Port of Seattle

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SEPA DETERMINATION OF NON-SIGNIFICANCE (DNS) OF PROPOSED ACTION

Seattle-Tacoma International Airport (Sea-Tac Airport)
Part 150 Noise Compatibility Planning Study

The Port of Seattle has completed an environmental analysis, including review of pertinent and available environmental information and preparation of a State Environmental Policy Act (SEPA) Checklist, for the "Part 150 Noise Compatibility Planning Study" (the Part 150 Study).

Description of the Proposed Non-Project Action:

Commission approval and adoption of the Part 150 Study for Sea-Tac International Airport. The Part 150 Study is considered a "programmatic or non-project" action since it describes and analyzes a planning study and associated recommendations. Detailed information is not available for all measures within the planning study and some measures involve changes in plans and policies rather than specific construction. Additional future environmental review of some measures may be required if appropriate on a project-level basis.

The implementation of the recommendations evaluated in this study would: (1) reduce the impact of aircraft noise in areas surrounding Seattle-Tacoma International Airport; (2) reduce the overall aircraft noise impacts on the population of the Seattle area; and (3) promote land uses that are compatible with anticipated airport noise exposure.

The Part 150 Study noise mitigation recommendations are categorized as one of the following: measures that are a continuation of existing measures with some modifications; new measures now to be included as part of the Port's established noise mitigation program; program management measures such as employee staffing and computer equipment and resources, which assist the Port in implementing and managing the noise program.

Continuing Measures with Some Modifications

1. Explore Limited Rescheduling of Nighttime Flights
2. Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track
3. Maintenance Run-up Regulations
4. Preferential Runway Use
5. Development/ Implementation of a Fly Quiet Program
6. Use of FMS Procedures
7. Use of Ground Equipment
8. Expand the Fly Quiet Program
9. Standard Insulation
10. Insulation of Schools
11. Property Advisory Service
12. Local Government Remedy Support
13. Funding for Land Use/Noise Compatibility Planning
14. Approach Transition Zone (ATZ) Acquisition
15. Prepare Cooperative Development Agreements

New Measures

16. Construct a Ground Run-Up Enclosure (GRE) on the airport to minimize run-up noise
17. Sound insulate eligible owner-occupied multi-family units (condominiums) within the modified noise remedy boundary
18. Sound insulate eligible tenant-occupied multi-family units (apartments) within the modified noise remedy boundary
19. Offer avigation easements to owners of individual lots in which mobile homes are located within the modified Noise Remedy Boundary
20. Initiate a formal study to evaluate the noise levels at churches/places of worship located within the modified noise remedy boundary, for eligibility for sound insulation

Program Management Measures

21. Evaluate and upgrade Noise Monitoring and Flight Tracking System
22. Periodically review and, if necessary, update the NEMs and the NCP
23. Continue to operate the Noise Office

Location of Project Location: Several actions will occur within the secure portions of Sea-Tac International Airport, while other actions will occur within the surrounding communities.

Lead Agency: Port of Seattle (SEPA No. 13-01)

Determination: The Port of Seattle completed an environmental evaluation including review of pertinent and available environmental information, following the provisions of the Washington State Environmental Policy Act (SEPA) under Chapter 43.21C, Revised Code of Washington (RCW), Chapter 197-11, Washington Administrative Code (WAC), and Port Commission Resolution 3650, Port of Seattle SEPA Policies and Procedures. On April 5, 2013, as lead agency, the Port determined the proposal would not have a probable significant adverse impact on the environment. Therefore, an Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(c). Port Commission Resolution 3650 contains the procedures for appealing a SEPA decision of the Port of Seattle.

Supporting Information: Information used to reach this determination, and applicable State laws and Port of Seattle policies, regulations, and procedures, are available for public review at the following locations:

- Port of Seattle - Headquarters, 2711 Alaskan Way Seattle, WA 98121
- Port of Seattle - Sea-Tac Airport, 17801 International Blvd. - (Pacific Highway So.) Seattle, WA 98158
- Burien Library, 400 Southwest 152nd Street, Burien, WA 98166, (206) 243-3490
- Foster Library (Tukwila), 4060 South 144th Street, Tukwila, WA 98168 (206) 242-1640
- Boulevard Park Library, 12015 Roseberg, Avenue South, Seattle, WA 98168, (206) 242-8662
- South Park Library, (Seattle), 8604 8th Avenue South, Seattle, WA 98108, (206) 615-1688
- White Center Library (Seattle), 11220 16th Avenue Southwest, Seattle, WA 98146, (206) 243-0233
- Vashon Library (temporary location) 17707 100th Avenue SW Vashon Island, WA 98070, 206-463-2069
- Valley View Library (SeaTac), 17850 Military Road South, SeaTac, WA 98188, (206) 242-6044
- Des Moines Library, 21620 11th Avenue South, Des Moines, WA 98198, (206) 824-6066
- Kent Library, 212 2nd Avenue North, Kent, WA 98032, (253) 859-3330

- Woodmont Library (Des Moines), 26809 Pacific Highway South, Des Moines, WA 98198, (253) 839-0121
- Federal Way Regional Library, 34200 1st Way South, Federal Way, WA 98003, (253) 838-3668
- Seattle Public Library (Main Branch), 1000 4th Avenue, Seattle, WA 98104, (206) 264-1120
- Sea-Tac Part 150 Study Website: www.airportsites.net/sea-part150

The document is also available for review online at http://www.portseattle.org/Environmental/Environmental-Documents/SEPA-NEPA/Pages/default.aspx.

Public and Agency Comment: No action will be taken on this proposal until after the 45-day public comment period expires at 4:00 PM on May 30, after which the Port will (1) formally adopt this Determination of Non-Significance; (2) clarify or review the proposal; or (3) complete additional environmental analyses, as appropriate. The public is invited to comment on this DNS by commenting at the public hearing on May 15, 2013 or submitting written comments no later than 4 P.M. on May 30, 2013 to: Rob Adams, Part 150 Project Manager, Landrum & Brown Inc., 11279 Cornell Park Drive, Cincinnati, Ohio 45242. Comments may also be emailed at SEApart150comments@landrum-brown.com or sent by fax to (513) 530-2201. If special accommodations for non-English speaking are required for an individual's participation in the open house/hearing, please call (206) 787-3797 by Wednesday, May 6, 2013.

Appeals: This SEPA DNS determination may be appealed by filing a writ of review in King County Superior Court within twenty-one (21) days of the date the Port formally adopts this determination pursuant to Port of Seattle Resolution No. 3650 and RCW 43.21C.080.

Elizabeth Leavitt
Director, Aviation Planning and Environmental Programs
April 12, 2013

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ENVIRONMENTAL CHECKLIST

SEATTLE-TACOMA INTERNATIONAL AIRPORT
Proposed Part 150 Noise Compatibility Plan

LIST OF ABBREVIATIONS

AOA	Airport Operations Area – secure portion of the airfield
APU	Auxiliary Power Unit
ATZ	Approach Transition Zone
dBA	Decibels on the A-weighted Scale
DNL	Day-Night Average Sound Level – the metric required by the FAA to evaluate aircraft noise exposure.
GPU	Ground Power Unit
GRE	Ground Run-up Enclosure
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FMS	Flight Management System
GPS	Global Positioning System
GRE	Ground Run-up Enclosure or hush house
IFR	Instrument Flight Rules
Part 150	Federal Aviation Regulation Part 150
SR	State Route
TA	Time Above a Threshold of A-Weighted Sound
VFR	Visual Flight Rules
WsDOT	Washington State DOT

ENVIRONMENTAL CHECKLIST

SEATTLE-TACOMA INTERNATIONAL AIRPORT
Proposed Part 150 Noise Compatibility Plan

This SEPA checklist is considered a "programmatic or non-project" checklist since it describes and analyzes a planning study and associated recommendations. Detailed information is not available for all measures recommended by the planning study and some measures involve changes in plans and policies rather than specific construction. Additional future environmental review on a project-level basis may be required for some measures if appropriate.

A. BACKGROUND

1. Name of proposed project, if applicable:

Seattle-Tacoma International Airport
Proposed Part 150 Noise Compatibility Plan

2. Name of applicant:

Port of Seattle

3. Address and phone number of applicant and contact person:

Stan Shepherd (206) 787-4095
Noise Abatement Office
Port of Seattle
P.O. Box 68727
Seattle, WA 98168

Steve Rybolt (206) 787-5527
Port of Seattle
P.O. Box 68727
Seattle, WA 98168
SEPA.p@portseattle.org

4. **Date checklist prepared:** February 11, 2013

5. Agency requesting checklist: Port of Seattle - SEPA File No. 13-01

6. Proposed timing or schedule (including phasing, if applicable):

The proposed project is part of the Port of Seattle's (the Port's) ongoing Part 150 Noise Compatibility Planning process (Part 150 Plan or NCP). The Port completed its first Part 150 in 1985, and since then has consistently updated, amended, and improved its noise

abatement and land use compatibility actions.

The timetable recommended for implementation of the Port staff's 2013 recommendations is dependent on completion of any requisite further environmental studies and/or availability of funding, and is proposed in Table 1. **Appendix B** further details each measure identified in Table 1.

Table 1 – Part 150 Noise Compatibility Plan Recommendations and Schedule

MEASURE	SCHEDULE
Measure A-1: Explore Limited Rescheduling of Nighttime Flights	Ongoing
Measure A-3: Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track	Ongoing
Measure A-10: Maintenance Run-up Regulations	Ongoing
Measure A-11: Preferential Runway Use	Ongoing
Measure A-12: Development/ Implementation of a Fly Quiet Program	Ongoing
Measure A-15: Use of FMS Procedures	Ongoing
Measure A-16: Use of Ground Equipment	Ongoing
Measure M-2a: Standard Insulation	Ongoing
Measure M-2b: Insulation of Schools	Ongoing
Measure M-5: Property Advisory Service	Ongoing
Measure M-6: Local Government Remedy Support	Ongoing
Measure M-7: Funding for Land Use/Noise Compatibility Planning	Ongoing
Measure M-11: Approach Transition Zone (ATZ) Acquisition	Ongoing
Measure M-12: Prepare Cooperative Development Agreements	Ongoing
Measure A-18: Construct a Ground Run-Up Enclosure (GRE) on the airport to minimize run-up noise.	Subject to the Airport Master Plan
Measure A-19: Expand the Fly Quiet Program	As possible
Measure M-14: Sound insulate eligible owner-occupied multi-family units (condominiums) within the modified noise remedy boundary	Based on availability of funding
Measure M-15: Sound insulate eligible tenant-occupied multi-family units (apartments) within the modified noise remedy boundary	Based on availability of funding
Measure M-16: Offer avigation easements to owners of individual lots in which mobile homes are located within the modified Noise Remedy Boundary.	Based on availability of funding
Measure M-17: Initiate a formal study to evaluate the noise levels at churches/places of worship located within the modified noise remedy boundary for eligibility for sound insulation	Based on availability of funding
Measure P-1: Evaluate and Upgrade Noise Monitoring and Flight Tracking System	Based on availability of funding
Measure P-2: Periodically review and, if necessary, update the NEMs and the NCP	2018
Measure P-3: Continue to operate the Noise Office	Ongoing

Source: *Seattle Tacoma International Airport, Part 150 Noise Compatibility Study Update*, Draft, April 2013, Chapter 6, Noise Compatibility Program. Prepared by Landrum & Brown. http://www.airportsites.net/SEA-part150/draft.htm.

The cost to implement the above recommendations is estimated at $87,225,000 to $106,635,000. As a result, the timetable of implementation would depend upon availability of funding.

The proposed Part 150 Noise Compatibility Plan has been developed reflecting those ongoing actions (actions that were recommended and implemented from prior Part 150 studies) that will continue to be implemented, as well as new actions that will be initiated following approval of the NCP by the Federal Aviation Administration (FAA). It is expected that implementation of the actions can be initiated and substantially completed in a five-year period upon FAA approval of the Plan and availability of funding. It is expected that the FAA would complete its review of the Plan in late 2013. If approved, the Port would then complete implementation by late 2018/early 2019, depending on funding availability.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No future plans are currently known that would involve additions, expansions or other activities directly related to the Part 150 Plan recommendations. The Port of Seattle will evaluate the need for future Part 150 Updates as necessary, depending on the changing noise environment. As noted in **Table 1/Attachment C**, a number of the actions are recommended for continued implementation. Other recommendations are to discontinue actions that were recommended in past Part 150 Studies, which were either never implemented or were implemented and are not as effective as was anticipated. The current Part 150 Study then augmented the recommendations with other actions, designed to achieve noise reduction goals.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The Part 150 Noise Compatibility Study included a specialized type of environmental analysis that focuses exclusively on aircraft noise exposure and land use compatibility in accordance with Federal Aviation Regulation (FAR) Part 150. That planning study produced the Proposed Noise Compatibility Plan. Over the last two years, information was collected on existing (2013) and projected future (2018) noise conditions. The Study then examined a broad range of actions that are required by FAR Part 150, as defined in FAA Advisory Circular 150/5020-1 *Noise Control and Compatibility Planning for Airports*. Recommendations were then developed, based on input from the public, on ways to reduce existing and future noise exposure. Documentation prepared for the study includes:

- Inventory of Regulatory Requirements, Activity, and Current Noise Abatement and Land Use Compatibility Programs;
- Forecasts of Passengers and Aircraft Operations;
- Noise Analysis and Land Use Analysis
- Abatement, Mitigation, and Program Management Alternatives; and

- Noise Compatibility Plan.

The Port and its consultant team maintained a public web site throughout the duration of the Part 150 Study. Documents were produced for public review and comment throughout the study and were placed on the web at http://www.airportsites.net/SEA-Part150/documents.htm.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Because the area covered by the Noise Compatibility Plan/Noise Remedy Boundary, and the area within the existing and future noise exposure contours is large, a wide array of possible governmental actions and associated approvals could occur. Actions could include jurisdictional implementation of local comprehensive plans including changes in land use and zoning in accordance with existing and planned development. Relative to the specific properties addressed by the Noise Compatibility Plan, approvals could include:

- Implementation by the Port of Seattle of projects in its Comprehensive Development Plan or subsequent plans;
- Completion by WSDOT and Sound Transit of roadway and Light Rail improvements in the Airport vicinity which may influence land use characteristics in the airport vicinity; and
- Continued pursuit of cooperative development, and associated approvals, in local communities that both support the needs of the Airport and the local community.

The past Noise Compatibility Plans also included actions that the Port would recommend to the FAA that relate to the control of aircraft flight to/from Sea-Tac Airport; those recommendations are continued in this Plan. Based on the recommendations of the Study, FAA may require the Port to conduct further studies, including possible environmental reviews under NEPA for those noise abatement and land use compatibility actions that constitute federal actions.

10. List any government approvals or permits that will be needed for your proposal, if known.

Implementation of the operational and land use recommendations may require permits or approvals from local governmental parties. Changes in nighttime runway use and flight tracks are air traffic derived procedures, which are the exclusive responsibility of the FAA. Upon further study, the Port may recommend changes reflected in the proposed Noise Compatibility Plan for FAA consideration, review and approval. Development of a Ground Run-up Enclosure, when sited and designed, may require permits from the City of SeaTac, and further consideration by the FAA. Implementation of land use compatibility actions, such as zoning and comprehensive plan modifications would require actions by the respective jurisdictions, such as SeaTac, Des Moines, and Burien.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The implementation of the recommendations evaluated in this checklist would: (1) reduce the impact of aircraft noise in areas surrounding Seattle-Tacoma International Airport; (2) reduce the overall aircraft noise impacts on the population of the Seattle area; and (3) promote land uses that are compatible with anticipated airport noise exposure.

Project Overview

During the 1970s, the Port initiated a noise compatibility planning process aimed at reducing aircraft noise exposure impacting area residences. In the early 1980s, the FAA established a formal process for airports to consider aircraft noise exposure and to develop noise abatement and compatibility programs, called Part 150 Noise Compatibility Planning Studies. The Port was one of the first airports in the country to undertake a Noise Compatibility Study, which developed the Noise Remedy Program. The Noise Remedy Program has formalized the Port's program of noise reduction, including the acquisition of the most severely affected residences, as well as the insulation of over 9,300 homes.

In 1992, the Port updated its Part 150 Noise Compatibility Study based on the recommendations of the Noise Mediation Process. In 1997, the Port began a second update to the Plan. That Study was completed in 2002 with the FAA's issuance of a record of approval concerning 17 actions reflecting the earlier Part 150 Study recommendations. That Plan prepared official Noise Exposure Maps (NEMs) for Sea-Tac for 1998 and 2004 conditions and also resulted in a number of amended or new measures to help reduce aircraft noise in the communities near the Airport. Some of those programs included developing a 'fly-quiet' program that encourages airlines to follow the procedures and to choose quieter aircraft to operate at the Airport. Another element of that Study was some additional sound insulation and acquisition measures for areas impacted by aircraft noise.

Since the completion of the first Part 150 Study in 1985, the Port has spent over $400 million total on noise mitigation programs. Though the total amount spent varied on a year to year basis, during the past 10 years from 2001 through 2010, the Port has spent over $192 million, including.

- Residential Sound Insulation: $52,435,000 total
- School Sound Insulation: $55,125,000 total
- Property Acquisition: $84,812,000 total

In 2009, the Port initiated an update to the Noise Compatibility Plan that would improve the earlier recommendations and address the third runway, which began operation in November 2008. After conducting the requisite analysis, the Port recommended the proposed Plan contains 23 measures designed to reduce noise impacts from aircraft operating at Sea-Tac

Airport. The draft Plan and recommendations were presented to the Port Commission in January 2013. Upon completion of the SEPA process, the Plan will be presented to the Commission for possible adoption. This SEPA checklist evaluates the impact of adopting the Plan and implementing the recommendations. However, since detailed information is not available for all measures within the Plan and because some measures involve changes in plans and policies rather than specific construction, this checklist is considered a "non-project" checklist. Additional future environmental review of some measures within the Plan may be required.

The Noise Compatibility Plan consists of the 23 measures listed below and described in the supplemental information Appendix A. Many of the measures listed below do not require SEPA review (per WAC 197-11-305(b)), but are included to present the cumulative effects of the Noise Compatibility Study recommendations. The Noise Compatibility Study noise mitigation measures are categorized as one of the following:

a) Measures that are a continuation of existing measures with some modifications;

b) new measures now to be included as part of the Port's established noise mitigation program; and

c) program management measures such as employee staffing and computer equipment and resources, which assist the Port in implementing and managing the noise program.

