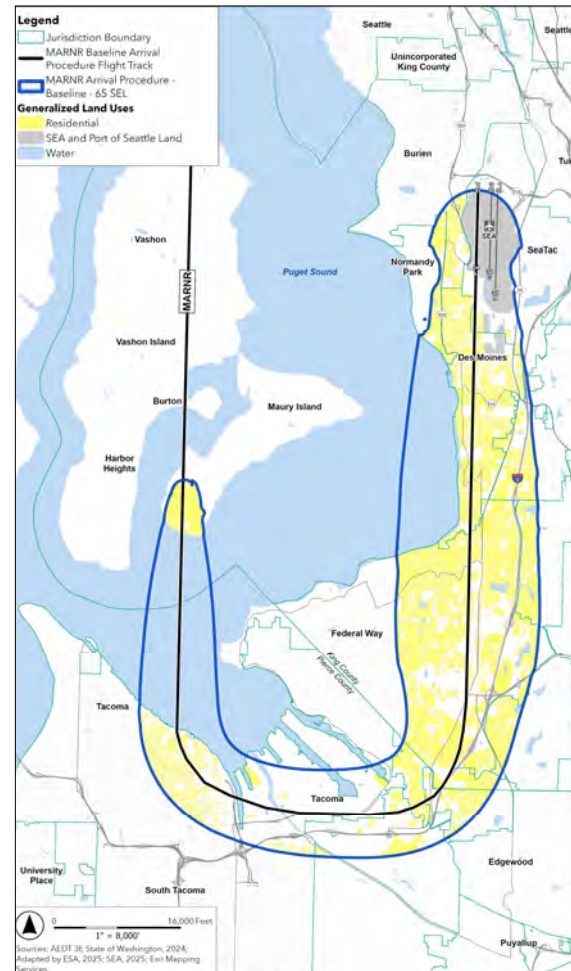


SEL 65 dB Contour - Boeing 737-800 on Runway 16R

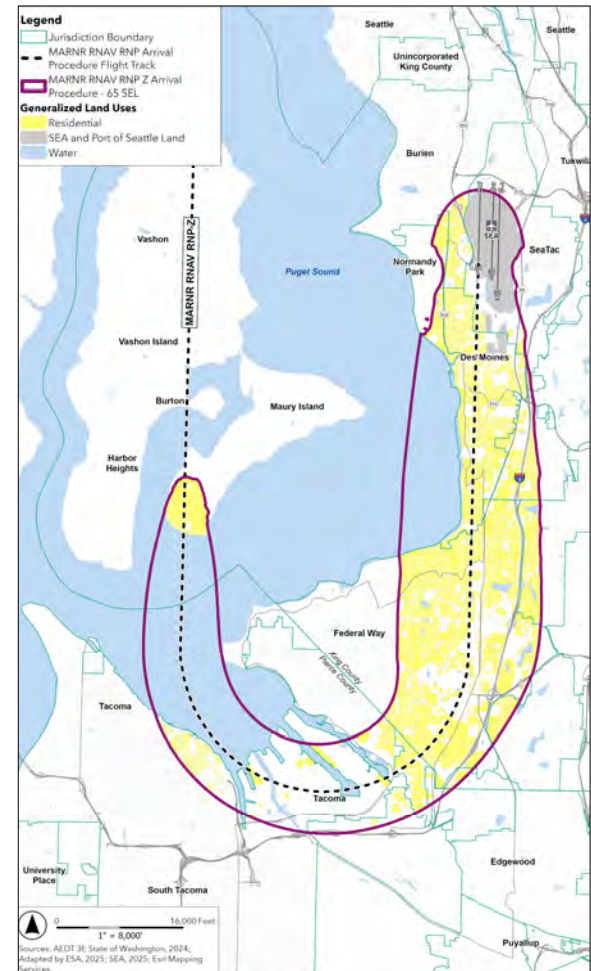
Increased Use of North Flow RNP Z Approaches

