

PROGRAMMATIC ENVIRONMENTAL CHECKLIST
Seattle-Tacoma International Airport (SEA)
Flight Corridor Management Program

A. BACKGROUND

1. Name of proposed project, if applicable:

Flight Corridor Management Program (Program)

2. Name of applicant:

Port of Seattle (Port)

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

Port of Seattle
P.O. Box 68727
Seattle, WA 98168

Contact: Steve Rybolt, Senior Environmental Program Manager
Telephone/Email: (206) 787-5527, Rybolt.S@portseattle.org

4. Date checklist prepared: August 20, 2025. Revised October 22, 2025¹

5. Agency requesting checklist: Port of Seattle – SEPA File Number 2025-05

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

The Program has regular implementation cycles. Approximately every five years the Port collects data on obstructions that are then scheduled for removal to maintain the SEA flight corridor in compliance with Federal Aviation Administration (FAA) regulations.

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

The Program will continue to identify and remove obstructions (trees) on a routine basis in order to comply with FAA requirements for the flight corridor.

Information about each implementation cycle, including the number and location of trees identified for removal, tree replacement requirements and commitments, and best management practices (BMPs), will be made available on the Port of Seattle's website, www.portseattle.org.

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

SEPA Documentation

The Port first instituted a comprehensive Flight Corridor Management Program in 2014, while having previously conducted several obstruction (tree) removal projects over the preceding years. The Port completed project-level SEPA reviews for past implementation cycles of the Program (i.e., 2016 and 2019). Through multiple implementations cycles the number of tree obstructions requiring removal has steadily declined and the implementation

¹ Revisions are double-underlined in the document.

process has become well established. The Port has determined that this Program-level review is more appropriate than separate project-level evaluations. If significant changes to the Program process and implementation are required, the Port will determine if additional SEPA review is warranted.

Program Documentation

The *SEA Flight Corridor Management Program Description* is provided as Attachment B to this SEPA Checklist.

Each implementation cycle will be documented in a publicly available Implementation Plan and Regulatory Memo as described below.

- The Implementation Plan documents the findings from obstruction data collection and on-site verification of trees, detailing species, standard diameter, condition, height, location, jurisdiction, and property ownership. It outlines proposed tree removal, access requirements, estimates replacement quantities, describes removal methods, summarizes applicable requirements, and provides a projected schedule for removal and replanting.
- The Regulatory Approach Memorandum is developed each cycle to guide compliance for that cycle. Since regulations are continuously updated, the regulatory requirements must be verified and updated. The regulations applicable to tree removal and replacement may be federal, state, and local regulations along with Port policies and standards. The memo will detail each jurisdiction's current permitting requirements and standards for access, tree removal and tree replacement.

Past Documentation

- Seattle-Tacoma International Airport Flight Corridor Program – Regulatory Approach Memorandum (2016, 2019, 2025)
- Seattle-Tacoma International Airport Flight Corridor Program – Implementation Plan (2016, 2019, 2025)

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

No applications are pending for governmental approvals or other proposals directly affecting the Program.

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

During each implementation cycle Port staff will seek Port Commission approval for design and construction costs. The Port will comply with federal, state, and local regulations and permit requirements as applicable to tree removal and replacement.

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.)

Program Purpose

SEA has three parallel runways, each with instrument-guided, very precise flight procedures and flight paths. The flight corridor for each runway is made up of flight surfaces: a set of imaginary surfaces that define a volume of airspace horizontally and vertically from the intended flight path. The Port is required to follow conditions of Title 49 of the United States Code (49 U.S.C.) Subtitle VII and Title 14 of the Code of Federal Regulations (14 CFR 139), as stipulated in SEA's Airport Operating Certificate issued by the FAA. These require the Port to ensure there are no obstacles or obstructions on or around SEA that could affect the flight corridors. This Program is necessary to identify and manage obstructions to the flight corridor, which at SEA typically is trees. Maintenance of SEA flight corridors is a priority for the Port, the state of Washington, and the FAA.