The recommendations include:

1. Measure A-1: Explore Limited Rescheduling of Nighttime Flights
2. Measure A-3: Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track
3. Measure A-10: Maintenance Run-up Regulations
4. Measure A-11: Preferential Runway Use
5. Measure A-12: Development/ Implementation of a Fly Quiet Program
6. Measure A-15: Use of FMS Procedures
7. Measure A-16: Use of Ground Equipment
8. Measure M-2a: Standard Insulation
9. Measure M-2b: Insulation of Schools
10. Measure M-5: Property Advisory Service
11. Measure M-6: Local Government Remedy Support
12. Measure M-7: Funding for Land Use/Noise Compatibility Planning
13. Measure M-11: Approach Transition Zone (ATZ) Acquisition
14. Measure M-12: Prepare Cooperative Development Agreements
15. Measure A-18: Construct a Ground Run-Up Enclosure (GRE) on the airport to minimize run-up noise.
16. Measure A-19: Expand the Fly Quiet Program
17. Measure M-14: Sound insulate eligible owner-occupied multi-family units (condominiums) within the modified noise remedy boundary
18. Measure M-15: Sound insulate eligible tenant-occupied multi-family units (apartments) within the modified noise remedy boundary
19. Measure M-16: Offer avigation easements to owners of individual lots in which mobile

homes are located within the modified noise remedy boundary

20. Measure M-17: Initiate a formal study to evaluate the noise levels at churches/places of worship located within the modified noise remedy boundary for eligibility for sound insulation
21. Measure P-1: Evaluate and Upgrade Noise Monitoring and Flight Tracking System
22. Measure P-2: Periodically review and, if necessary, update the NEMs and the NCP
23. Measure P-3: Continue to operate the Noise Office

Because of shrinking noise exposure contours, the Port proposes to reduce the size of the Noise Remedy Program boundaries to include the area shown in Figure 1.

The above recommendations were identified after the following evaluation process. Existing and projected future noise levels from activity at Sea-Tac Airport were identified. Noise exposure contours illustrating the locations of various intensities of noise were mapped. The residential units and estimated residents within the various noise contour areas were quantified. These maps are referred to as the noise exposure maps (NEMs). Figures 2 and 3 shows the existing and future NEMs respectively.

Methods to reduce noise impacts within the study area were developed based on FAA guidance, comments from members of Technical Review Committee,[1] and comments from the general public. The Port and consultant team conducted four (4) public workshops, and six (6) meetings of a Technical Review Committee to receive input on various noise abatement and land use compatibility actions. In addition, Port staff attended nine (9) Highline Forum meetings to brief local elected officials and the public and obtain study input. The Highline Forum is a Southwest King County regional assembly that includes elected representatives from Des Moines, Burien, Normandy Park, SeaTac, Tukwila, Federal Way, and the Highline School District and the Port of Seattle.

Weighing all of the information received and the analysis of the actions, the Port developed a set of recommendations to be considered for adoption by the Port of Seattle Commission. The document entitled *Draft Seattle-Tacoma International Airport Part 150 Noise Compatibility Study Update* is available at http://www.airportsites.net/SEA-part150/draft.htm.

[1] Members of the Technical Review Committee included: Cities of Federal Way, SeaTac, Des Moines, Tukwila, and Burien; Alaska Airlines; Horizon Air; FAA (Air Traffic and Airports Division); Puget Sound Regional Council; Boeing Field; WSDOT; and King County. Information on the Part 150 Technical Review Committee membership and meetings is included in Appendix B of the *Draft Seattle-Tacoma International Airport Part 150 Noise Compatibility Study Update,* which is available at http://www.airportsites.net/SEA-part150/draft.htm

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Sea-Tac Airport is located in southern King County, Washington, 12 miles south of downtown Seattle. The proposed noise compatibility plan would affect residences within the 65 DNL noise exposure contour from Sea-Tac International Airport. This area consists of lands located within the cities of SeaTac, Des Moines, Burien, and unincorporated King County, as shown in Figure 1.

B. ENVIRONMENTAL ELEMENTS

The recommendations of the Noise Compatibility Plan consist of measures to be implemented within the secured portions of the Airport Operations Area (AOA) and measures proposed for areas beyond the AOA. Actions that may involve construction or demolition within the Airport AOA consist of construction of preconditioned air/400-hertz (Measure A-16) projects, and construction of a Ground Run-up Enclosure (Measure A-18). Projects off-airport involving construction or demolition, include: sound insulation of eligible homes or schools (Measures 2a and 2b), continued voluntary acquisition and demolition of homes in the southern Approach Transition Zone (Measure M-11), and sound insulation of certain eligible multi-family units (Measure M-14, and M-15). Future redevelopment of lands acquired by the Port's Noise Compatibility Plan may occur. The Plan recommendations include designating these areas for noise compatible uses in the applicable land use plans and zoning codes.

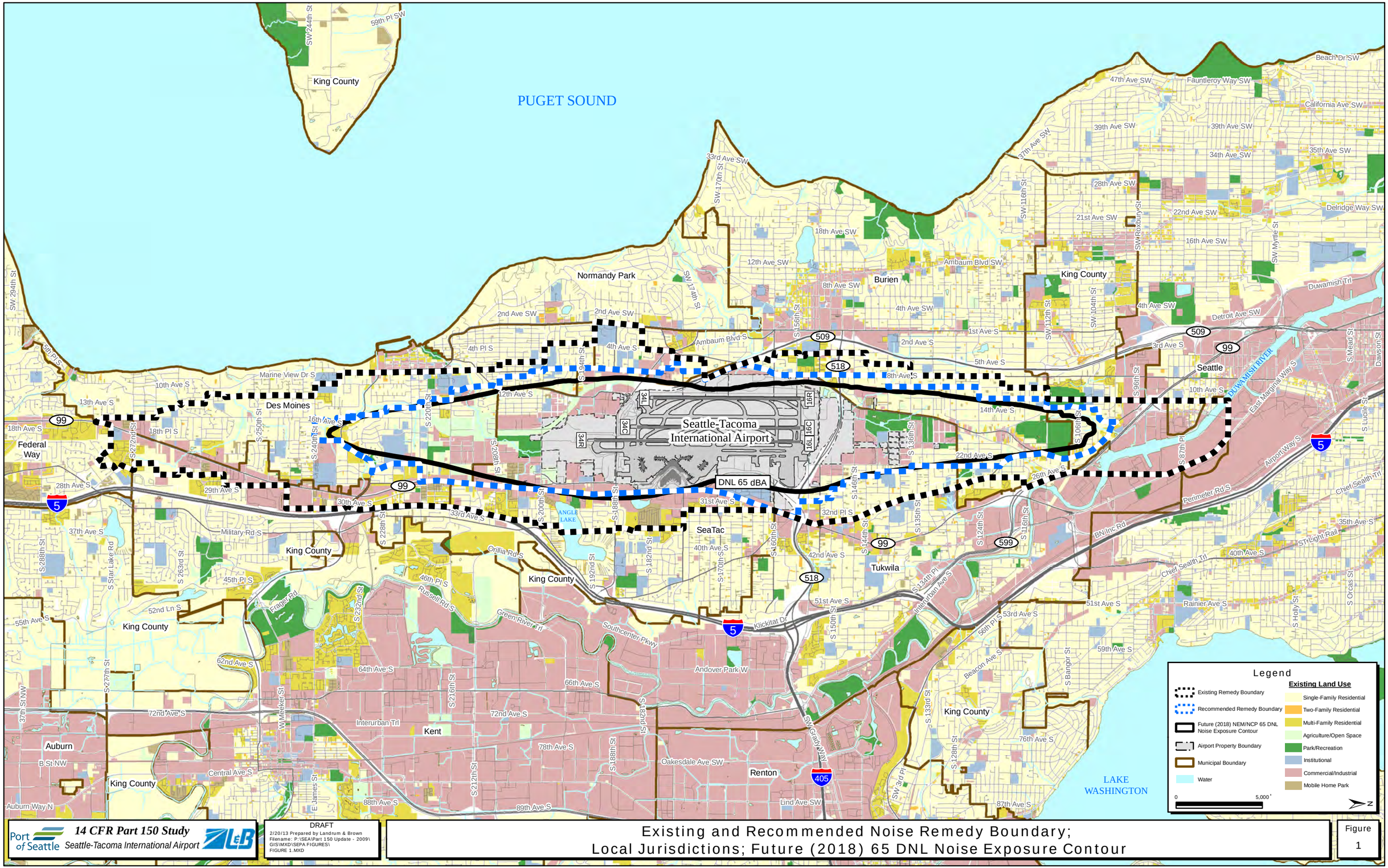
1. EARTH

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other: varies_____.

As a programmatic document, the Plan does not include information concerning specific site descriptions. The Airport operations area at Sea-Tac Airport is flat. However, the terrain to the west, south and north of the airfield becomes hilly, and in some cases, consists of steep slopes. Residential areas around the Airport in which the Noise Compatibility Plan would be implemented vary from flat to rolling hills.

b. What is the steepest slope on the site (approximate percent slope)?

Within the Airport noise exposure contours, slopes can reach as high as 50%. However, areas proposed for construction or demolition associated with implementing the Noise



Port of Seattle — *14 CFR Part 150 Study* — Seattle-Tacoma International Airport — LEB

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2/20/13 Prepared by Landrum & Brown
Filename: P:\SEA\Part 150 Update - 2009\GIS\MXD\SEPA FIGURES\FIGURE 1.MXD

Existing and Recommended Noise Remedy Boundary; Local Jurisdictions; Future (2018) 65 DNL Noise Exposure Contour

Figure 1

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PUGET SOUND

Normandy Park

Burien

King County

Des Moines

Seattle-Tacoma International Airport

SeaTac

Tukwila

Kent

Renton

Seattle

DNL 75 dBA

DNL 70 dBA

DNL 65 dBA

Legend

Existing (2013) Baseline Noise Exposure Contour

Airport Property Boundary

Municipal Boundary

Water

Existing Land Use

Single-Family Residential

Two-Family Residential

Multi-Family Residential

Agriculture/Open Space

Park/Recreation

Institutional

Commercial/Industrial

Mobile Home Park

0 3,500 '

N

Port of Seattle

14 CFR Part 150 Study

Seattle-Tacoma International Airport

LeB

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2/20/13 Prepared by Landrum & Brown

Filename: P:\SEA\Part 150 Update - 2009\GIS\MXD\SEPA FIGURES\FIGURE 2.MXD

Contour: SEA2013Noise-Contours

Existing (2013) Noise Exposure Map

Figure 2

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PUGET SOUND

Seattle-Tacoma International Airport

DNL 75 dBA

DNL 70 dBA

DNL 65 dBA

Normandy Park

Burien

King County

Des Moines

SeaTac

Kent

Tukwila

Renton

Seattle

Legend

Existing Land Use

- Future (2018) NEM/NCP Noise Exposure Contour
- Airport Property Boundary
- Municipal Boundary
- Water
- Single-Family Residential
- Two-Family Residential
- Multi-Family Residential
- Agriculture/Open Space
- Park/Recreation
- Institutional
- Commercial/Industrial
- Mobile Home Park

0 3,500 '

N

Port of Seattle

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2/20/13 Prepared by Landrum & Brown

Filename: P:\SEA\Part 150 Update - 2009\GIS\MXD\SEPA FIGURES\FIGURE 3.MXD

Contour: SEA2018Noise-Contours

Future (2018) NEM/NCP Noise Exposure Map

Figure 3

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Compatibility Plan are primarily flat or gently sloping.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Soils within the AOA consist of pre-existing or imported sand and gravels that were graded and compacted during construction of the Airport and access roads. Off-airport areas generally consist of pre-existing or imported material with underlying glacial till.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are no surface indications or history of unstable soil on the AOA where the Ground Run-up Enclosure (Measure A-18), and preconditioned air and gate electrification (Measure A-16) projects would occur. No areas of unstable soil have been identified in off-Airport areas but additional investigation may be conducted prior to demolition or removal of buildings. No excavation would be conducted in areas of unstable soil during the demolition of homes in the south Approach Transition Zone (Measure M-11).

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Construction of the proposed measures within the AOA would likely involve minimal site grading/filling, except for one of the sites being considered for the Ground Run-up Enclosure. Following removal and demolition of buildings on off-Airport locations, minimal grading would be needed to stabilize the sites, which may include planting. Future development of the areas recommended for acquisition would likely require site grading. However, until specific development plans are known, the amount of grading or filling cannot be determined.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The potential exists for some erosion to occur during construction or demolition; however, erosion control and prevention measures would be undertaken to minimize that potential. Construction activities may include construction of the Ground Run-up Enclosure (Measure A-18), and completion of the Port's measure to install pre-conditioned air/gate electrification (Measure A-16). The Port's erosion control plan would minimize on-airport erosion.

Demolition activities include the removal of homes from the property acquired in the southern Approach Transition Zone (Measure M-11). As noted in Chapter Five of the Noise Compatibility Plan document, under the prior Part 150 Study, the Port acquired 69 residential parcels and 2 mobile home parks with the north Approach Transition Zone.

Through this program, acquisition could be completed on 16 single family residences and 6 apartment buildings in the southern Approach Transition Zone. Acquired homes would be demolished, the foundations removed, Underground Storage Tanks (if present) removed, and the areas graded and seeded. Security fencing would then be placed around the acquired land. The relatively level topography of the construction and demolition sites would reduce the potential for erosion to occur. In addition, the Port would propose to use best management practices (BMPs), including a sediment and erosion control plan to minimize erosion. After completion and restoration of adjacent vegetation the proposed measures are not expected to cause erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Few of the proposed actions would involve the development of additional impervious surface. Only the development of a Ground Run-up Enclosure (Measure A-18) has the potential to add impervious surface, if an existing impervious site is not used. However, this would likely be less than 5 acres of additional ground surface coverage, relative to about 4,000 acres of total airport-impervious surface. If acquisition and demolition of residential property occurs in the Approach Transition Zone (Measure M-11), implementation of the Plan would not change the imperious surface as the foundation would be left in place. At this time, redevelopment plans are not known, and as a result, additional environmental analysis would be expected as redevelopment plans are identified. As these acquired lands are re-developed, an increase in impervious surface could occur. The amount of pavement or building coverage would depend on the type and extent of future development.

h. Proposed measures to reduce or control erosion, or other impacts to the earth if any:

Measures to control erosion may include:

- Submittal of a Temporary Erosion and Sedimentation Control (TESC) Plan, the Stormwater Management Manual for Puget Sound, and any requirements from regulatory agencies;
- Designation of a Certified Professional in Erosion and Sediment Control representative to coordinate and schedule the installation of controls, features, and best management practices identified in the TESC;
- Place erosion control best management practices to minimize the amount of sediment that enters the stormwater collection system;
- Direct storm water away from exposed soils during construction;
- Restore vegetation disturbed during construction as soon as possible after project completion; and
- Consider the use of permeable surface to facilitate ground water infiltration.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Implementation of those Plan elements that involve construction or demolition would result in short-term construction-related air emissions such as dust and exhaust. Following completion, the installation of preconditioned air and 400-hertz gate electrification (Measure A-16) would reduce use of Auxiliary Power Units (APUs) and Ground Power Units (GPUs) and result in a noise reduction as well as an air emission reduction. APUs and GPUs emit Nitrogen Oxide that would be eliminated upon conversion to pre-conditioned air and gate electrification.

Demolition and future development of the acquired areas in the Approach Transition Zone would result in air emissions during construction and vehicle exhaust emissions upon completion. The quantity of air emissions, to be quantified in future environmental reviews, would depend on the level and type of development.
Plan measures could result in localized increases in air emissions (primarily from carbon monoxide) due to construction activities and possible temporary increased vehicular traffic/congestion associated with the proposed development. The proposed project has been designed to conform to the applicable regulations and standards of agencies regulating air quality in Seattle. These include the U.S. Environmental Protection Agency, Ecology, and the Puget Sound Clean Air Agency (PSCAA).

The proposed action is not expected to result in violations of ambient air quality standards either during construction or during long-term operation.

During construction, there may be a small increase in exhaust emissions and odors from construction vehicle and equipment exhaust, and a temporary increase in fugitive dust.

Review of Greenhouse Gas Emissions (GHG)

Attachment A is the Port's standard worksheet for considering greenhouse gas emissions. The worksheet responses help estimate the quantity of greenhouse gas emissions that will be created over the life span of a building project. This includes emissions associated with:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (embodied emissions).
- Energy demands created by the development after it is completed (energy emissions).
- Transportation demands created by the development after it is completed (transportation emissions).

In accordance with Ecology's guidance, including *Greenhouse Gas Emissions in SEPA Reviews* published in June 3, 2011, by Ecology, proposals will be presumed to be not significant for greenhouse gas emissions and thus no further mitigation for greenhouse gas emissions will be necessary if it is expected to result in fewer than 25,000 metric tons a year. See Attachment A. If future environmental review of project-level work results in an exceedance of this quantity, mitigation may be considered.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

In general, there are no off-site sources of emissions that would affect this proposal. A substantial amount of mobile source emissions occur due to vehicular travel in the Airport area, and associated with on-going airport operations.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Contractors performing construction, demolition or relocations associated with the Noise Compatibility Plan would be required to maintain and repair all equipment in a manner that reasonably minimizes emissions. The installation of pre-conditioned air and 400-hertz electrical power at the gates (Measure A-16) has, and would continue to result in a permanent reduction in air emissions from APUs and GPUs at the Airport.

3. WATER

a. *SURFACE*

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The headwater of Des Moines Creek is located roughly 1,000 feet south of the most southern portion of the Airport. Bow Lake is located across State Route 99, east of the Airport main terminal. Miller Creek and its tributaries are located west of the airfield. The Gilliam Creek basin, which drains to the Green River, is located east of the Airport. Puget Sound is located about 3 miles west of the Airport.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No such work is anticipated at this time; however, one of the sites being considered for the Ground Run-up Enclosure is adjacent to Des Moines Creek (See Attachment A, Site A). If development were to occur in close proximity to any water bodies, the Port would comply with all requisite Federal, State, and local water quality control requirements.

3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

No fill or dredge material would be placed in or removed from surface water or wetlands.

4) **Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

The measures within the Noise Compatibility Plan would not require surface water withdrawals or diversions.

5) **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

The measures within the Noise Compatibility Plan do not lie within a 100-year floodplain.

6) **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

The measures within the proposed Noise Compatibility Plan do not involve discharges of waste materials to surface waters. The only measure that might increase storm water runoff, due to the development of additional impervious surface, is the Ground Run-up Enclosure (Measure A-18). The Ground Run-up Enclosure facility, however, would be expected to drain to the Airport's Industrial Waste System or enter the stormwater system.