- Increase utilization of existing RNP Z approaches at night (10 PM – 7 AM)
 - Currently utilized ~1% at night
 - Increased nighttime utilization to 20% for north flow arrivals on the MARNR procedure
- No benefit within DNL 65, but potential benefits at lower levels
- Noise benefits on single event/SEL basis

Typical MARNR North Flow Arrival



RNP Z MARNR North Flow Arrival



Expand Sound Insulation Program

Long-Term Transient Lodging

- Identify hotel and motel lodging facilities that are used as residential housing within the current Noise Remedy Boundary
 - Length of Stay (monthly occupancy is common)
 - Residential Function (serves as the primary residence for most guests)
 - Unit Configuration (units may support long-term living)
 - Program Feasibility (building characteristics are conducive to sound insulation improvements)

Residential Homes Eligibility

- Expand eligibility beyond existing construction date requirements.
 - Des Moines: December 3, 1986
 - All Other Jurisdictions: September 6, 1987
- FAA funding eligibility for residences built before October 1, 1998
- Increase access to sound insulation benefits for homeowners currently ineligible under existing program criteria

Update Noise Remedy Boundary

- Establish block rounding areas based on the 2032 NEM



Encourage Jurisdictional Land Use Measures

Zoning Amendments

- Implemented by local jurisdictions
- Typically includes provisions establishing:
 - Specific requirements tied to noise contours
 - Modifications to permitted land uses in underlying zones
 - Exchange of development rights
 - Easement/disclosure requirements for new or redeveloped noise sensitive uses
 - Required exterior-to-interior noise level reductions

Establish Noise Zones

- Used to help guide compatible land use planning and discourage future noise-sensitive development



Source: Greater Orlando Aviation Authority (GOAA), 2026.

- Benefits
 - Establishes clear standards within noise zones
 - Promotes compatible land use development
 - Addresses key airport noise concerns
 - Can extend beyond DNL 65 areas
 - Consistent with protecting public health, safety, and welfare
- Challenges
 - Can constrain redevelopment by increasing construction costs and development requirements
 - Additional regulations may be controversial
 - May create nonconforming land uses
 - Increases administrative requirements
 - Enhanced building standards may face opposition

Encourage Jurisdictional Land Use Measures

Encourage Real Estate Disclosures for Properties within DNL 65

- WA State Law requires disclosure of “material facts or defects” but does not list aircraft noise in the standard disclosure form
- Location within the NRB could be considered a material fact, but local jurisdictions would need to implement this measure

Encourage Amending Building Codes

- Airport noise-specific building codes have been adopted by SeaTac and Burien; could be adopted by other jurisdictions
- Focus on interior noise level reduction and appropriately rated building materials
- May increase construction costs and reduce development feasibility within affected areas

Encourage King County to Refine Noise Nuisance Rating

- King County Assessor records include an Airport Noise Nuisance field
- Airport noise coded as a binary indicator (e.g., "1" = airport noise present).
- Additional detail could improve transparency and consistency when evaluating airport-related noise. Some examples include:
 - Low, medium, and high airport nuisances
 - DNL-based rating system

LAND DATA			
Highest & Best Use As If Vacant	SINGLE FAMILY	Percentage Unusable	
Highest & Best Use As Improved	PRESENT USE	Unusable	NO
Present Use	Single Family (Res Use/Zone)	Restrictive Size Shape	NO
Land Sqft	5,367	Zoning	RL
Acres	0.15	Water	WATER DISTRICT
		Sewer/Sepic	PUBLIC
		Road Access	PUBLIC
		Parking	ADEQUATE
		Street Surface	PAVED
Views		Waterfront	
Rainier		Waterfront Location	
Territorial		Waterfront Frontage	0
Olympics		Lot Depth Factor	0
Cascades		Waterfront Bank	
Seattle Skyline		Tide Shore	
Puget Sound		Waterfront Restricted Access	
Lake Washington		Waterfront Access Rights	NO
Lake Sammamish		Poor Quality	NO
Lake/River/Creek		Proximity Influence	NO
Other View		Nuisances	
Designations		Topography	
Historic Site		Traffic Noise	HIGH
Current Use	(none)	Airport Noise	1
Nbr Bldg Sites		Power Lines	NO
Adjacent to Golf Fairway	NO	Other Nuisances	YES
Adjacent to Greenbelt	NO	Problems	
Other Designation	NO	Water Problems	NO
Deed Restrictions	NO	Transportation Congestion	NO
Development Rights Purchased	NO	Other Problems	NO
Easements	NO	Environmental	
Native Growth Protection	NO	Environmental	NO
Easement	NO		
DNR Lease	NO		