Categories of Obstructions

There are four categories of trees that may be removed during implementation of the Program:

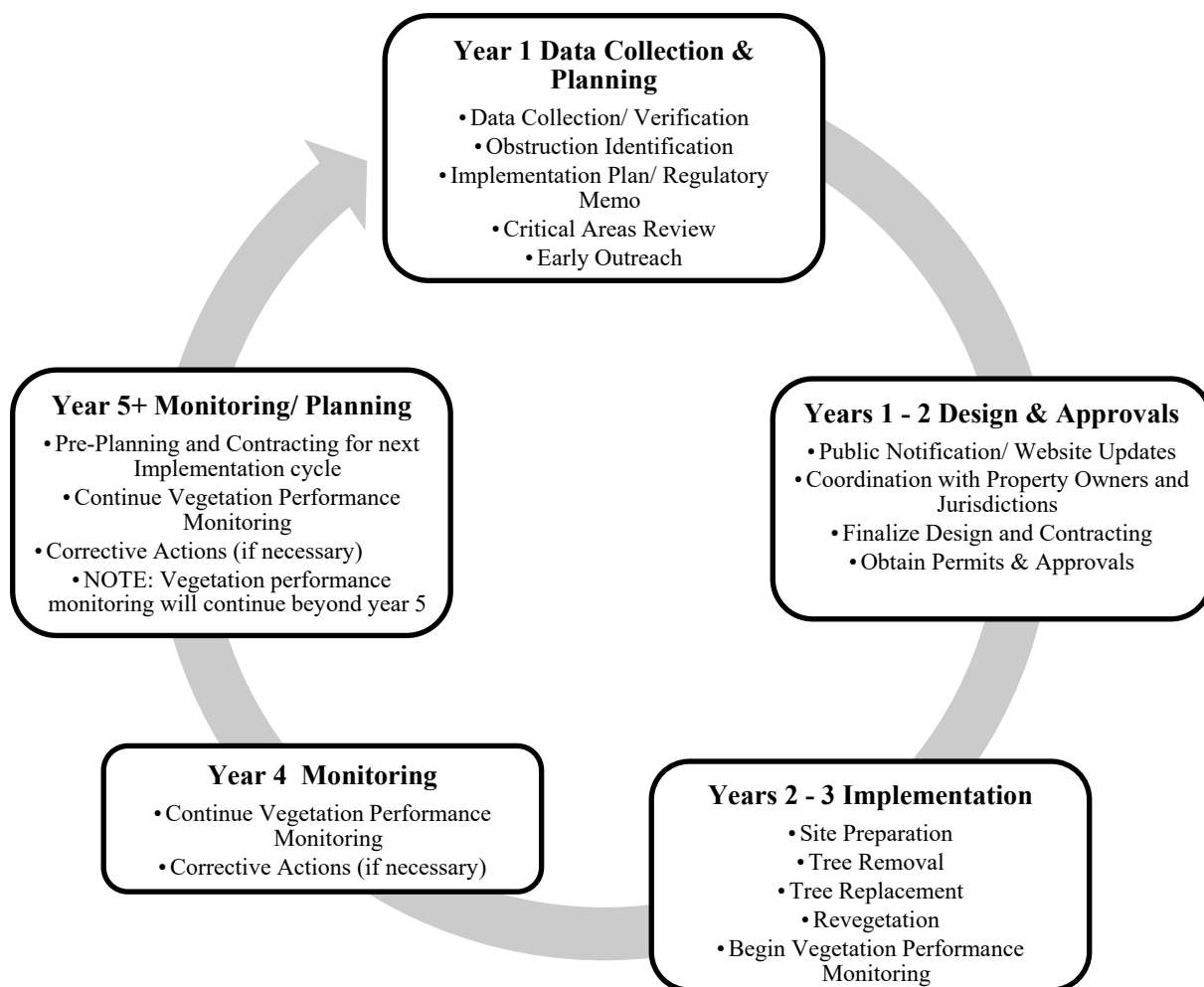
- *Current Obstructions:* Trees that currently penetrate a flight surface as identified through data collection and verification. Current obstructions also include trees that are anticipated to penetrate a flight surface within the next 5 years before the next implementation cycle. Current obstructions are the primary category of trees that would require removal under the Program.
- *Incidental Trees:* Trees that must be removed to allow access to current obstructions. The number of incidental trees is estimated in the Implementation Plan and further refined during the design stage as construction access and staging needs are defined.
- *Future Obstructions in Critical Areas.* Critical areas such as wetlands and buffers provide unique ecological functions that are sensitive to disturbance. To avoid repeatedly disturbing these functions, SEA may proactively remove trees with a high potential to become an obstruction in the future.
- *Navigation Aid (NAVAID) Obstructions:* Trees may interfere with the visibility and/or operation of NAVAIDs at SEA. NAVAIDs include the six runway light bridges and associated approach lights. The FAA has the statutory authority to establish, operate, and maintain these NAVAIDs. The FAA may remove these obstructing trees at any time or may require the Port remove these trees. Historically, the FAA has conducted these removals without involving the Port.