Future environmental studies of redevelopment proposals of Port land would consider the impact of changes in impervious surface on water quality, quantity, and discharges – which would likely consist primarily of stormwater runoff. Until specific development proposals are developed, such impacts cannot be described.

b. ***GROUND:***

1) **Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.**

Ground water would not be withdrawn for measures within the proposed Noise Compatibility Plan and no water would be discharged into ground water.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals … agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

The proposed Noise Compatibility Plan measures would not involve any discharge of waste materials to ground water.

c. *WATER RUNOFF* (INCLUDING STORM WATER):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Projects that are part of the proposed Noise Compatibility Plan involving construction within the Airport include: possible construction of a Ground Run-up Enclosure (Measure A-18), and the completion of the installation of pre-conditioned air/gate electrification (Measure A-16). Less than 5 acres of additional impervious surface would be developed as the base of the Ground Run-up Enclosure. Gate electrification and pre-conditioned air would not be expected to cause a change in impervious surface area.

Runoff from the Ground Run-up Enclosure proposed by the plan would consist exclusively of stormwater runoff. All construction activity would be conducted in accordance with a construction Stormwater Pollution Prevention Plan (SWPPP) as required under the Port's National Pollutant Discharge Elimination System (NPDES) permit. No changes to the stormwater collection system are proposed. Runoff from the proposed Ground Run-up Enclosure would flow to the IWS for treatment or to the Port's stormwater system, and subsequent discharge to Puget Sound.

Projects off airport property that are within the proposed Noise Compatibility Plan, involving construction or demolition include: the installation of sound insulation of homes or schools, and the demolition of homes that might be acquired in the southern Approach Transition Zone. At this time, redevelopment plans for the Approach Transition Zone are not known, and as a result, additional environmental analysis would be expected as redevelopment plans are identified. Stormwater runoff could increase as a result of these re-development plans, but until specific development plans are identified, the specific impacts cannot be defined.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste materials would enter local ground or surface waters as a result of the measures within the proposed Noise Compatibility Plan.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

During construction of any recommendations within the proposed Noise Compatibility Plan, the contractor would be required to have a Stormwater Pollution Prevention Plan, including temporary erosion control and sedimentation measures. This plan would include a program of Best Management Practices (BMPs) such as diverting surface water runoff from erodible areas, mulching, netting, and proper grading of exposed areas; and properly storing and handling of potentially hazardous materials to prevent accidental spills. The contractor would also submit a Contractor Erosion Control Plan (CECP) for approval. The CECP shall include all the erosion and sedimentation control features required by: (1) the project specifications, (2) the Temporary Erosion and Sedimentation Control Plan, (3) Stormwater Management Manual for the Puget Sound Basin, and (4) regulatory agencies.

4. PLANTS

a. Check or circle types of vegetation found on the site:

x	**deciduous tree: alder, maple, aspen, other**
x	**evergreen tree: fir, cedar, pine, other**
x	**shrubs**
x	**grass**
___	**pasture**
___	**crop or grain**
___	**wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**
___	**water plants: water lily, eelgrass, milfoil, other**
___	**other types of vegetation**

b. What kind and amount of vegetation will be removed or altered?

Implementation of the proposed Noise Compatibility Plan is not expected to result in substantial removal or alteration of vegetation. Construction of the proposed Ground Run-up Enclosure (a facility that would be less than 5 acres in size), could require removal of existing landscaping in the area. Demolition or relocation of the housing in southern Approach Transition Zone may also result in the removal of landscaping and vegetation cover. Plantings would occur to control erosion.

c. List threatened or endangered species known to be on or near the site.

No threatened or endangered plant species are known to occur on the project site of any measures within the Noise Compatibility Plan – See also 5b below.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The Port would take reasonable steps to preserve native plants and landscaping at off-airport locations. It is also likely that plantings would occur in areas disturbed to ensure stabilization of the site. In addition, future development that would occur on land acquired would be expected to contain appropriate landscaping.

5. ANIMALS

a. Circle any birds and animals that have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other: rodents
fish: bass, salmon, trout, herring, shellfish, other:

b. List any threatened or endangered species known to be on or near the site.

Fish species listed under the federal Endangered Species Act that may occur in the Des Moines and Miller/Walker Creek estuaries and in Gilliam Creek include Puget Sound Chinook salmon and coastal-Puget Sound bull trout. Critical habitat for these species is present in the near shore areas adjacent to the stream mouths of Des Moines and Miller Creeks.

Prior environmental studies conducted by the Port of Seattle concerning development at Sea-Tac Airport has indicated there are no threatened or endangered species on airport property. The 2009 Comprehensive Development Plan Environmental Assessment evaluated the impact of airport development and noted that only one endangered or threatened bird species has been observed in the area (the bald eagle). Although bald eagles may have been observed in the vicinity of the Sea-Tac Airport on occasion, the measures associated with the proposed Noise Compatibility Plan are not expected to alter their occasional use of the airport area. No nest sites or roost sites are known to occur within the likely sites of the proposed Noise Compatibility Plan measures. Vegetation removal associated with any measure is not expected to affect habitat or food resources of bald eagles. The primary foraging areas for this species are along the shores of Angle Lake, Puget Sound, and the Green River.

Several threatened or endangered species, as well as candidate species are known to use the vicinity of the Airport. The Port, under direction from the FAA, prepared a biological assessment concerning the impact of the Comprehensive Development Plan projects on listed species and found that the projects would have an affect, but would not likely adversely affect these newly listed species. Because of federal involvement in the implementation of the Noise Compatibility Plan, it is likely that a biological assessment

and consultation with these agencies could be required concerning the impact of the Noise Compatibility Plan. Such an effort would be conducted, if required, in compliance with the National Environmental Policy Act.

c. Is the site part of a migration route? If so, explain.

The airport lands, and lands in the immediate airport vicinity, are not part of any known migration routes.

d. Proposed measures to preserve or enhance wildlife, if any:

No preservation or enhancement measures are proposed. The proposed Noise Compatibility Plan measures are not expected to attract wildlife.

6. ENERGY AND NATURAL RESOURCES

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

During construction, the measures within the Noise Compatibility Plan that require construction or demolition would use electricity to provide power for construction tools, and construction vehicles would use diesel and gasoline fuels for operation.

Construction of the Ground Run-up Enclosure (Measure A-18) would cause a small increase in electricity to power lighting and systems, and (depending on the final site selected) might cause a slight increase in jet fuel consumption as aircraft taxi to the site. Until a specific location is selected for the Ground Run-up Enclosure, the specific impact on aircraft fuel consumption is not known. The 400-hertz gate electrification (Measure A-16) would result in an increased consumption of electricity, with a commensurate decrease in aircraft fuel consumption (from reduced APU use on aircraft and ground power units or GPU). The increase in electrical consumption can be accommodated by the airports existing electrical supply.

Removal of residential uses from the Airport area could result in a slight decrease in energy consumption in the short-term. However, it is anticipated that many of the residents who have their home acquired would find replacement homes in the area, which would offset any reduction in consumption. In the long-term, when the acquired residential areas are redeveloped, an increase in energy consumption could be anticipated, as commercial development would generate greater energy demands.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The proposed Noise Compatibility Plan measures would not affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

No energy conservation measures are needed for the proposed Noise Compatibility Plan measures.

7. ENVIRONMENTAL HEALTH

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

The proposed Noise Compatibility Plan measures are not expected to alter existing or future health hazards. However, three general types of environmental hazards could result from demolition of buildings. They include 1) asbestos emissions, 2) lead-based paints, and 3) suspect PCB containing components.

Asbestos Containing Materials - Some buildings that would be demolished in the Approach Transition Zone (Measure M-11) may have been constructed of a variety of asbestos containing materials (ACM). For single family properties that might be acquired in the Approach Transition Zone, the Port tests and manages any asbestos materials. Homes are tested for regulated materials, including lead and asbestos. Asbestos is a hazardous and toxic air contaminant. Human health risk occurs when asbestos is released into the air. When inhaled, it can cause lung cancer, pleural mesothelioma, peritoneal mesothelioma, or asbestosis. Since asbestos is more likely to become airborne when disturbed, it is left in place and maintained in good condition unless removal is necessary for the purposes of renovation or demolition. Removal of ACM's would be done in strict compliance with all applicable federal, state and local regulations, standards and codes governing asbestos abatement, and in accordance with the "Standards of the Industry".

Lead Paint - Some buildings to be demolished may contain lead paint. Those paints containing five percent (5%) or more lead by weight are considered as lead containing.

PCB Containing Components - PCB containing components may include fluorescent light ballasts.

Spills and Other Releases - The potential for spill or release of other hazardous or toxic substances could be present during demolition and paving. The most probable time for an occurrence is during the operation of construction equipment and vehicles and transport of petroleum and paving products. Leakage of petroleum products, including fuels, oil, grease, hydraulic fluids, and lubricants from construction equipment. These substances could drain indirectly via stormwater flows. The extent of impacts resulting

from accidental discharge of petroleum products during construction depends upon the amount and duration of the spill. Port of Seattle construction practices are intended to minimize the risk of accidental spills or discharges.

Underground Storage Tank Removal - Underground storage tanks may be encountered during demolition. These tanks would be removed and any contamination remediated in accordance with all applicable laws and regulations.

1) Describe special emergency services that might be required.

No special emergency services are expected as a result of implementation of the proposed Noise Compatibility Plan. Construction-related accidents or injuries may require response from local fire, police, air units, or ambulances. The Port maintains it own police force and firefighting and rescue units that would be called upon for these types of incidents. The Port also maintains a trained response team available to respond at all times to any spill or loss of contaminated or hazardous materials.

2) Proposed measures to reduce or control environmental health hazards, if any:

State regulations regarding safety and handling of hazardous materials would be enforced during the construction process. Any equipment refueling associated with construction activity would be done in an area where a spill could be quickly contained and the risk of hazardous material entering surface or local groundwater is minimized. Contaminated waste or debris from past industrial activities that are encountered during the demolition would be identified during site preparation and classified and disposed of in accordance with existing state and federal regulations, as applicable.

Removal of ACM's would be done in strict compliance with all applicable federal, state and local regulations, standards, and codes governing asbestos abatement, and in accordance with the "Standards of the Industry". Removal and disposal of lead containing materials would be done in strict compliance with all applicable federal, state and local regulations, standards, and codes governing lead abatement, and in accordance with the "Standards of the Industry". Removal and disposal of PCB containing materials would be done in strict compliance with all applicable federal, state and local regulations, standards, and codes governing PCB abatement, and in accordance with the "Standards of the Industry". Underground storage tanks encountered during construction and excavation would be removed in accordance with local, state and federal guidelines.

Measures to reduce environmental hazards include the following:

- A licensed hazardous waste hauler would transport hazardous waste. Non-hazardous waste solutions would be hauled in conformance with requirements of federal, state, and local regulations.
- All connections to the surface drainage system from the site would be closed in the event of a spill or discharge.
- Erosion control facilities would be installed prior to performing earthwork on the site, and maintained in working order throughout the project.
- Employees are instructed in recognition of contaminated soils. If contaminated soil is discovered, the supervisor and resident engineer would be notified. Any contaminated soil would be handled according to all local, state and federal laws.

- Removal of roofing materials would not require an asbestos abatement contractor. As long as the asbestos containing material being removed is wet during removal and is disposed of as asbestos waste, a demolition contractor may perform the work. Permits with PSCAA are still required and area air monitoring is highly recommended.
- The DOE and local landfills would be consulted on a case-by-case basis for the disposal of lead containing paint components, asbestos materials and PCB containing components.

b. ***NOISE***

The purpose of the proposed Noise Compatibility Plan is to further reduce existing and future aircraft noise exposure from Seattle-Tacoma International Airport. For a complete discussion of potential noise impacts related to the proposed measures, see **Appendix A**, *Proposed Part 150 Noise Compatibility Plan*.

1) What types of noise exist in the area, which may affect your project (for example: traffic equipment, operation, other)?

In general, the dominant source of noise in the airport environs is generated by aircraft operations. The proposed Plan is intended to reduce the impact of aircraft noise on the surrounding environs.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Federal Aviation Regulation Part 150 requires Noise Compatibility Planning studies to use the Day-Night Average Sound Level (DNL) noise metric to evaluate the effects of aircraft noise. The DNL is a noise measure used to describe the average aircraft noise levels over a 24-hour period, typically an average day over the course of a year. The DNL weights aircraft operations that occur between the hours of 10 p.m. and 7 a.m. to be 10 decibels louder than they actually are to account for increased annoyance.

Implementation of the proposed Plan would reduce the noise impact of the Airport. Because the existing Noise Compatibility Plan was developed many years ago for Sea-Tac Airport and its environs, the recommendations of this Part 150 Study do not make significant changes in the existing or anticipated future noise exposure, as defined by Federal Aviation Administration guidance (See FAA Order 1050.1E *Environmental Impacts: Policies and Procedures*). Table 2 lists the population and housing units located within the various significant noise exposure contours for 2018.

Table 2 - Housing, Population, and Noise Sensitive Facility Impacts

MITIGATION STATUS / LAND USE	NOISE CONTOUR BAND		
	65 - 70 DNL	70+ DNL	65 DNL and Greater
HOUSING UNITS (All Jurisdictions)			
Sound Insulation Completed			
Single-Family	2,293	0	2,293
Two-, Three-, or Four-Family Unit	108	0	108
Condominium	72	0	72
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	143	0	143
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	165	0	165
Apartment	729	0	729
Mobile Home	0	0	0
Not Eligible			
Single-Family	184	0	184
Two-, Three-, or Four-Family Unit	8	0	8
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	69	0	69
TOTAL HOUSING UNITS	3,771	0	3,771
ESTIMATED POPULATION			
TOTAL POPULATION	9,710	0	9,710
NOISE-SENSITIVE PUBLIC FACILITIES			
Schools	2	0	2
Churches / Places of Worship	6	0	6
Libraries	1	0	1
Hospitals	0	0	0
Nursing Homes	0	0	0

Notes: Estimated population based on average household size by U.S. Census tract data. Population rounded to the nearest 10. Eligibility for mitigation programs will be determined as program implementation moves forward.

Sources: King County Geographic Information System data; Port of Seattle Noise Remedy Program records; U.S. Census Bureau; Landrum & Brown analysis, 2012.

The recommendations of the proposed Noise Compatibility Plan are focused at addressing specific noise exposure conditions. The Ground Run-up Enclosure (Measure A-18), and the installation of ground power and pre-conditioned air (Measure A-16) are focused at reducing noise exposure from aircraft maintenance tests and aircraft use of Auxiliary Power Units (APUs) and Ground Power Units (GPUs). Construction noise activity associated with these improvements would be expected on a short-term basis. These noise sources include cranes, concrete saws, jackhammers, front-end loaders, and generators. The median noise level for most of the equipment that would likely be used at the project site would probably range from 75 to 85 dBA at a distance of 50 feet. Construction activity would occur between

7:00 am and 10:00 pm on weekdays and 9:00 am and 10:00 pm on weekends.

Many of the measures in the Noise Compatibility Plan are designed to continue the existing program of reducing the noise affecting residences, such as airline voluntary actions to reduce night activity (Measure A-1), and use of existing noise abatement flight procedures (Measure A-3 and A-11, A-12, A-15). Measures P-1 through P-3 are management program measures designed to assist the Port with monitoring its progress towards reducing aircraft noise exposure.

3) Proposed measures to reduce or control noise impacts, if any:

The sole purpose of the proposed Noise Compatibility Plan is to reduce the noise impact from activity at the Airport.

Several elements of the proposed Plan involve construction and their implementation would generate noise over a limited construction period. Construction noise generation would be kept to a minimum at all times by: (1) equipping air compressors with silencing packages, (2) equipping jackhammers with silencers on the air outlet, (3) preferring the use of equipment that can be electrically driven instead of gas or diesel, and (4) limiting hours of demolition activities and operation of equipment that produce significant noise to 7:00 am to 10:00 pm on weekdays and 9:00 am and 10:00 pm on the weekends. If heavy construction activities occur adjacent to noise sensitive land uses, temporary noise barriers may be installed to protect those land uses during the loudest construction events. Demolition and construction activities would have to comply with applicable state and local noise regulations.

8. LAND AND SHORELINE USE

a. What is the current use of the site and adjacent properties?

Communities that abut the City of SeaTac, in which the Airport is situated, are Des Moines, and Burien. Unincorporated portions of King County also abut the City of SeaTac. These communities, and others, may be directly or indirectly affected by operations at Sea-Tac Airport, especially by aircraft noise exposure. The Port's current noise remedy program boundary consists of the following uses in the area:

- Residential: 14,685 acres, or 49.5 % of the area
- Open space/agriculture: 4,955 acres or 16.7 % of the area
- Commercial/industrial: 3,740 acres or 12.6 % of the area
- Airports (Sea-Tac): 3,380 acres or 11.4 % of the area
- Community and public facilities: 815 acres or 2.7 % of the area
- Other: 2,065 acres or 7.0 % of the area

b. Has the site been used for agriculture? If so, describe.

Lands within the Airport were last used for agriculture in the late 1930s. Limited agricultural uses exist in the nearby communities.

c. Describe any structures on the site.

The proposed Ground Run-up Enclosure (Measure A-18) and the preconditioned air/400 hertz project (Measure A-16) would be located within the AOA. The site of the Ground Run-up Enclosure in relation to existing structures is not known. The preconditioned air/400 hertz project would occur in the existing central utility plant and on the apron adjacent to gates. Structures on the Airport consist of terminal, landside (roadways and parking lots), airside (runways, taxiways and apron), cargo and support facilities.

At off-site locations, structures include single-family residential uses, multi-family uses, commercial, and other types of uses.

d. Will any structures be demolished? If so, what?

Implementation of the land use compatibility actions could result in the voluntary acquisition and demolition of approximately 16 single family residential structures and six (6) apartment buildings located in the south Approach Transition Zone.

e. What is the current zoning classification of the site?

The AOA where several of the proposed Plan recommendations would be implemented is designated as Aviation Operations (AVO). Lands in the Approach Transition Zone are currently zoned residential. There are some areas of non-residential zoning in the Approach Transition Zones that would remain in existence and are compatible with airport operations.

f. What is the current comprehensive plan designation of the site?

The City of SeaTac is current updating its Comprehensive Plan. The designation of the Airport is Airport Use *(City of SeaTac Comprehensive Plan, December 1994*). Land uses in the vicinity of the Airport consist of commercial, residential, open space, etc.

g. If applicable, what is the current shoreline master program designation of the site?