Potential Programmatic Management Measures

Continue Community Education and Outreach

- Continue current community education and engagement as well as expand upon existing programs
- Consider providing additional outreach to neighborhoods, community organizations, and other stakeholders
- Improve pilot and community education at the Airport (e.g., increased handouts or informational materials)
- Consider enhancing the tools and process for investigating and reporting aircraft operations
- Improve transparency on aircraft operations at SEA



Potential Programmatic Management Measures

Upgrade Noise and Operations Monitoring System (NOMS)

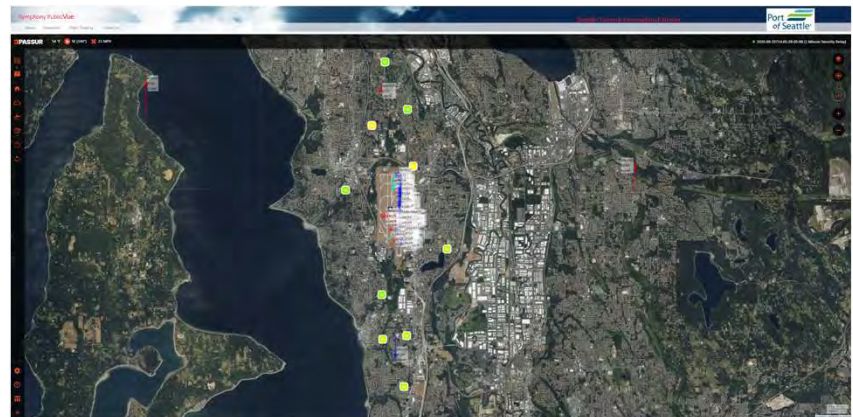
- Review existing monitor locations
- Identify potential new monitoring sites
- Improve access to noise and flight data
- Enhance transparency and reporting

Expand Fly Quiet Program

- Review and update airline rankings
- Add new performance categories
- Recognize noise reduction efforts
- Increase program visibility and reporting
- Encourage airline actions that reduce noise

Active Noise Control Systems

- Evaluate emerging noise reduction technologies
- Explore applications in nearby communities
- Assess feasibility and effectiveness
- Identify implementation opportunities
- Support long-term noise management



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!

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
 - 7 condominium complexes (321 individual units)
 - 11 of 15 identified Highline schools
 - 14 buildings on Highline College campus
 - Apartment and Places of Worship construction currently underway
- Within the current Noise Remedy Boundary and meet additional eligibility requirements
- SoundInsulation@portseattle.org

Repair and Replacement Pilot Program

- Completed an Assessment in early 2025 that included:
 - Outreach to, and collection of, information from residents via a comprehensive survey
 - Acoustic testing and a field assessment of a sampling of homes
 - Summary of the results in a Technical Report to help inform decision-making for the Pilot Program
- Pilot Program Eligibility & Status:
 - 471 homes insulated prior to January 1, 1993, and must be located within current Noise Remedy Boundary
 - Acoustically test at, or greater than, FAA's 45 dBA DNL interior noise threshold
 - Acoustic testing completed for 190 homes
 - 9 homes tested eligible and 8 homeowners have opted in
- SEARepairReplacePilot@portseattle.org