As SEA continues to carry out the Program and replanted trees are intentionally selected to avoid tall species that could pose future obstruction risks, the number of trees requiring removal is projected to decline over time. The Port first instituted a comprehensive Flight Corridor Management Program in 2014, including required tree replacement and habitat restoration while having previously conducted several obstruction removal projects over the preceding years. In the Program's first year of implementation, 1,167 trees were removed. During the 2019 cycle, that number dropped significantly to 174. In the most recent 2024 data collection effort, approximately 220 trees have been identified for removal.

Program Description

The Program follows a sequence of steps, implemented on a regular basis (approximately every 5 years), to ensure obstructions (trees) are identified and removed, and includes ongoing site management and monitoring to support healthy ecological communities. Local jurisdictions determine the tree removal and replacement requirements for activities on public property. Affected jurisdictions may include the Port, WSDOT, Highline School District, and the cities of SeaTac, Burien and Des Moines. Removals may also occur on commercial and private lands in coordination with the landowners. The Port will coordinate directly with commercial and private property owners and affected jurisdictions. A summary of the Program steps is provided below and shown in Figure 1.

Figure 1. Program Implementation: Typical Five-Year Implementation Cycle



- 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.**

To complete this environmental review of the Program, the area where tree removals may occur in the future has been estimated (see *Figure 2 Program Area*). The area is based on the Runway Protection Zones for SEA's east and west runways (34R/16L and 34L/16R), extending 1,500 feet east and west, and 3,500 feet north and south beyond the outer limits of these zones. This area covers the location of obstructions identified during past data collection in 2014, 2019, and 2024. The Program Area includes Port-owned properties; public properties (owned by the WSDOT, Highline School District and the cities of SeaTac, Burien and Des Moines); and commercial and privately-owned lands in the cities of Burien, SeaTac, and Des Moines.