The City of SeaTac Angle Lake Shoreline Master Program is within the airport vicinity.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

None of the properties affected by the proposed Noise Compatibility Plan within the Airport boundaries have been designated as environmentally sensitive. Off-airport land use activities would consist of demolition and removal of residences and would be conducted so as to avoid environmentally sensitive areas.

i. Approximately how many people would reside or work in the completed project?

The measures in the proposed Noise Compatibility Plan would not alter employment at the Airport or in the immediate vicinity in the short-term other than through construction employment associated with completing the proposed measures. Conversion of the residential areas to compatible uses, which could receive additional environmental study upon identification of a redevelopment plan, would be expected to change the employment patterns. However, the magnitude of the change would be dependent on the specific development proposal.

j. Approximately how many people would the completed project displace?

As mitigation for existing and future noise exposure and associated annoyances, the Port proposes to acquire 16 single family residences and 6 apartments within the southern Approach Transition Zone on a voluntary basis. The proposed Plan involves relocating people living within the areas most affected by aircraft noise where noise insulation is not feasible.

k. Proposed measures to avoid or reduce displacement impacts, if any:

The proposed Noise Compatibility Plan is recommended as mitigation for existing and future noise exposure. All relocations would be conducted subject to the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, which would compensate individuals for decent, safe, and sanitary replacement housing and associated relocation costs.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed Noise Compatibility Plan is recommended as a way to improve the compatibility of the Airport with surrounding land uses. The proposed measures would not cause adverse land use compatibility impacts.

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

In general, implementation of the Noise Compatibility Plan would not result in additional housing within the 65 DNL noise exposure contour. The lack of suitable replacement property for the acquisition of mobile or manufactured housing may result in the private development of additional residential properties; however, these properties would be expected to be located outside the 65 DNL, as shown in Figures 2 and 3. Current national and local economic conditions have resulted in lower housing costs, relative to costs in earlier years.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

The proposed Noise Compatibility Plan includes the following actions:

- Voluntary acquisition of residential properties and removal of 16 single family residential units in the Approach Transition Zone
- Voluntary acquisition of six (6) apartment buildings in the Approach Transition Zone.

In general, the residential properties within the Approach Transition Zone consist of lower-middle and middle-income residents.

c. Proposed measures to reduce or control housing impacts, if any:

Implementation of the Noise Compatibility Plan recommendations would be done in compliance with the Uniform Relocation and Real Property Acquisition Act of 1970.

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The Noise Compatibility Plan includes the construction of a Ground Run-up Enclosure (Measure A-18). The Ground Run-up Enclosure would be approximately 30 feet high and consist of metal walls that deflect sound upward.

b. What views in the immediate vicinity would be altered or obstructed?

At this time the specific site of the Ground Run-up Enclosure has not been identified. Sites that have been considered indicate that no views in the immediate vicinity would be

obstructed. The Ground Run-up Enclosure would be within the AOA and is expected to be of a similar scale to the surrounding airport development. As a site plan for the Ground Run-up Enclosure has not been developed, it is unclear as to the effect that it would have on surrounding aesthetics. However, it would be expected to be consistent with the aviation facility surroundings.

Removal of residential structures in the Approach Transition Zone would have an effect on the aesthetics of the area. Initially these structures would be removed and the land would become vacant until a study is conducted for compatible commercial development. Such a plan would then be subject to the requisite environmental studies and the aesthetic qualities identified. The aesthetic qualities of new facilities would depend on the proposed land use and project design plan.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Sea-Tac International Airport must adhere to the Landscape Design Standards as requirements of the Interlocal Agreement with the City of SeaTac. Based on the Standards and the potential locations of Ground Run-up Enclosure, landscaping is not required because the potential locations fall within the Airport Operating Area and are No Landscaping Zones

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The measures in the proposed Noise Compatibility Plan, in general, are not expected to result in additional lighting or changes in existing lighting. Depending upon the location of the Ground Run-up Enclosure (Measure A-18), lighting may be required to enable aircraft to safely be moved into and out of the enclosure.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

The completed Noise Compatibility Plan measures are not expected to affect light or glare in the area.

c. What existing off-site sources of light or glare may affect your proposal?

Off-site sources of light or glare would not affect the proposed measures. Any new lighting that might be required would conform to the Port's Interlocal Agreement with the City of SeaTac or other local requirements.

d. Proposed measures to reduce or control light and glare impacts, if any:

All lighting near the airport fence line would contain appropriate baffles to ensure minimal exposure off-airport.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

No public parks exist within airport property. However, the Port has leased lands south of the runway system to a tenant for use as a golf course. The proposed Noise Compatibility Plan is not anticipated to have an adverse noise impact on parks or recreational facilities that are affected by noise above 65 DNL (the level identified by the FAA as those where recreational incompatibilities could occur).

b. Would the proposed project displace any existing recreational uses? If so, describe.

The measures in the proposed Noise Compatibility Plan would not displace existing recreational uses.

c. Proposed measures to reduce or control impacts, if any:

Measures to reduce impacts to recreation would not be necessary.

13. HISTORIC AND CULTURAL PRESERVATION

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

The Washington State Department of Archaeology and Historic Preservation (DAHP) historic inventory database was searched on February 16, 2013 for national, state, or local preservation registers. No historic or cultural resources were identified on or next to the site. The King County Historic Resource Inventory was searched on February 16, 2013 and no historic or cultural resources were identified on or next to the site.

There are no known historic or cultural resources listed on any preservation registers for existing Airport property. A number of national, state and local historic sites are located in the immediate vicinity of the Airport, some of which are affected by existing and future significant noise exposure. These facilities primarily consist of homesteads or facilities occupied by early settlers of the area. Implementation of the Proposed Noise Compatibility Plan would reduce noise levels at locations within the noise exposure contours.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

There are no known historic or cultural resources on the Airport or on the sites of the Approach Transition Area. A number of national, state and local historic sites are located in the immediate vicinity of the Airport, some of which are affected by existing and future significant noise exposure. These facilities primarily consist of homesteads or facilities occupies by early settlers of the area.

c. Proposed measures to reduce or control impacts, if any:

Measures to reduce impacts to historic or cultural resources are not expected to be necessary. The proposed measures in the Plan would reduce noise levels within the immediate Airport vicinity.

14. TRANSPORTATION

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Sea-Tac Airport is located in southern King County, Washington, 12 miles south of downtown Seattle. The Airport is generally bound by State Route (SR) 99 to the east, SR 509 and 12th Avenue to the west, SR 518 to the north, and South 200th Street to the south. Within the 65 DNL noise contour, primary access occurs from SR 509, SR 518, Interstate 5, and First Avenue, as well as numerous major arterials.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The area has public transit service provided by King County and by Sound Transit Light Rail.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The proposed Noise Compatibility Plan would not result in the development of additional parking spaces at the Airport, nor, in general is it expected to result in a reduction in parking.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

No new roads or streets are anticipated as a result of the proposed Noise Compatibility Plan,

nor are improvements to existing roads/streets proposed. If surface transportation improvements are required, they would be done in accordance with Federal, state, and local requirements.

e. Will the project use (or occur in immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The proposed Noise Compatibility Project measures would occur at or in the vicinity of the Airport.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The proposed Noise Compatibility Plan is not expected to generate additional vehicular trips except during construction or demolition. At this time is it not possible to quantify the specific number of trips, but they would be expected to occur during the shift change hours of 6-8 am and 3-5 pm.

Redevelopment of the acquired residential areas (in the Approach Transition Zone) to a compatible land use would generate additional vehicular trips. The number of trips would depend on the type and level of development and would be the subject of requisite future environmental reviews.

g. Proposed measures to reduce or control transportation impacts, if any:

None are anticipated to be needed.

15. PUBLIC SERVICES

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

The proposed Noise Compatibility Plan is not expected to result in the need for additional public services. With the implementation of the Approach Transition Zone acquisition recommendations (approximately 22 residences), a slightly reduced service demand may initially be experienced. As the objectives of the Port and local cities are to return these properties to tax roles, demands in the long-term would not be expected to change materially.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No impacts on public services are anticipated.

16. UTILITIES

a. Circle/underline utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

All utilities are available at the Airport except septic systems.

b. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity that might be needed.

The Ground Run-up Enclosure (Measure A-18) would require electricity for long-term operation. Existing utilities, such as onsite electrical service, would be used for the Ground Run-up Enclosure. Operation of other elements of the proposed Plan would not require additional utilities. Similar services would be obtained during construction or demolition in the surrounding communities. Utilities and infrastructure would be provided onsite as needed to support construction and structural requirements for the proposed measures in all construction site areas.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Date Submitted: **April 8, 2013**

D. SUPPLEPLEMENTAL SHEET FOR NONPROJECT ACTIONS

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

The Plan describes the Port's proposed approach to reducing airport noise impacts. The responses to Items D (1) through (6) below draw from the environmental checklist, Items A, Background, and B. Environmental Elements, and focus on elements of the Plan as it pertains to potential direct, indirect and cumulative environmental impacts.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The purpose of the proposed Noise Compatibility Plan measures is to reduce aircraft noise and increase the compatibility of the airport with the surrounding environs. Emissions would in general be expected to be the same or less with the proposed measures. No changes in the storage and or release of toxic and hazardous substances is expected.

Proposed measures to avoid or reduce such increases are:

The Plan is designed to reduce aircraft noise. The Port is committed to deploying its list of Best Management Practices to reduce any construction related effects.

2. How would the proposal be likely to affect plants, animals, fish, or marine life

The proposed project is not expected to have an adverse effect on plants, animals, fish, or marine life. Properties that would be affected are already disturbed.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The proposed Noise Compatibility Plan would not be expected to affect plants, animals, fish, or marine life because the Plan is intended to be consistent with existing land and shoreline use.

3. How would the proposal be likely to deplete energy or natural resources?

The proposed measures are not expected to consume any other natural resources other than energy. In total the proposed measures would be expected to result in a reduction in energy consumption, as the availability of ground power/400 hertz at the gates would increase slightly the airport-related electrical consumption but would offset this energy consumption by reducing the fuel burned by Auxiliary Power Units.

Proposed measures to protect or conserve energy and natural resources are:

Not expected to be needed.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The proposed measures would not be expected to affect parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands.

Proposed measures to protect such resources or to avoid or reduce impacts are:

Not expected to be needed because the Plan is intended to be consistent with local, state and federal laws and requirements for protection of the environment.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The proposed measures would not be expected to affect shoreline or shoreline use. The proposed Plan is designed to increase the compatibility of the Airport with the surrounding environs.

Proposed measures to avoid or reduce shoreline and land use impacts are:

Not expected to be needed because the Plan is intended to be consistent with existing land and shoreline use.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

No material changes in demands for transportation, or public services and utilities are expected.

Proposed measures to reduce or respond to such demand(s) are:

Not expected to be needed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The proposed Noise Compatibility Plan measures would not be in conflict with any known local, state or federal laws or requirements. The Plan is intended to be consistent with local, state and federal laws and requirements for protection of the environment.

ATTACHMENT A

Greenhouse Gas Emissions Worksheet

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GHG Emission Sources (CO2, CH4, N2O, HFCs, PFCs, SF6)[1]	**What sources are likely from the proposal? *List specific type of activities, and duration of emissions***	**What is the quantitative or qualitative assessment of those emissions?**	**What available mitigation will avoid or reduce those emissions?**
On-Road Mobile Sources	Not applicable	Not applicable	
Non-Road Mobile Sources	Reduce aircraft APU use from installation of ground power	Reduce aircraft APU use from installation of ground power	Measure is a mitigation
Stationary Combustion	Not applicable	Not applicable	
Industrial Processes	Not applicable	Not applicable	
Fugitive Emissions	Not applicable	Not applicable	
Agricultural Emissions	Not applicable	Not applicable	
Land Disturbance	Not applicable	Not applicable	
Purchased Electricity and Steam	Installation of preconditioned air and gate power	Installation of preconditioned air and gate power would increase purchased electricity. However, a greater reduction in emissions would occur from reduced APU use.	Measure is a mitigation
Construction	Construction of the ground run-up enclosure (duration estimated 6 months) and demolition in the southern approach transition area (duration unknown).	Temporary/short-term energy use associated with constructing project is not expected to be significant.	None
Extraction of Purchased Materials	Not applicable		
Processing of Purchased Materials	Not applicable		

GHG Emission Sources (CO2, CH4, N2O, HFCs, PFCs, SF6)[1]	**What sources are likely from the proposal?** ***List specific type of activities, and duration of emissions***	**What is the quantitative or qualitative assessment of those emissions?**	**What available mitigation will avoid or reduce those emissions?**
Transportation of Purchased Materials	Not applicable		
Employee Commute	Not applicable		
Other Mobile Emissions	Not applicable		
Water Use and Wastewater Disposal	Not applicable		
Waste Management	Not applicable		
Product Use	Not applicable		

CH4	Methane	Landfills, production and distribution of natural gas & petroleum, fermentation from the digestive system of livestock, rice cultivation, fossil fuel combustion, etc.
N2O	Nitrous Oxide	Fossil fuel combustion, fertilizers, nylon production, manure, etc.
HFC's	Hydrofluorocarbons	Refrigeration gases, aluminum smelting, semiconductor manufacturing, etc.
PFC's	Perfluorocarbons	Aluminum production, semiconductor industry, etc.
SF6	Sulfur Hexafluoride	Electrical transmissions and distribution systems, circuit breakers, magnesium production, etc.

ATTACHMENT B

Ground Run-Up Enclosure Potential Sites - Map

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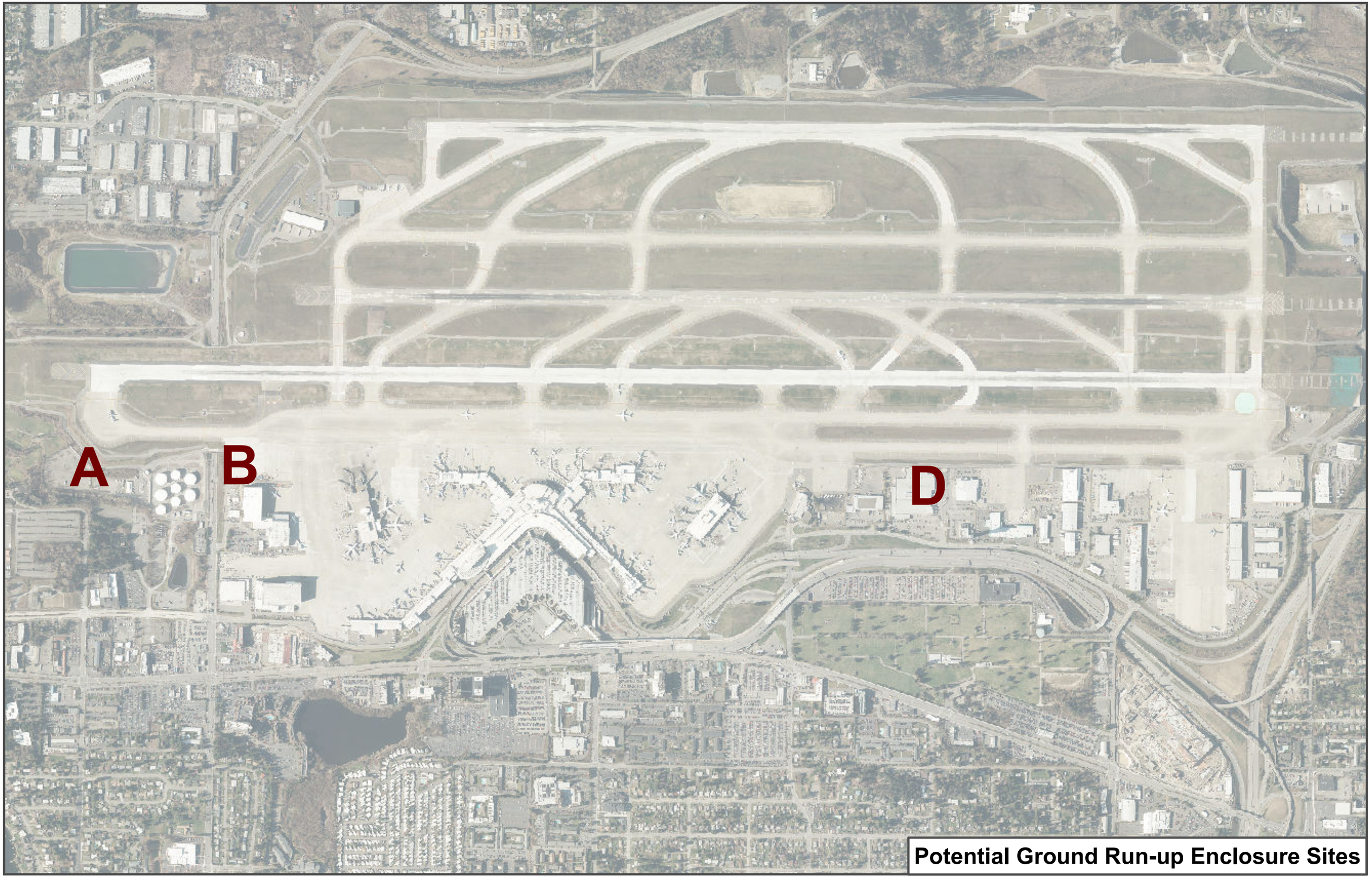
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Potential Ground Run-up Enclosure Sites

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ATTACHMENT C

Seattle - Tacoma International Airport

Proposed Part 150 Noise Compatibility Plan Summary

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CHAPTER SIX
NOISE COMPATIBILITY PROGRAM

The culmination of the 14 Code of Federal Regulations (CFR) Part 150 planning process is the development of a set of measures designed to enhance the compatibility between an airport and its surrounding environs. This chapter presents previous Part 150 Noise Compatibility Program (NCP) measures for Seattle-Tacoma International Airport (Sea-Tac Airport) that are either being continued as is, continued with modification, or are not being carried forward; as well as new measures that are being recommended. Collectively, these measures are referred to as the 2013 NCP update for Sea-Tac Airport (2013 NCP update). These measures include abatement, mitigation, and program management measures designed to reduce or mitigate the impact of aircraft noise upon the surrounding community and enhance the administration of the overall program. The measures recommended for implementation at Sea-Tac Airport have resulted from the planning process described throughout this document.

Chapter Five, *Alternatives*, includes a list of all alternatives assessed for this NCP update. **Chapter Seven, *Consultation***, contains a discussion of the public consultation process that was conducted for this 2013 NCP update. This process was integral in the development and evaluation of all NCP measures.

The NCP for Sea-Tac Airport was developed in 1985 and updated in 1993 and 2002. Collectively, the 1985, 1993, and 2002 NCP included 17 abatement measures. Of those 17 abatement measures, five have been completed, five are recommended to not be carried forward, and seven are recommended to be continued in this 2013 NCP update. The previous NCPs included 16 mitigation measures. Of those 16 mitigation measures, two have been completed, seven are recommended to not be carried forward, and seven are recommended to be continued. There are two new abatement measures, four new mitigation measures, and three new program management measures recommended for inclusion in this 2013 NCP update.

6.1 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS

The following section presents the recommended measures for this 2013 NCP update, including new measures, previously approved measures that are recommended to be continued, and previously approved measures that are recommended to not be carried forward. The measures are presented as a series of 'plates' that summarize pertinent information required about each of the measures per 14 CFR Part 150 guidance. This information includes:

- A description and the background and intent of the measure;
- The relationship to the previous (2002) NCP;
- The anticipated effect on land use compatibility;
- The party (or parties) responsible for implementation;

- The steps necessary for implementation, its anticipated cost, and the projected timing for implementation; and
- The effects, if any, to other planning programs and other measures.

Where helpful for clarification, an exhibit associated with the measure is provided. **Table 6-1, *Summary of 2013 Noise Compatibility Program Recommendations***, summarizes the measures recommended for this 2013 NCP update, including previously-approved measures that are being continued and recommended new measures. Note that numbering of new measures is continued from the previously-approved measures from the 1985, 1993, and 2002 NCPs. Previously-approved measures that are recommended to be continued do not require FAA re-approval and are included in the baseline condition. Measures that are recommended to not be carried forward in this NCP update require no further FAA action. More detailed information regarding each measure is included in the pages following Table 6-1. Measures that are complete, as identified in Chapter Five, are not included in this section. Several previous measures have been completed and are not discussed in this chapter. Information on completed measures can be found in Chapter One, Section 1.5 and Chapter Five, Sections 5.1 and 5.2.

Following the plates for individual program measures is an exhibit showing the 2013 NCP map which incorporates each of the recommended program measures, as well as a description of the population, housing, and noise-sensitive land use impacts associated with its full implementation by the year 2018 (see **Exhibit 6-2, *Future (2018) Noise Exposure Map/Noise Compatibility Program***). This exhibit, which includes the Future (2018) NEM/NCP noise exposure contour, constitutes the official NEM for the future five-year condition.

The final section of this chapter summarizes the preliminary cost estimate of implementing the 2013 NCP update and provides an implementation schedule for the program. As discussed previously, the approval of the 2013 NCP update by the FAA does not commit the FAA or the Port of Seattle (the Port) to the costs or the implementation schedule listed in this document. This information is provided here as a planning tool to assist in the implementation of the NCP.

Implementation of the abatement, corrective land use mitigation, and program management measures is at the discretion of the Port and subject to available funding from both the FAA and the Port. Modification of local plans or zoning ordinances in accordance with the recommended modifications to the Noise Remedy Boundary is solely at the discretion of local governments.

Table 6-1
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDATION AND FAA REQUESTED ACTION
CURRENTLY APPROVED ABATEMENT MEASURES						
Measure A-1: Explore Limited Rescheduling of Nighttime Flights	Port of Seattle, Airport Users	None	None	None	This measure has been implemented and is ongoing	**CONTINUE** to encourage voluntary limited scheduling of nighttime flights FAA Requested Action: No action by FAA is required.
Measure A-3: Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track	FAA, Aircraft Operators	None	None	None	This measure has been implemented and is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-7: Establish Noise Barriers/Run-up Enclosure	N/A	N/A	N/A	N/A	This measure has not been implemented	**Measure Not Being Carried Forward** and replaced with Measure A-18 FAA Requested Action: No action by FAA is required.
Measure A-8: Restrict Taxiing of Aircraft to/from Maintenance Areas during Nighttime Hours	N/A	N/A	N/A	N/A	This measure has not been implemented	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.

* Measures A-2, A-4, A-5, and A-6 are completed and therefore are not included in Table 6-1 or in the discussion following the table. For more information on those measures not being carried forward see Chapter One, Section 1.5 and Chapter 5, Sections 5.1 and 5.2.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
CURRENTLY APPROVED ABATEMENT MEASURES (CONTINUED FROM PREVIOUS PAGE)						
Measure A-10: Maintenance Run-up Regulations	Port of Seattle, Aircraft operators	Minimal administrative costs	None	Minimal	This measure has been implemented and is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-11: Preferential Runway Use	FAA ATC	None	None	None	This measure has been implemented and is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-12: Development/ Implementation of a Fly Quiet Program	FAA ATC	Minimal administrative costs	None	Minimal voluntary costs	This measure has been implemented and is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-13: Evaluate Increased Use of the Duwamish/ Elliott Bay Corridor with FMS	N/A	N/A	N/A	N/A	This measure has not been implemented	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
CURRENTLY APPROVED ABATEMENT MEASURES (CONTINUED FROM PREVIOUS PAGE)						
Measure A-14: Nighttime Use of Commencement Bay Departure Corridor	N/A	N/A	N/A	N/A	This measure has not been implemented	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.
Measure A-15: Use of FMS Procedures	FAA, Aircraft Operators	None	None	None	This measure has been implemented and is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-16: Use of Ground Equipment	Port of Seattle, Airport Users	None	None	None	This measure is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure A-17 Raise Altitude Where Aircraft Intercept Glide Slope	N/A	N/A	N/A	N/A	This measure has not been implemented	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
CURRENTLY APPROVED MITIGATION MEASURES						
Measure M-2a: Standard Insulation	Port of Seattle	$16,405,000 to $18,335,000	None	None	This measure is ongoing	**CONTINUE** measure within modified noise remedy boundary (see Section 6.1.1) FAA Requested Action: No action by FAA is required.
Measure M-2b: Insulation of Schools	Port of Seattle	N/A - Funding previously committed	None	None	This measure is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure M-2c: Multi-Family Developments	Port of Seattle	See Measures M-14 and M-15	None	None	This measure is complete	**Measure Not Being Carried Forward** and replaced with Measures M-14 and M-15 FAA Requested Action: No action by FAA is required.
Measure M-3: Transaction Assistance	N/A	N/A	N/A	N/A	This measure was updated by measures M-3a and M-3b.	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
CURRENTLY APPROVED MITIGATION MEASURES (CONTINUED FROM PREVIOUS PAGE)						
Measure M-3a: Special Purchase Option	N/A	N/A	N/A	N/A	This measure has been discontinued due to lack of community response	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.
Measure M-3b: Insulation Requirement	N/A	N/A	N/A	N/A	This measure has been discontinued due to lack of community response	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.
Measure M-4: Easement Acquisition	N/A	N/A	N/A	N/A	This measure is ongoing, but modified. The Port does not purchase avigation easements for homes that cannot be sound insulated.	**Measure Not Being Carried Forward** FAA Requested Action: No action by FAA is required.
Measure M-5: Property Advisory Service	Port of Seattle	Minimal administrative costs	None	None	This measure is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure M-6: Local Government Remedy Support	Port of Seattle	Minimal administrative costs	None	None	This measure is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
CURRENTLY APPROVED MITIGATION MEASURES (CONTINUED FROM PREVIOUS PAGE)						
Measure M-7: Funding for Land Use/Noise Compatibility Planning	Port of Seattle	Minimal administrative costs	None	None	This measure is ongoing	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure M-9: Community Planners Forum	N/A	N/A	N/A	N/A	The Planning Committee was formed and met for several years but has since disbanded	**Measure Not Being Carried Forward.** The Port participates in the Highline Forum FAA Requested Action: No action by FAA is required.
Measure M-10: Operations Review and NEM Updates	N/A	N/A	N/A	N/A	This 2013 NCP update represents the continuance of this measure	**Measure Not Being Carried Forward** and replaced with Measure P-2 FAA Requested Action: No action by FAA is required.
Measure M-11: Approach Transition Zone (ATZ) Acquisition	Port of Seattle	$10,000,000	None	None	This measure is ongoing as a voluntary program	**CONTINUE** measure FAA Requested Action: No action by FAA is required.
Measure M-12: Prepare Cooperative Development Agreements	Port of Seattle	Minimal administrative costs	Minimal administrative costs	None	This measure is ongoing	**CONTINUE** measure within modified noise remedy boundary (see Section 6.1.1) FAA Requested Action: No action by FAA is required.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
RECOMMENDED NEW ABATEMENT MEASURES						
Measure A-18: Construct a Ground Run-up Enclosure (GRE) on the airport to minimize run-up noise.	Port of Seattle & Aircraft Operators	$6,000,000 for construction plus site preparation costs to be determined by GRE Design Study	None	Minimal operating costs to use GRE facility	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.
Measure A-19: Expand the Fly Quiet Program	Port of Seattle & Aircraft Operators	Minimal administrative costs	None	Minimal costs to comply with new voluntary program elements	This is a new measure that modifies completed measure A-12	Include in NCP FAA Requested Action: Approval of new measure.
RECOMMENDED NEW MITIGATION MEASURES						
Measure M-14: Sound insulate eligible owner-occupied multi-family units (condominiums) within the modified noise remedy boundary	Port of Seattle	$16,640,000 to $21,440,000	None	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
RECOMMENDED NEW MITIGATION MEASURES (CONTINUED FROM PREVIOUS PAGE)						
Measure M-15: Sound insulate eligible tenant-occupied multi-family units (apartments) within the modified noise remedy boundary	Port of Seattle	$34,710,000 to $46,280,000	None	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.
Measure M-16: Offer avigation easements to owners of individual lots on which mobile homes are located within the modified Noise Remedy Boundary.	Port of Seattle	$440,000	Loss of tax base	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.
Measure M-17: Initiate a formal study to evaluate the noise levels at churches/places of worship located within the revised noise remedy boundary for eligibility for sound insulation	Port of Seattle	$30,000 to $40,000 to conduct the study - cost to sound insulate eligible church structures, if feasible, will be determined by the study	None	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.

Table 6-1, *Continued*
SUMMARY OF 2013 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS
Seattle-Tacoma International Airport

MEASURE	RESPONSIBLE PARTY	COST TO AIRPORT	COST TO LOCAL GOVERNMENTS	COST TO USERS	IMPLEMENTATION STATUS	RECOMMENDED ACTION
RECOMMENDED NEW PROGRAM MANAGEMENT MEASURES						
Measure P-1: Upgrade Noise Monitoring and Flight Tracking System	Port of Seattle	$1,500,000 to $2,000,000	None	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure. FAA Requested Action: Approval of new measure.
Measure P-2: Periodically review and, if necessary, update the NEMs and the NCP	Port of Seattle	NEM Update: $400,000 to $500,000 OR NEM/NCP Update: $1,000,000	Minimal administrative costs to participate in study	None	This is a new measure	Include in NCP FAA Requested Action: Approval of new measure.
Measure P-3: Continue to operate the Noise Office	Port of Seattle	Minimal administrative costs	None	None	This measure has been implemented	Include in NCP: continue to operate the Noise Abatement Office. FAA Requested Action: Approval of new measure.

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NOISE COMPATIBILITY PROGRAM MEASURE: A-1

Description: Explore Limited Rescheduling of Nighttime Flights

Background and Intent: The Airport Noise and Capacity Act of 1990 limits the ability of public airports to enact involuntary use restrictions such as nighttime curfews. Proposed restrictions must be reviewed by the FAA under the provisions of 14 CFR Part 161.

This measure involves the voluntary rescheduling of aircraft flight times (earlier or later) of nighttime short-haul flights by jet aircraft. This measure primarily addresses those short-haul flights that currently are scheduled to operate between 10:00 p.m. and 12:00 a.m. or between 5:00 a.m. and 7:00 a.m. to reduce the number of operations of jet aircraft during periods of low ambient noise.

Relationship to 2002 NCP: This measure was included in the 1985 NCP, but not addressed in 2002 NCP.

Land Use Compatibility Improvement: Aircraft noise and overflights are reduced during nighttime hours.

Responsible Implementing Parties: Port of Seattle, airlines

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should periodically communicate this measure to airlines operating at Sea-Tac Airport and any new airlines that introduce service at Sea-Tac Airport.

Costs: Minimal administrative costs

Schedule: This measure is ongoing. Communication of this measure can occur at the discretion of the Port.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-3

Description: Use VOR Radials to Curb Aircraft Drifting from Noise Abatement Track

Background and Intent: This measure uses very high frequency (VHF) omnidirectional range (VOR) radials to curb departing aircraft from drifting off the runway heading tracks as specified in the Tower Order.

Relationship to 2002 NCP: This measure was included in the 1985 NCP, but not addressed in 2002 NCP.

Land Use Compatibility Improvement: Aircraft noise and overflights are reduced for areas that are not beneath the existing departure corridors

Responsible Implementing Parties: FAA, aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: No additional steps

Costs: No additional costs

Schedule: This measure has been implemented and adherence to this measure is ongoing.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-7

Description: MEASURE NOT BEING CARRIED FORWARD**:** Establish Noise Barriers/Run-up Enclosure

Background and Intent: The 1985 Part 150 recommended the use of airport facilities for buffering ground noise. This measure was amended in the 2002 NCP update to include the construction of a noise barrier in the North Cargo Area and conduct a siting/feasibility study for a Ground Run-up Enclosure (GRE). The Port completed a feasibility study in 2001, but since then a recommended site could not be finalized because of some serious airfield planning issues adjacent to the area that was designated for a future GRE. A GRE should be located in close proximity to the aircraft maintenance facilities of an airport's primary air carriers. The GRE is currently being reviewed again as part of the current Part 150 Study. This measure is recommended to not be carried forward and replaced with measure A-18.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: This measure has not been implemented and is recommended to not be carried forward and replaced with measure A-18.

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-8

Description: MEASURE NOT BEING CARRIED FORWARD: Restrict Taxiing of Aircraft to/from Maintenance Areas during Nighttime Hours

Background and Intent: This measure requires that airlines tow aircraft to and from the maintenance area or when repositioning aircraft from one gate to another during nighttime hours. This measure was not implemented and is recommended to not be carried forward.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-10

Description: Maintenance Run-up Regulations

Background and Intent: This measure was included in the 2002 NCP update to address maintenance run-ups. The Port of Seattle implemented restrictions to engine maintenance run-ups at Sea-Tac Airport. This measure is recommended to be modified to reflect the currently implemented run-up restrictions as outlined below:

All engine run-ups require approval of Airport Operations. No aircraft engine run-up shall be conducted during the nighttime quiet hours of 2200 and 0700 except:

Aircraft that are regularly scheduled to depart between the hours of 0600 and 0830 shall be allowed to run-up as necessary between 0600 and 0700.

Engine run-ups necessary for maintenance checks above idle power not to exceed a total of two (2) minutes duration per aircraft.

Operations not in accordance with the run-up regulations are subject to public disclosure and fees as stated in the Sea-Tac International Airport Tariff #1.

No aircraft shall conduct engine run-ups for maintenance purposes except at locations specified by the Director.[1]

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure can potentially reduce noise annoyance issues with run-up activity.

Responsible Implementing Parties: Port of Seattle & aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: This measure is ongoing. Continue to implement and monitor this measure.

Costs: Minimal administrative costs

Schedule: This measure has been implemented and can continue uninterrupted.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs although Measure A-18 includes a recommendation that the existing maintenance run-up regulations be modified to include the use of the recommended hush house if constructed.

[1] Sea-Tac International Airport, Schedule of Rules & Regulations No. 4(D)(6-8).

NOISE COMPATIBILITY PROGRAM MEASURE: A-11

Description: Preferential Runway Use

Background and Intent: This measure implemented a preferential runway system, during the nighttime hours, for operations through the North Flow Nighttime Noise Abatement Corridor. This would be operational when traffic and other conditions permit as determined by the FAA. When conditions permit, during nighttime hours, departures can be shifted from south to north, thus utilizing the established noise abatement corridor.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure directs aircraft to follow the established noise abatement corridor during nighttime, thus reducing noise and overflights of areas outside the corridor.

Responsible Implementing Parties: FAA ATCT

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: This measure should continue.

Costs: No additional costs

Schedule: This measure has been implemented and can continue uninterrupted.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-12

Description: Development/Implementation of a Fly Quiet Program

Background and Intent: This measure is intended to encourage greater compliance with the noise abatement procedures, work with operators to reduce single event noise levels, and continue to raise awareness of citizens' noise concerns with the FAA and aircraft operators. The Fly Quiet Program was recommended to:

- Monitor adherence to ideal noise abatement flight tracks
- Evaluate success of airlines, aircraft types, and other variables
- Establish goals and track level of improvement over time
- Offer incentives for improvement

The Fly Quiet Program was recommended to include the following elements:

- Aircraft noise should be related to its effects on people including such factors as annoyance, speech interference and sleep disturbance;
- Comparative fleet quality between airlines should also be included;
- The program should utilize measured data from the Airport's noise monitoring system;
- A method of normalizing data to account for airlines that most efficiently serve the region's air transportation needs should be developed;
- Incentives of sufficient importance that airlines will take notice of the results; and
- Pilots and air traffic controllers should be included, if possible.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure encourages aircraft operators to adhere to noise abatement measures and policies, which contributes to land use compatibility.

Responsible Implementing Parties: Port of Seattle & aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: This measure should continue.

Costs: Minimal administrative costs

Schedule: This measure has been implemented and can continue uninterrupted.

Effects on Other Programs/Measures: The measure encourages adherence to other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-13

Description: MEASURE NOT BEING CARRIED FORWARD: Evaluate Increased Use of the Duwamish/Elliott Bay Corridor with FMS

Background and Intent: Through this measure, the Port encouraged the FAA to pursue options for determining the feasibility of increased use of the Duwamish/Elliott Bay Corridor. Increasing the use of FMS technology ensures that the rate of adherence to an optimum flight track will increase over time (see Measure A-15).

This measure was previously disapproved by the FAA. According to the 2002 FAA Record of Approval, implementing this action would greatly impact the efficiency of the air traffic system in the region and degrade safety, which would not be consistent with 14 CFR Part 150, section 150.35(b)(3)(iii).

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-14

Description: MEASURE NOT BEING CARRIED FORWARD: Nighttime Use of Commencement Bay Departure Corridor

Background and Intent: This measure recommended that the FAA study the use of the nighttime (12:00 a.m. to 5:00 a.m.) use of the Commencement Bay corridor. This measure was studied during the 2002 Part 150. Port staff coordinated/consulted with the Pierce County staff who firmly objected to the recommendation. Since no agreement could be made between the various cities involved, the recommendation was not implemented.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-15

Description: Use of FMS Procedures

Background and Intent: An on-board Flight Management System (FMS) is used to assist the pilot in navigating from point to point in flight. The systems work by identifying the geographic location of aircraft in relationship to another geographic location called a "waypoint." This FMS equipment provides the necessary information to guide the aircraft towards the desired "waypoint." FMS works with the auto-pilot system on the aircraft to automatically fly the aircraft towards the desired "waypoint." The use of FMS can reduce the width and size of departure corridors over standard navigation techniques. Aircraft must be equipped with the necessary FMS equipment to fly the procedures.

This measure is designed to encourage the use of FMS procedures over non-populated areas, to discourage the development of new FMS procedures over populated areas, and to support development of FMS procedures for all north flow departures turning west to improve compliance with the identified noise abatement corridor. FMS flight tracks have the potential to become very narrow on straight portions of the flight tracks. When turning, however, the differing operating characteristics of the aircraft will cause dispersion.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure improves the ability of aircraft to fly the established flight corridors, thus reducing noise and overflights of areas outside the flight corridors.

Responsible Implementing Parties: FAA, aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: No additional steps

Costs: No additional costs

Schedule: This measure has been implemented and can continue uninterrupted.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-16

Description: Use of Ground Equipment

Background and Intent: This measure recommended the installation of power and conditioned air in existing and newly constructed gates to minimize the use of auxiliary power units/ground power units APUs/GPUs. Once power and conditioned air are installed at gates, airlines should be required to use these services.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure can potentially reduce noise annoyance issues from APU noise.

Responsible Implementing Parties: Port of Seattle, aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should continue to install power and pre-conditioned air connections at aircraft gates and request that aircraft operators maximize their use of the equipment

Costs: Cost to install the equipment – this cost is being funded through the FAA Voluntary Airport Low Emissions (VALE) Program.

Schedule: This measure is being implemented and can continue uninterrupted depending upon available funding. The project is underway – 73 gates are anticipated to be equipped with central pre-conditioned air by April 2013. As of October 2012, there are 30 diesel/electric point of use units being utilized.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-17

Description: MEASURE NOT BEING CARRIED FORWARD: Raise Altitude Where Aircraft Intercept Glide Slope

Background and Intent: Through the Fly Quiet Program, the subsequent Follow-On Committee will worked with the operators and the FAA toward a goal of having aircraft on the glide slope as far out as possible while not adversely impacting capacity. When aircraft are on arrival to the Airport, they are utilizing the glide slope and the angle of the glide slope to line up on the runway and descend at the proper rate of speed and angle to touch down on the runway. This is usually done under instrument flying conditions, but almost all-commercial service aircraft and cargo aircraft fly the glide slope even during clear weather conditions (VFR). All glide slope angles at the Airport are at three degrees. This is consistent with almost every other airport in the country. Aircraft are designed to operate at an approximate three-degree glide slope for safety, efficiency of aircraft movement, performance of the aircraft, and comfort to the passengers.

This measure was previously disapproved by the FAA. As noted in the 2002 Record of Approval, moving aircraft further out on the glide slope would negatively impact airspace capacity and efficiency. The current procedures are needed to maintain operational efficiency at the airport.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: NA

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: A-18

Description: Construct a Ground Run-up Enclosure (GRE) on the airport to minimize run-up noise.

Background and Intent: The 1985 Part 150 recommended the use of airport facilities for buffering ground noise. The 2002 NCP update recommended the construction of a noise barrier in the North Cargo Area and a siting/feasibility study for a GRE, commonly referred to as a "hush house". The Port completed a feasibility study in 2001, but since then a recommended site could not be finalized because of some serious airfield planning issues adjacent to the area that was designated for a future GRE.

Currently engine run-ups are conducted in two locations on the airfield, on Taxiway B between Taxiways D and E, and on the hold pad east of the end of Runway 34R. Neither of these locations provide for any significant buffering of engine noise.

Concurrent to this Part 150 Study update, an updated GRE Siting Study has been undertaken. This study assessed multiple GRE alternatives, including several locations on the airfield. This measure recommends the construction of a GRE based on the recommendation of the ongoing GRE Siting Study and a future GRE Design Study.

Relationship to 2002 NCP: This is a new measure which replaces measure A-7.

Land Use Compatibility Improvement: This measure can potentially reduce noise issues with run-up activity.

Responsible Implementing Parties: Port of Seattle & aircraft operators

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: Once the GRE Siting Study is completed and the FAA issues a Record of Approval, the Port should conduct a GRE Design Study and design and construct a GRE based on the recommendations of that Study.

Costs: The cost of construction is estimated to be approximately $6,000,000. Additional operational and maintenance costs are not included in this estimate. Additional site preparation costs may be necessary depending upon the site selected. Actual site preparation costs, which could range from $10,000,000 to $25,000,000 will be determined by the GRE Design Study.[2]

Schedule: This measure can be implemented following FAA approval in the Record of Approval (ROA) and completion of the GRE Design Study and receipt of funding. The GRE Design Study is expected to be completed by 2014 or 2015. It is recommended that if this measure is implemented, the Port investigate methods by which to modify the existing run-up regulations to include the use of the recommended GRE.

Effects on Other Programs/Measures: The measure replaces Measure A-7.

[2] Note that site preparation costs are likely ineligible for AIP funding.

NOISE COMPATIBILITY PROGRAM MEASURE: A-19

Description: Expand the Fly Quiet Program.

Background and Intent: The Port established a Fly Quiet program following the recommendation from the 2002 NCP update (completed Measure A-12). This measure would identify opportunities to expand the program with new elements, including:

- Use of Airport Traffic Control Tower (ATCT) reporting of operational modes for comparison to runway use goals.
- Include provisions for the use of the ground run-up enclosure recommended in Measure A-18.
- Adding different categories of airline operations.

Relationship to 2002 NCP: This is a new measure which updates measure A-12.

Land Use Compatibility Improvement: This measure can potentially improve compliance with the established voluntary noise abatement procedures in place at Sea-Tac Airport, thus reducing noise and overflights.

Responsible Implementing Parties: Port of Seattle, aircraft operators, Public Committee

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port should review and expand the Fly Quiet Program as needed. If necessary, the Port could convene a committee meeting to discuss specific elements to be added to the Fly Quiet Program. This committee could be a follow-up to the Technical Review Committee (TRC) from this Part 150 Study.

Costs: Minimal administrative costs to the Port – additional costs to aircraft operators to comply with program elements

Schedule: This measure can be implemented at the discretion of the Port.

Effects on Other Programs/Measures: The measure updates completed Measure A-12.

NOISE COMPATIBILITY PROGRAM MEASURE: M-2A

Description: Standard Insulation

Background and Intent: This measure includes sound insulation for eligible single-family residences within the revised Noise Remedy Boundary. The Port has an ongoing program to sound insulate eligible single-family residences within the current Noise Remedy Boundary that was established in the 1985 NCP. Completion of the single family sound insulation program was also an element of the July 3, 1997 Record of Decision for the Master Plan Update for the inclusion of the new third runway.[3] Since that time, noise exposure has decreased at Sea-Tac Airport due to ongoing noise abatement efforts, the phase-out of older, louder aircraft and the lower number of operations. As a result the noise exposure contours developed for this Part 150 Study update are much smaller than the noise exposure contours developed for the 1985 Part 150 Study upon which the Noise Remedy Boundary was based. It is recommended that the Noise Remedy Boundary be modified to be more consistent with the Future (2018) NEM/NCP noise exposure contour developed for this 2013 Part 150 Study update (see **Section 6.1.1** and **Exhibit 6-1**).

Measure M-2a is recommended to be modified to consider, on a case-by-case basis, the applicability of including installation of central air conditioning for sound insulation of eligible homes that have not previously been sound insulated.

Relationship to 2002 NCP: This measure was included in the 2002 NCP. This measure is ongoing. As of August 2012, over 9,300 single-family homes have been sound insulated.

Land Use Compatibility Improvement: This measure converts incompatible land uses to uses that are compatible with aircraft noise levels.

Responsible Implementing Parties: Port of Seattle

[3] United States Department of Transportation, Federal Aviation Administration, Record of Decision for the Master Plan Update Development Actions Sea-Tac International Airport, Seattle, Washington, July 3, 1997.

NOISE COMPATIBILITY PROGRAM MEASURE: M-2A, *Continued*

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: This measure should continue for eligible housing units within the recommended modified Noise Remedy Boundary (see **Section 6.1.1** and **Exhibit 6-1**)

Costs: Estimated cost to sound insulate units is approximately $85,000 to $95,000 per unit, but will vary significantly depending on construction, age and condition of individual residences. Approximately 193 eligible units inside the proposed Noise Remedy Boundary have not been insulated despite prior offers from the Port.[4] Specific review of each unit has not been undertaken. Total cost using the estimated range (assuming 100 percent participation) is approximately $16,405,000 to $18,335,000, but will vary depending on the number of participating properties. Note that this cost estimate includes the cost to install central air conditioning, which will be considered on a case-by-case basis for eligible homes that have not previously been sound insulated.

Schedule: This measure can continue uninterrupted based on the availability of FAA funding.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs.

[4] Note that this figure differs from the count of impacted housing units located within the 65 DNL of the Future (2018) noise exposure contour reported in Table 6-2 and Chapter Four of this document. The estimated 193 units are those eligible units located within the proposed noise remedy boundary for this NCP Update. This number also does not include units within the South approach transition zone (ATZ) that are eligible for voluntary acquisition per ongoing Measure M-11.

NOISE COMPATIBILITY PROGRAM MEASURE: M-2B

Description: Insulation of Schools

Background and Intent: This measure includes a sound insulation program for eligible schools. A pilot program was initiated according to the original measure from the 1993 NCP update to determine the feasibility, procedural requirements, and costs, for sound insulating four public buildings based on the Building Committee recommendations. Following the pilot program, several private schools and classrooms at Highline Community College were insulated within the noise contour. This measure was amended in the 2002 NCP update to develop a program to insulate schools within the Highline School District that fall within the DNL 65 dBA.

This measure is ongoing. As of August 2012, sound insulation has been installed in seven schools within the Highline School District, with eight schools remaining. Fourteen of the 22 eligible buildings at the Highline Community College have also been sound insulated.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure converts incompatible land uses to uses that are compatible with aircraft noise levels.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: This measure should continue for schools that were previously identified as eligible, as funding permits.

Costs: Funding for the Highline School District has been previously committed through a Memorandum of Agreement between the FAA, the Port and the District.. The FAA and the Port are providing $50 million each to implement this measure independently of this 2013 NCP update. The cost to sound insulate the remaining buildings on the Highline Community College campus is estimated at $21,228,000 (See Appendix M, *Highline Community College Noise Remedy Plan*).

Schedule: This measure can continue uninterrupted based on the availability of funding.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-2C

Description: MEASURE NOT BEING CARRIED FORWARD: Multi-Family Developments

Background and Intent: This measure includes a sound insulation program for eligible multi-family residences. The 1993 NCP update recommended a pilot project to sound insulate one multi-family unit similar to the criteria outlined in measure M-2. That pilot project was implemented and the measure was amended in the 2002 NCP update to include sound insulation for approximately 300 owner-occupied multi-family units within the 70+ DNL of the 1998 noise contour. Owner-occupied units (e.g. condominiums) were considered differently than tenant-occupied units (e.g. apartments) for three major reasons: 1) apartments are considered a business because the units are rented for a profit and 2) they are typically not a permanent residence and the residents are generally more mobile, and 3) the owner-occupied multi-family residents typically have more monetary investment in their residence. Structures must meet the same eligibility requirements as single-family homes within the noise remedy boundary.

This measure is complete. As of August 2013, approximately 236 units within six condominium complexes have been sound insulated.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: This measure is not being carried forward and replaced with Measures M-14 and M-15.

NOISE COMPATIBILITY PROGRAM MEASURE: M-3, M3A, & M3B

Description: MEASURE NOT BEING CARRIED FORWARD: Transaction Assistance

Background and Intent: Formerly referred to as "purchase assurance" this measure is now termed transaction assistance in keeping with its primary function. The intent of the measure is to provide financial and technical assistance to owner-occupants of single-family residences who desire to sell and move away from areas of relatively high noise exposure. If the various forms of assistance to be made available do not result in an acceptable sales transaction, the Port could acquire the property at fair market value as a "buyer of last resort." Following necessary improvements (which could include sound insulation); the Port would resell the property to a willing buyer with an avigation easement attached to the deed.

Measure M-3 was modified to include a special purchase option (Measure M-3a) whereby the Port would purchase eligible housing units, install sound insulation, and resell the unit; and an insulation requirement (Measure M-3b) which required a housing unit be sound insulated before it was eligible for the Transaction Assistance program.

Due to lack of community response, Measures M-3a and M-3b were discontinued.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-4

Description: MEASURE NOT BEING CARRIED FORWARD: Easement Acquisition

Background and Intent: This measure recommended that the Port obtain avigation easements in return for sound insulation or transaction assistance, as well as for situations of specialized nature. For some residences, the Port could purchase an avigation easement from an eligible owner of an owner-occupied residence who desires to continue living in the same location, even though the home cannot be satisfactorily sound insulated. Other situations in which avigation easements may be appropriate include churches. The easement fee paid by the Port could be used to provide some measure of sound insulation of noise-sensitive areas of church structures. This measure was implemented but was halted. Based on previous experience with these programs, the Port no longer purchases avigation easements for single family homes that cannot be effectively sound insulated.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-5

Description: Property Advisory Service

Background and Intent: This measure provides residents and property owners within the Airport Environs with access to timely and factual information concerning 1) what noise remedies they may be eligible for, 2) assistance with making decisions when they are eligible for multiple options, 3) information regarding rumors about the mitigation program (either good or bad), and 4) assurances that the various programs are indeed aimed at improving the living, working and leisure-time environment. This two-way communication can also provide the Port with information about the concerns of residents/property owners and can provide a means by which the success or failure of programs can be monitored.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure improves the success of the existing Noise Remedy Program.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should continue this measure.

Costs: Minimal administrative costs

Schedule: This measure can continue uninterrupted.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-6

Description: Local Government Remedy Support

Background and Intent: By insulating homes and assisting with real estate transactions, the Port can participate in making the Airport and surrounding residents better neighbors. However, the Port alone cannot accomplish all program goals. Local governments, with land use jurisdiction must also participate if the program is to be a success, especially in the long term. Under this measure, the Port encourages local jurisdictions to undertake projects, provide services, and adopt laws that reinforce neighborhoods and make them compatible with the Airport. The Port also works with jurisdictions in coordinating activities and exchanging information.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure encourages planning efforts to prevent the introduction of new incompatible land uses in the vicinity of Sea-Tac Airport.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should continue this measure.

Costs: Minimal administrative costs

Schedule: This measure can continue uninterrupted.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-7

Description: Funding for Land Use / Noise Compatibility Planning

Background and Intent: This measure enables public agencies (defined as a state, municipality or other political subdivision, or Native American Tribe) having planning authority within the DNL 65 dBA noise contour to be able to apply for reimbursable funding of specific off-airport land use/noise compatibility planning efforts which are consistent with the principles and guidelines of 14 CFR Part 150 and the Port noise compatibility goals.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure provides funding for planning efforts to prevent the introduction of new incompatible land uses in the vicinity of Sea-Tac Airport.

Responsible Implementing Parties: Port of Seattle, local jurisdictions

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should continue this measure.

Costs: Minimal administrative costs

Schedule: This measure can continue uninterrupted.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or existing programs.

NOISE COMPATIBILITY PROGRAM MEASURE: M-9

Description: MEASURE NOT BEING CARRIED FORWARD: Community Planners Forum

Background and Intent: Under this measure, the Port initiated the formation of a committee to allow planning representatives from all jurisdictions within the DNL 65 dBA noise contour, or other invited jurisdictions with interest, to meet on a regular basis to share information pertaining to comprehensive planning, community and airport planning, land use issues, and noise mitigation efforts.

The Planning Committee was formed and met for several years but has since disbanded. The Port participates in the Highline Forum, which continues the intent of this measure. Since the intent of this measure is met through another venue, this measure is recommended to not be carried forward.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other programs or measures.

NOISE COMPATIBILITY PROGRAM MEASURE: M-10

Description: MEASURE NOT BEING CARRIED FORWARD: Operations Review and NEM Updates

Background and Intent: The Part 150 Study is a five-year program recommended to be reevaluated at the end of the five-year period. In addition, if there is a significant change in either aircraft types or numbers of operations, or significant new facilities, then it is recommended that the Study be reevaluated prior to the end of the five-year time frame.

This measure is recommended to not be carried forward and replaced with measure PM-3.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: N/A

Responsible Implementing Parties: N/A

Implementation Steps, Costs, and Phasing:

FAA Requested Action: Measure is not being carried forward. No action by FAA is required.

Steps: N/A

Costs: N/A

Schedule: N/A

Effects on Other Programs/Measures: Not carrying this measure forward is not expected to impact other programs or measures.

NOISE COMPATIBILITY PROGRAM MEASURE: M-11

Description: Approach Transition Zone Acquisition

Background and Intent: This measure recommended that the Port purchase residential properties experiencing noise levels of DNL 65 dBA or greater, and located within the Approach Transition Zones (ATZ) of Runway 16R/34L.

This measure is ongoing as a voluntary acquisition program. A total of 69 residential parcels and 2 mobile home parks within the North ATZ have been purchased and residents relocated and the program is complete in this area. There are approximately 12 single-family residences and 6 apartment buildings remaining in the south ATZ (a total of 77 residential units).

In accordance with the FAA's Airport Improvement Program (AIP) Handbook (FAA Order 5100.38C), projects that involve acquisition must conform to the provisions of the Uniform Relocation Assistance and Real Properties Acquisition Polices Act in effect at the time the land was acquired.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure would potentially remove up to 77 land uses within the South ATZ that are incompatible with aircraft noise.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The Port should make offers to acquire the remaining residential properties within the South ATZ. The Port would be responsible for relocation assistance to the residents of these residences in accordance with FAA Order 5100.37B, Land Acquisition and Relocation Assistance for Airport Projects, and in Advisory Circular 150/5100-17, Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects.

Costs: There are 16 single-family residences and 6 apartment buildings remaining in the south ATZ. Cost to acquire all residential properties within south ATZ is estimated to be $10 million. Actual cost will depend on which properties actually participate.

Acquisition would remove these properties from the local tax base. Property tax revenue on these properties is an estimated $45,000 to $50,000, which is allocated between the State of Washington, King County, the cities of Des Moines and SeaTac, the local school district, the EMS district, and other special districts and fees.

Schedule: This measure can continue uninterrupted at the discretion of the Port.

Effects on Other Programs/Measures: This measure is not expected to impact other programs or measures.

NOISE COMPATIBILITY PROGRAM MEASURE: M-12

Description: Prepare Cooperative Development Agreements

Background and Intent: The Port and the surrounding jurisdictions should work towards development of cooperative development agreements concerning land use, redevelopment, and infrastructure of the Approach Transition Zones (ATZ), as well of other redevelopment areas as necessary.

Relationship to 2002 NCP: This measure was included in the 2002 NCP.

Land Use Compatibility Improvement: This measure encourages the redevelopment of land acquired for noise mitigation for compatible uses. Redevelopment of land for compatible uses prevents new incompatible uses from developing.

Responsible Implementing Parties: Port of Seattle & local jurisdictions

Implementation Steps, Costs, and Phasing:

FAA Requested Action: No action by FAA is required.

Steps: The process should continue to address development potentials for other areas included within the revised Noise Remedy Boundary.

Costs: Minimal administrative costs

Schedule: This measure is ongoing. As of March 2011, the Port has worked with Burien on the North East Redevelopment Area north of the third runway and has signed a Development Agreement with the City of Des Moines on the Des Moines Creek Business Park. This measure can continue uninterrupted.

Effects on Other Programs/Measures: This measure is not expected to impact other programs or measures.

NOISE COMPATIBILITY PROGRAM MEASURE: M-14

Description: Sound insulate eligible owner-occupied multi-family units (condominiums) within the modified noise remedy boundary.

Background and Intent: Measure M-2c offered sound insulation to owner-occupied multi-family units within the 70 DNL of the 1998 Noise Exposure Contour. This measure would expand the program to eligible units within the revised Noise Remedy Boundary (see **Section 6.1.1** and **Exhibit 6-1**) that were not previously mitigated.

Relationship to 2002 NCP: This is a new measure.

Land Use Compatibility Improvement: This measure has the potential to convert multi-family housing units into compatible uses.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port should identify eligible properties and approach the owners with offers to sound insulate the structures.

Costs: There are approximately 320 condominiums that have not been sound insulated located within the proposed noise remedy boundary,[5] assuming a cost of $52,000 to $67,000 to sound insulate each unit,[6] the total cost to implement this measure if all of the units participated would be $16,640,000 to $21,440,000. Actual costs may vary significantly based on the construction, age and condition of the buildings and the individual units and the number of units that actually participate.

Schedule: This measure could be implemented upon receipt of the FAA Record of Approval based on the availability of funding.

Effects on Other Programs/Measures: This measure modifies Measure M-2c. This measure would be implemented within the modified Noise Remedy Boundary described in Section 6.1.1.

[5] Note that this figure differs from the count of impacted housing units located within the 65 DNL of the Future (2018) noise exposure contour reported in Chapter Four of this document. The estimated 320 units are those eligible units located within the proposed noise remedy boundary for this NCP Update.

[6] Note: Estimated per unit cost is based on typical costs for similar mitigation programs at other U.S. airports. Actual per unit cost could vary based on construction, age and condition of individual units.

NOISE COMPATIBILITY PROGRAM MEASURE: M-15

Description: Sound insulate eligible tenant-occupied multi-family units (apartments) within the modified Noise Remedy Boundary.

Background and Intent: Measure M-2c offered sound insulation to owner-occupied multi-family units within the 70 DNL of the 1998 Noise Exposure Contour. This measure would expand the program to include eligible tenant-occupied units within the revised Noise Remedy Boundary (see **Section 6.1.1** and **Exhibit 6-1**). The Port should consider a Pilot Project to determine feasibility of future tenant-occupied buildings.

Relationship to 2002 NCP: This is a new measure.

Land Use Compatibility Improvement: This measure has the potential to convert multi-family housing units into compatible uses.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port should initiate a feasibility study to determine the needs for the program. The feasibility study should identify eligible properties, methods and materials for sound insulation, and specific costs for the program.

Costs: A feasibility Study is estimated to cost $1,100,000.

There are approximately 1,157 apartments that have not been sound insulated located within the proposed Noise Remedy Boundary.[7] Assuming all units are deemed eligible for mitigation and actually participate, and a cost of $30,000 to $40,000 to sound insulate each unit,[8] the total cost to implement this measure, not including the cost of a feasibility study, would be $34,710,000 to $46,280,000. Actual costs may vary significantly depending upon the age, construction and condition of the building and individual units as well as the level of participation.

Schedule: This measure could be implemented following receipt of the FAA Record of Approval based on the availability of funding.

Effects on Other Programs/Measures: This measure is not expected to impact other programs or measures; although, this measure would be implemented within the modified Noise Remedy Boundary established in Section 6.1.1.

[7] Note that this figure differs from the count of impacted housing units located within the 65 DNL of the Future (2018) noise exposure contour reported in Chapter Four of this document. The estimated 897 units are those eligible units located within the proposed noise remedy boundary for this NCP Update. This number also does not include units within the South ATZ that are eligible for voluntary acquisition per ongoing Measure M-11.

[8] Note: Estimated per unit cost is based on typical costs for similar mitigation programs at other U.S. airports. Actual per unit cost could vary based on construction, age and condition of individual units.

NOISE COMPATIBILITY PROGRAM MEASURE: M-16

Description: Offer avigation easements to owners of individual lots on which mobile homes are located within the modified Noise Remedy Boundary.

Background and Intent: Per 14 CFR Part 150 land use compatibility guidelines, mobile homes are incompatible with aircraft noise levels at DNL 65 dBA or higher. However, most mobile homes cannot be effectively sound insulated.

Measure M-2d offered sales and relocation assistance to residents of mobile home parks that were acquired by the Port in an effort to remove incompatible structures within mobile home parks. Most mobile homes cannot be effectively sound insulated. This measure would provide avigation easements to owners of individual lots in return for removing the mobile home from the lot and/or providing air rights. There are approximately 62 mobile homes located on individual lots within the proposed noise remedy boundary.

In accordance with the FAA's Airport Improvement Program (AIP) Handbook (FAA Order 5100.38C), projects that involve acquisition must conform to the provisions of the Uniform Relocation Assistance and Real Properties Acquisition Polices Act in effect at the time the land was acquired.

Relationship to 2002 NCP: This is a new measure.

Land Use Compatibility Improvement: This measure would potentially remove land uses that are incompatible with aircraft noise.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port should identify eligible mobile homes and offer avigation easement to the property owners. If feasible, the mobile homes should be removed. If the mobile homes are removed, the Port may be responsible for relocation assistance to the residents of those mobile homes in accordance with FAA Order 5100.37B, *Land Acquisition and Relocation Assistance for Airport Projects*, and in Advisory Circular 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects*.

Most jurisdictions surrounding Sea-Tac Airport allow one accessory dwelling unit (ADU) or accessory living quarters (ALQ) on individual residential parcels. Prior to initiation of this measure, the Port should work with the surrounding jurisdictions to ensure that zoning restrictions are in place to prevent the development of new mobile homes on existing parcels. This could be accomplished by establishing an overlay zone which prevents the use of mobile homes as ADUs/ALQs on parcels within the Noise Remedy Boundary.

Costs: There are approximately 88 mobile homes located on individual lots within the proposed noise remedy boundary. Assuming a 100 percent participation in the program with a $5,000 purchase price for the avigation easement, the total cost to implement this measure would be $440,000. Actual costs would vary significantly depending upon levels of participation and actual consideration paid for the easement.

Schedule: This measure can be implemented following receipt of the FAA Record of Approval based on the availability of funding.

NOISE COMPATIBILITY PROGRAM MEASURE: M-16, *Continued*

Effects on Other Programs/Measures: This measure is not expected to impact other programs or measures; although, this measure would be implemented within the modified Noise Remedy Boundary established in Section 6.1.1.

NOISE COMPATIBILITY PROGRAM MEASURE: M-17

Description: Initiate a formal study to evaluate the noise levels at churches/places of worship located within the modified Noise Remedy Boundary for eligibility for sound insulation.

Background and Intent: This measure is intended to address potential noise impacts resulting from daytime (in particular Sunday morning) aircraft operations. There are twelve churches located within the recommended Noise Remedy Boundary,[9] (including St. Philomena Church, which has been previously sound insulated by the Port of Seattle). Under this measure, a formal study would be conducted to evaluate noise levels to determine eligible churches.

In order to more accurately assess the impact of aircraft noise on churches, this study would focus on the aircraft events occurring during typical service hours. The results of the analysis could lead to recommendation for the sound insulation of Grace Lutheran Church. The Airport Improvement Program (AIP) Handbook (FAA Order 5100.38c, Chapter 812(d)) states that churches, when recommended for sound insulation by an airport sponsor in an FAA-approved NCP are eligible for sound insulation. The AIP Handbook further states that the sound insulation of churches should be evaluated on a case-by-case basis involving consultation with the FAA Airports Financial Assistance Division (APP-520) and the FAA Community and Environmental Needs Division (APP-600). This consultation process and evaluation will take place prior to implementing sound insulation at a church/place of worship.

Sound insulation consists of increasing the exterior-to-interior sound attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic ways in which this can be accomplished (e.g. acoustical windows, acoustical doors, ventilation systems, additional roof/wall insulation, etc.), and variations of each would occur on a structure-to-structure basis.

Relationship to 2002 NCP: This is a new measure.

Land Use Compatibility Improvement: This alternative has the potential to convert one church from an incompatible to a compatible use**.**

Responsible Implementing Parties: Port of Seattle

[9] Note that number of churches within the recommended Noise Remedy Boundary differs from the count of churches located within the 65 DNL of the Future (2018) noise exposure contour reported in Chapter Four of this document.

NOISE COMPATIBILITY PROGRAM MEASURE: M-17, *Continued*

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port should contact the potentially eligible churches to assess their interest and arrange to conduct a feasibility study if desired by church officials.

Costs: The cost for implementation of this alternative, which will be funded by the Port, would be approximately $30,000 to $40,000 to conduct the study. Cost to sound insulate the church structures, if feasible, would be determined by the study.

Schedule: Implementation of this measure can begin following receipt of the FAA Record of Approval and the availability of funding.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or programs.

NOISE COMPATIBILITY PROGRAM MEASURE: P-1

Description: Evaluate and Upgrade Noise Monitoring and Flight Tracking System.

Background and Intent: The Port has installed a noise and operations monitoring system that collects and stores flight data from the FAA's automated radar terminal system, which enables staff to regularly monitor abatement procedures and investigate citizen inquiries. In addition to this system, the Port also provides WebTrak, which allows the public to investigate flights via the Web. The system includes 25 existing permanent noise monitors. This alternative includes evaluating these permanent noise monitors and the central system hardware/software for potential replacement with newer equipment.

Relationship to 2002 NCP: This measure replaces completed measure A-4

Land Use Compatibility Improvement: This measure does not directly improve land use compatibility; rather, it provides the Port of Seattle with additional resources to monitor the effectiveness of noise abatement measures and respond to public inquiries about noise and airport operations.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port of Seattle should continue to evaluate their existing noise monitoring and flight tracking system and replace/upgrade the equipment as needed.

Costs: Cost to upgrade the central system hardware/software and replace 25 permanent noise monitors at their existing sites is approximately $1.5 to $2 million. If additional monitors are added or new sites are selected, the cost will be higher.

Schedule: The Port of Seattle can purchase and install new equipment following receipt of the FAA Record of Approval.

Effects on Other Programs/Measures: This measure is not expected to impact other measures or programs.

NOISE COMPATIBILITY PROGRAM MEASURE: P-2

Description: Periodically review and, if necessary, update the Noise Exposure Maps (NEMs) and the Noise Compatibility Program (NCP).

Background and Intent: The NEMs should be updated every five years or when there are significant changes in operating levels and patterns in accordance with the FAA's guidelines for determining what constitutes a potentially significant increase in operations (1.5 dB DNL increase in the area impacted by 65+ DNL).

The NCP should be updated every five years, or as necessary, to reflect any broader changes in the nature of aircraft noise surrounding the Airport. Should any on-airport development, such as runway extensions or significant modifications to ground facilities, enlarge the area of incompatible use exposed to aircraft noise above 65 Day-Night Average Sound Level (DNL), the NCP should be updated prior to the implementation of those improvements. A full update may not be required, but rather, a targeted assessment of the changes occasioned by specific development projects may suffice to bring the NCP to conformity and to qualify additional areas for NCP programs, if appropriate.

Relationship to 2002 NCP: This measure replaces approved Measure M-10.

Land Use Compatibility Improvement: This measure does not directly improve land use compatibility; rather, it provides for periodic review and update of the Noise Compatibility Program.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps:

- Evaluate the need of NEM or NCP update based on conditions.
- If appropriate, retain a qualified planning consultant to conduct the update(s).
- Complete and publish the results, modifying or expanding NCP programmatic boundaries as appropriate at the time of update.

Costs: It is estimated that the NEM update could be accomplished for approximately $400,000 to $500,000. An NEM/NCP could be updated at an estimated cost of $1,000,000 (assuming only a minimal review of existing abatement measures is necessary). Both updates are eligible for funding through FAA AIP grant monies at 80 percent FAA participation.

Schedule: NEM update in 2018, with NCP update as needed based on operational changes or airfield changes that affect aircraft operations.

Effects on Other Programs/Measures: Reviews all other programs and measures to assure their incorporation into the description of the noise condition at the airport.

NOISE COMPATIBILITY PROGRAM MEASURE: P-3

Description: Continue to operate the Noise Office

Background and Intent: Measure A-5, which was adopted in the 1985 Part 150 Study, recommended establishing a noise abatement office to initiate, implement, and monitor the various abatement actions included in the NCP. This measure recommends the continued operation of the Noise Office.

Relationship to 2002 NCP: This measure updates completed measure A-5.

Land Use Compatibility Improvement: This measure does not directly improve land use compatibility; although, it provides staff and resources to monitor the effectiveness of land use compatibility program measures and respond to public inquiries regarding noise and airport operations.

Responsible Implementing Parties: Port of Seattle

Implementation Steps, Costs, and Phasing:

FAA Requested Action: FAA approval of new measure.

Steps: The Port of Seattle should continue to operate the noise abatement office.

Costs: Minimal administrative costs

Schedule: This measure can continue uninterrupted.

Effects on Other Programs/Measures: The measure is not expected to impact other measures or existing programs.

6.1.1 RECOMMENDED NOISE REMEDY BOUNDARY

This section describes the recommended modification to the existing Noise Remedy Boundary at Sea-Tac Airport. This modified boundary roughly corresponds to the DNL 65 dBA of the Future (2018) NEM developed for this NCP update and defines the area within which implementation of all mitigation measures are recommended to occur.

The Noise Remedy Boundary in place at Sea-Tac Airport is based on noise exposure contours developed for the 1985 Part 150 Study and reflected the then-projected noise levels for the year 2000. This 2013 Part 150 Study update has developed noise exposure contours for Future (2018) conditions that are substantially smaller than those of previous years. This reduction in the size of the noise contours is primarily the result of the phase-out of louder Stage 2 aircraft, ongoing abatement and program management measures and decreases in operations at the airport.

As a result of the reduction in size of the noise exposure contours compared to previous years, this Study recommends the Noise Remedy Boundary be modified to reflect the DNL 65 dBA of the Future (2018) NCP noise exposure contour. The recommended modified Noise Remedy Boundary is a fixed boundary that follows physical and geographic features and is generally based on and expanded from the DNL 65 dBA of the Future (2018) NCP noise exposure contour. Per FAA Order 5100.38, "…projects within DNL 65 dB may be expanded beyond the DNL 65 dB contour to include a reasonable additional number of otherwise ineligible parcels contiguous to the project area, if necessary to achieve equity in the neighborhood. Neighborhood or street boundary lines may help determine what is reasonable…"[10]

Exhibit 6-1, *Recommended Noise Remedy Boundary*, illustrates the recommended modification to the Noise Remedy Boundary, accompanied by the location of the original Noise Remedy Boundary and the DNL 65 dBA of the Future (2018) Baseline noise exposure contour.

The Port will make one final offer to eligible property owners outside of the modified Noise Remedy Boundary that have not participated in the program and continue the insulation program for those living within the modified Noise Remedy Boundary that have not yet participated in the program. All eligible homeowners outside of the modified Noise Remedy Boundary that request participation will be notified of a cutoff date to enter into the existing program prior to the FAA's approval of the new NCP.

The Port should also provide notice of this modification to the local jurisdictions and assist local jurisdictions with updating their comprehensive plans and zoning ordinances to reflect the modified Noise Remedy Boundary where applicable.

[10] U.S. Department of Transportation, Federal Aviation Administration, Order 5100.38C, Airport Improvement Program Handbook, Section 2, Noise Compatibility Projects, subsection 810(b), June 28, 2005.

6.2 NOISE COMPATIBILITY PROGRAM MAP

Through previous Part 150 Studies, the Port has developed and implemented several abatement measures that minimize noise impacts as much as possible without placing undue restrictions on operations at Sea-Tac Airport. This Part 150 Study update reviewed these abatement measures and determined the currently implemented measures reduce noise to the fullest extent possible. In addition, potential new abatement measures were assessed.

No new or modified abatement measures are recommended with the exception of Measure A-18, which recommends the construction of a ground run-up enclosure to reduce noise from engine run-ups. A preferred location for the proposed ground run-up enclosure has not yet been identified and is therefore not reflected in the Future (2018) NEM/NCP noise exposure contour. Implementation of the 2013 NCP would have a minimal effect on the DNL 65 dBA noise exposure contour. Therefore, the Future (2018) NEM/NCP noise exposure contour is the same as the Future (2018) Baseline contour.

Since there are no new or modified abatement measures that would affect the operating conditions at Sea-Tac other than potential use of a ground run-up enclosure (GRE) for engine testing operations, implementation of the recommended NCP measures would not have a noticeable effect on the DNL 65 dBA noise exposure contour compared to the Future (2018) Baseline noise exposure contour. **Exhibit 6-2,** ***Future (2018) NEM/NCP Noise Exposure Contour***, constitutes the official NEM for the year 2018, and is reflective of implementation of all of the recommended abatement measures.

Table 6-2, ***Future (2018) Noise Exposure Map/Noise Compatibility Program***, presents the noise impacts for the Future (2018) NEM/NCP. There are 3,771 total housing units and an estimated 9,712 residents located within the 65+ DNL of the Future (2018) NEM/NCP noise contour. Of those 3,771 housing units, 2,473 units (2,293 single-family units; 108 two-, three-, or four-family units; and 72 condominiums) have received sound insulation, and therefore are not eligible for additional treatment. Another 1,037 housing units are potentially eligible for sound insulation in this 2013 NCP update. These include single-, two-, three-, or four-family units and condominiums that were previously eligible but the property owners have not responded to previous offers for sound insulation made by the Port, condominiums that were outside the 1998 70 DNL noise exposure contour, and approximately 729 apartments that were not previously eligible but are recommended to be sound insulated in this 2013 NCP update.[11] The remaining 261 housing units are not eligible for sound insulation because they were constructed after the date of a previously published noise contour or the structure cannot be effectively sound insulated. There are no housing units located within the 70+ DNL of the Future (2018) NEM/NCP noise contour.

[11] Previously-approved Abatement Measure M-2c recommended sound insulation of condominiums that were within the 70 DNL of the 1998 noise exposure contour from the 2002 Part 150 Study update. Measures M-14 and M-15 from this 2013 NCP update recommend that condominiums and apartments within the modified Noise Remedy Boundary be sound insulated based on the results of a pilot program and the availability of funding.

FUTURE (2018) NEM/NCP NOISE EXPOSURE CONTOUR				
CONTOUR BAND	CONTOUR AREA (SQUARE MILES)	HOUSING UNITS	ESTIMATED POPULATION	NOISE SENSITIVE FACILITIES
DNL 65+ dBA	7.3	3,771	9,712	9

PUGET SOUND

King County

Normandy Park

Burien

King County

Seattle

Des Moines

Federal Way

Seattle-Tacoma International Airport

SeaTac

Tukwila

King County

Kent

Auburn

King County

Renton

King County

LAKE WASHINGTON

ANGLE LAKE

Legend

Existing Remedy Boundary

Recommended Remedy Boundary

Future (2018) NEM/NCP 65 DNL Noise Exposure Contour

Airport Property Boundary

Municipal Boundary

Water

Existing Land Use

Single-Family Residential

Two-Family Residential

Multi-Family Residential

Agriculture/Open Space

Park/Recreation

Institutional

Commercial/Industrial

Mobile Home Park

0 5,000'

Port of Seattle

14 CFR Part 150 Study

Seattle-Tacoma International Airport

DRAFT

3/18/2013 Prepared by Landrum & Brown
Filename: P:\SEA\Part 150 Update - 2009\GIS\MXD\Exhibits\Document\6-1_Proposed_Noise Remedy Boundary.mxd
contour:SEA2018Noise-Contours

Recommended Noise Remedy Boundary

Exhibit: **6-1**

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FUTURE (2018) NEM/NCP NOISE EXPOSURE CONTOUR				
CONTOUR BAND	CONTOUR AREA (SQUARE MILES)	HOUSING UNITS	ESTIMATED POPULATION	NOISE SENSITIVE FACILITIES
DNL 65-70 dBA	4.4	3,771	9,712	9
DNL 70-75 dBA	1.8	0	0	0
DNL 75+ dBA	1.1	0	0	0
DNL 65+ dBA	7.3	3,771	9,712	9

PUGET SOUND

STUDY AREA

Normandy Park

Burien

King County

Des Moines

Seattle-Tacoma International Airport

DNL 75 dBA

DNL 70 dBA

DNL 65 dBA

SeaTac

Tukwila

Kent

King County

Renton

Seattle

King County

DUWAMISH RIVER

ANGLE LAKE

Seahurst County Park

North Seatac Park

Rainier Golf and Country Club

Riverbend Golf Course

Legend

Future (2018) NEM/NCP Noise Exposure Contour

Study Area

Airport Property Boundary

Municipal Boundary

Water

School

Church

Hospital

Library

Nursing Home

Existing Land Use

Single-Family Residential

Two-Family Residential

Multi-Family Residential

Agriculture/Open Space

Park/Recreation

Institutional

Commercial/Industrial

Mobile Home Park

0 3,500 '

N

Port of Seattle

14 CFR Part 150 Study

Seattle-Tacoma International Airport

LEB

DRAFT

1/16/2013 Prepared by Landrum & Brown

Filename: P:\SEA\Part 150 Update - 2009\GIS\MXD\Exhibits\Document\6-2_Future_2018_NCP_Noise_Contour.mxd

Contour: SEA2018Noise-Contours

Future (2018) Noise Exposure Map/Noise Compatibility Program

Exhibit: **6-2**

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Table 6-2
FUTURE (2018) NEM/NCP LAND USE INCOMPATIBILITIES
Seattle-Tacoma International Airport

MITIGATION STATUS / LAND USE	NOISE CONTOUR BAND		
	DNL 65 - 70 dBA	DNL 70+ dBA	DNL 65+ dBA
HOUSING UNITS			
CITY OF BURIEN			
Sound Insulation Completed			
Single-Family	953	0	953
Two-, Three-, or Four-Family Unit	72	10	72
Condominium	56	0	56
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	57	0	57
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	36	0	36
Apartment	234	0	234
Mobile Home	0	0	0
Not Eligible			
Single-Family	43	0	43
Two-, Three-, or Four-Family Unit	4	0	4
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	31	0	31
CITY OF DES MOINES			
Sound Insulation Completed			
Single-Family	568	0	568
Two-, Three-, or Four-Family Unit	26	0	26
Condominium	16	0	16
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	32	0	32
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	129	0	129
Apartment	463	0	463
Mobile Home	0	0	0
Not Eligible			
Single-Family	84	0	84
Two-, Three-, or Four-Family Unit	4	0	4
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	4	0	4

Table 6-2, *Continued*
FUTURE (2018) NEM/NCP LAND USE INCOMPATIBILITIES
Seattle-Tacoma International Airport

MITIGATION STATUS / LAND USE	NOISE CONTOUR BAND		
	DNL 65 - 70 dBA	DNL 70+ dBA	DNL 65+ dBA
HOUSING UNITS			
CITY OF SEATAC			
Sound Insulation Completed			
Single-Family	648	0	648
Two-, Three-, or Four-Family Unit	8	0	8
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	48	0	48
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	0	0	0
Apartment	32	0	32
Mobile Home	0	0	0
Not Eligible			
Single-Family	57	0	57
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	32	0	32
KING COUNTY			
Sound Insulation Completed			
Single-Family	124	0	124
Two-, Three-, or Four-Family Unit	2	0	2
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	6	0	6
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	0	0	0
Not Eligible			
Single-Family	0	0	0
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	2	0	2

Table 6-2, *Continued*
FUTURE (2018) NEM/NCP LAND USE INCOMPATIBILITIES
Seattle-Tacoma International Airport

MITIGATION STATUS / LAND USE	NOISE CONTOUR BAND		
	DNL 65 - 70 dBA	DNL 70+ dBA	DNL 65+ dBA
HOUSING UNITS			
TOTAL - ALL JURISDICTIONS			
Sound Insulation Completed			
Single-Family	2,293	0	2,293
Two-, Three-, or Four-Family Unit	108	0	108
Condominium	72	0	72
Apartment	0	0	0
Mobile Home	0	0	0
Potentially eligible but not sound insulated			
Single-Family	143	0	143
Two-, Three-, or Four-Family Unit	0	0	0
Condominium	165	0	165
Apartment	729	0	729
Mobile Home	0	0	0
Not Eligible			
Single-Family	184	0	184
Two-, Three-, or Four-Family Unit	8	0	8
Condominium	0	0	0
Apartment	0	0	0
Mobile Home	69	0	69
TOTAL HOUSING UNITS	3,771	0	3,771
ESTIMATED POPULATION			
TOTAL ESTIMATED POPULATION	9,712	0	9,712
NOISE-SENSITIVE PUBLIC FACILITIES			
Schools	2	0	2
Churches / Places of Worship	6	0	6
Libraries	1	0	1
Hospitals	0	0	0
Nursing Homes	0	0	0

Notes: Housing units that were previously not eligible for sound insulation include units that were constructed after the date of a previously published noise contour or units in which the structure cannot be effectively sound insulated.

Estimated population based on average household size by U.S. Census tract data.
Eligibility for mitigation programs will be determined as program implementation moves forward.

Sources: King County Geographic Information System data; Port of Seattle Noise Remedy Program records; U.S. Census Bureau; Landrum & Brown analysis, 2013.

There are two schools, Mt. Rainier High School and St. Philomena Primary School (both of which have been sound insulated by the Port), located within the 65+ DNL of the Future (2018) NEM/NCP noise contour. There are six places of worship: The Apostolic Bible Church, Boulevard Park Presbyterian, First Baptist Church, Lifepoint Foursquare Church, Primera Iglesia Bautista, and St. Philomena Church (of which St. Philomena Church has been sound insulated by the Port). There is one library, Boulevard Public Library, located within the 65+ DNL of the Future (2018) NEM/NCP noise contour. There are no hospitals, or nursing homes located within the 65+ DNL of the Future (2018) Baseline noise contour. There are no housing units or noise-sensitive public facilities located within the 70+ DNL of the Future (2018) Baseline noise contour.

6.3 NOISE COMPATIBILITY PROGRAM COSTS

The Port, supplemented by funding from the FAA, would incur the direct costs associated with the recommended NCP measures. The majority of the costs are associated with sound insulation of eligible housing uses within the recommended Noise Remedy Boundary. Table 6-2 above provided the number of housing units located within the DNL 65 dBA of the Future (2018) NEM/NCP noise exposure contour. However, as noted in the table, some of these housing units have already received sound insulation and others are ineligible for sound insulation. Furthermore, the Port has committed to mitigate eligible housing units in the vicinity of the DNL 65 dBA of the Future (2018) NEM/NCP noise exposure contour that are within the recommended Noise Remedy Boundary. The estimated number of eligible housing units within the recommended Noise Remedy Boundary is included in **Table 6-3, *Potentially Eligible Housing Units within the Recommended Noise Remedy Boundary***.

Table 6-3
POTENTIALLY ELIGIBLE HOUSING UNITS AND ESTIMATED POPULATION WITHIN THE RECOMMENDED NOISE REMEDY BOUNDARY.
Seattle-Tacoma International Airport

LAND USE	OUTSIDE SOUTH ATZ	INSIDE SOUTH ATZ	TOTAL HOUSING UNITS	ESTIMATED POPULATION
Burien				
Single-Family	85	0	85	226
Two-, Three-, or Four-Family Unit	0	0	0	0
Condominium	36	0	36	89
Apartment	234	0	234	587
Subtotal	*355*	*0*	*355*	*901*
Des Moines				
Single-Family	45	0	45	111
Two-, Three-, or Four-Family Unit	0	0	0	0
Condominium	239	0	239	579
Apartment	770	0	770	1,887
Subtotal	*1,054*	*0*	*1,054*	*2,577*
SeaTac				
Single-Family	53	3	56	154
Two-, Three-, or Four-Family Unit	0	0	0	0
Condominium	0	0	0	0
Apartment	5	27	32	86
Subtotal	*58*	*30*	*88*	*240*
King County				
Single-Family	10	0	10	25
Two-, Three-, or Four-Family Unit	0	0	0	0
Condominium	45	0	45	111
Apartment	148	0	148	366
Subtotal	*203*	*0*	*203*	*501*
Total - All Jurisdictions				
Single-Family	193	3	196	515
Two-, Three-, or Four-Family Unit	0	0	0	0
Condominium	320	0	320	779
Apartment	1,157	27	1,184	2,926
Grand Total	**1,670**	**30**	**1,700**	**4,220**

Notes: Estimated population based on average household size by U.S. Census tract data.
Eligibility for mitigation programs will be determined as program implementation moves forward.

Sources: King County Geographic Information System data; Port of Seattle Noise Remedy Program records; U.S. Census Bureau; Landrum & Brown analysis, 2013.

Costs for completion of the program have been estimated in 2012 dollars and are presented in **Table 6-4, *Noise Compatibility Program Implementation Costs***. These cost estimates are based on the consultant team's preliminary assessment and are subject to change once the measures are further evaluated prior to implementation. These costs include one-time expenditures plus additional annual costs for administrative, operational, and maintenance costs. The Port carries the vast majority of responsibility for the costs of the program measures. The Port-funded mitigation actions recommended for implementation are eligible; however, for Federal matching funds amounting to approximately 80 percent of the total program cost.

The costs of each individual measure are detailed earlier in this chapter. The total estimated cost for all NCP recommendations, which includes the continuation of some program measures from the 2002 NCP Update, is between $87,225,000 and $106,635,000 plus additional operational, maintenance, and administrative costs. Note that this cost includes completion of the residential sound insulation program. Completion of the single family sound insulation program was also an element of the July 3, 1997 Record of Decision (ROD) for the Master Plan Update for the inclusion of the new third runway.[12] This cost estimate assumes 100 percent participation in the Noise Remedy Program by eligible property owners. This cost estimate does not include additional site preparation work which may be required for construction of a hush house (see Measure A-18), depending upon the site selected. This cost estimate does not include funding that has already been committed to sound insulate schools within the Highline School District in the vicinity of Sea-Tac Airport and the Highline Community College Campus, for which funding has been previously committed through a Memorandum of Agreement between the FAA, the Port and the District.

[12] United States Department of Transportation, Federal Aviation Administration, Record of Decision for the Master Plan Update Development Actions SEA-TAC International Airport, Seattle, Washington, July 3, 1997.

Table 6-4
NOISE COMPATIBILITY PROGRAM IMPLEMENTATION COSTS
Seattle-Tacoma International Airport

TYPE OF MEASURE	DIRECT COST TO AIRPORT	DIRECT COST TO LOCAL GOVERNMENT	DIRECT COST TO USERS
ABATEMENT MEASURES			
Construction of a ground run-up enclosure	$6,000,000 plus additional site preparation and operational and maintenance costs	None	Operating costs to use the ground run-up enclosure will be primarily a function of distance to taxi to and from the facility. The final location is not yet known; therefore, operating costs cannot be estimated. However, it is not anticipated that operating costs will be increased significantly at any of the locations.
- Other measures	Administrative costs	Minimal	Minimal
Subtotal	***$6,000,000 (not including GRE site preparation and operational costs) plus other administrative costs***	***Minimal***	***Minimal***
MITIGATION MEASURES			
Sound insulate eligible single-family housing units (including installation of central air conditioning for sound insulation of eligible homes that have not previously been sound insulated)	$16,405,000 to $18,335,000	None	None
Formal Study to Evaluate Noise Levels at eligible churches/places of worship	$30,000 to $40,000	None	None
Sound insulate eligible owner-occupied multi-family units (condominiums)	$16,640,000 to $21,440,000	None	None
Conduct feasibility study to sound insulate eligible tenant-occupied multi-family units (apartments)	$1,100,000	None	None
Sound insulate eligible tenant-occupied multi-family units (apartments)	$34,710,000 to $46,280,000	None	None

Table 6-4, *Continued*
NOISE COMPATIBILITY PROGRAM IMPLEMENTATION COSTS
Seattle-Tacoma International Airport

TYPE OF MEASURE	DIRECT COST TO AIRPORT	DIRECT COST TO LOCAL GOVERNMENT	DIRECT COST TO USERS
MITIGATION MEASURES (CONTINUED FROM PREVIOUS PAGE)			
Purchase avigation easements for individual mobile homes	$440,000	Loss of tax base	None
South ATZ Acquisition	$10,000,000	Loss of tax base	None
Other Land Use Management Measures	Administrative costs	Minimal administrative costs	None
Subtotal	***$79,325,000 to $97,655,000 plus administrative costs***	***Minimal administrative costs; loss of tax base***	***None***
PROGRAM MANAGEMENT MEASURES			
Evaluate and Expand Noise Monitoring and Flight Tracking System	$1,500,000 to $2,000,000	None	None
Update NEM or NEM/NCP - Update NEM **ONLY** **Or** - Update NEM **AND** NCP	$400,000 to $500,000 $1,000,000	None	None
Subtotal	***$1,900,000 to $3,000,000 plus administrative costs***	***None***	**None**
TOTAL – ALL MEASURES			
TOTAL – ALL MEASURES	**$87,225,000 to $106,635,000 plus other administrative, operational, and maintenance costs**	**Minimal administrative costs; loss of tax base**	**Minimal**

Notes: Total cost for remedial land use mitigation measures assumes 100 percent participation in program by eligible property owners.
Total cost for remedial land use mitigation measures excludes housing units that were constructed after October 1, 1998, which are considered ineligible for mitigation per FAA guidelines.
Costs for Measure M-2a does not include sound insulation of previously eligible units outside the recommended Noise Remedy Boundary in which the Port has committed to sound insulate per the 2002 NCP.
Cost to conduct a feasibility study to sound insulate eligible tenant-occupied multi-family units (apartments) assumes the implementation of a pilot project to conduct sound attenuation testing and sound insulate selected units to determine appropriate program methods.
All costs are in 2013 dollars

Source: Landrum & Brown, 2013 based on data provided by the Port of Seattle and King County and other comparable mitigation programs at other U.S. airports.

6.4 NOISE COMPATIBILITY PROGRAM IMPLEMENTATION

As shown in Table 6-1 the existing abatement measures A-1, A-3, A-6, A-10, A-15, and A-16, and existing mitigation measures M-2a, M-2b, M-5, M-6, M-7, M-11, and M-12 are from the previously approved 2002 Part 150 NCP and can continue uninterrupted. The recommended abatement measures A-18 and A-19 will require FAA approval to become part of the NCP. Measure A-18 will also require an environmental analysis per the National Environmental Policy Act (NEPA) prior to FAA implementation and will be subject to Safety Risk Management provisions as outlined in FAA Order 5200.11.

The implementation of the recommended mitigation measures M-14, M-15, M-16, and M-17 will require FAA approval to become part of the NCP. New mitigation measures that are implemented using Federal funding will be required to undergo an analysis per NEPA prior to implementation. Land use include property acquisition must adhere to the provisions of the Uniform Relocation Assistance and Real Properties Acquisition Polices Act.

Recommended Program Management Measure P-1 can be implemented at the discretion of the Port; however, this measure will require FAA approval of the NCP in order to be eligible for Federal funding. It is anticipated that the FAA will issue a Record of Approval. Recommended Measure P-2 includes periodic review of the NEMs and NCP and can be implemented as needed. Recommended Measure P-3 is an administrative action and can be implemented at the discretion of the Port.

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