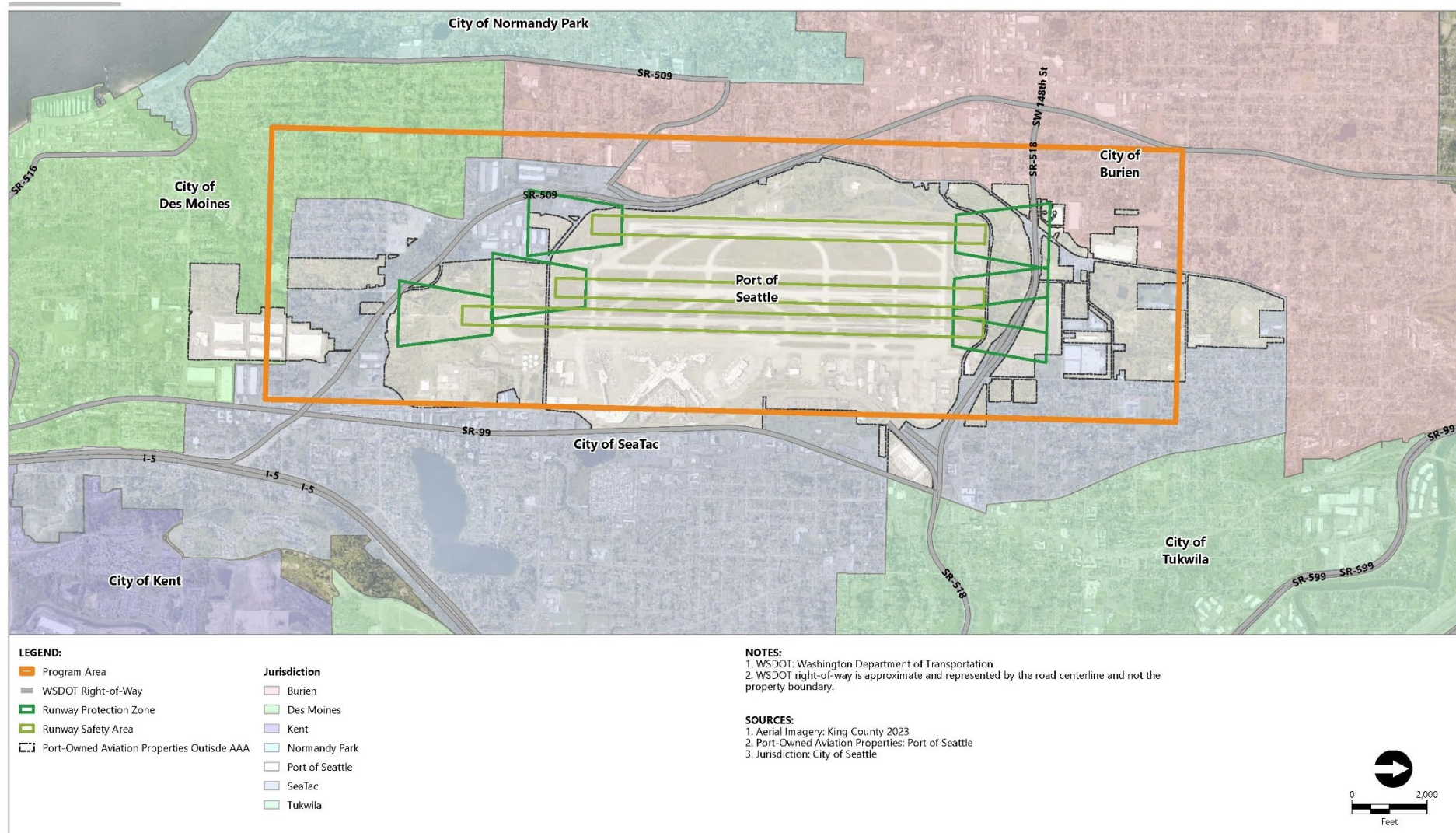


Figure 2 Program Area

B. ENVIRONMENTAL ELEMENTS

1. Earth

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

The Program Area includes paved surfaces and associated airport infrastructure surrounded by various urban, commercial, residential, and industrial zones with natural areas interspersed throughout.

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

Most of the Program Area is flat and rolling. Steep slopes (greater than 40%) occur in some portions of the Program Area, and tree obstructions may be located on these steep slopes.

- 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 agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.**

Underlying soil throughout SEA and nearby properties consists primarily of pre-existing glacial till (i.e., Vashon till) and associated outwash sediments or imported sand and gravel that were graded and compacted during original site use.

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

There are no surface indications or known historically unstable soil within and surrounding SEA. The nearest erosion hazard is located approximately 0.8 mile south of SEA, near Des Moines Creek.

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.**

Some minor excavation and grading for access may occur as part of the Program during removal of tree obstructions and planting replacement trees.

- 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 activities associated with obstruction removal and revegetation; however, erosion and sediment control and prevention measures will be implemented to minimize that potential.

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

There will be no change in impervious surface resulting from the Program.

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

During construction, Temporary Erosion and Sediment Control (TESC) plans will be in place to prevent erosion at all sites during tree removal and replacement construction activities. This is a requirement of the Port's Guide Specifications.

2. Air

- a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.**

Emissions from this Program, including greenhouse gases, will be minimal. Emissions will be

generated during construction activities for tree removal and replacement resulting from workers traveling to and from the site and using construction equipment. Construction activities will also result in short-term, construction-related air emissions such as dust and vehicle exhaust.

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

There are no off-site sources of emissions that will affect the Program.

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

The contractor(s) implementing work under the Program will be required, per the Port's Master Specifications, to maintain and repair all equipment in a manner that meets state regulations and reasonably minimizes emissions.

3. Water

a. Surface Water:

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 Program Area includes Tub Lake, Lora Lake, Reba Lake, Bow Lake, Angle Lake, Gilliam Creek, Walker Creek, Miller Creek, East and West Forks of Des Moines Creek, the mainstem Des Moines Creek, Northwest Ponds and wetlands which drain into Puget Sound.²

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.

Yes, obstruction removal may occur in wetlands, wetland buffers, and areas adjacent to streams—all of which are regulated as critical areas. Before any trees are removed from a critical area, a critical areas review will be conducted in accordance with the requirements of the relevant jurisdiction.

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.

There is no fill or dredge material that is anticipated to be placed in or removed from the surface waters or wetlands. Stumps will not be grinded or grubbed. To inhibit resprouting, stumps can be treated with approved herbicides that promote decay of the remaining structure.

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

The Program will 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.

Some parts of the Program Area are within a mapped 100-year floodplain, as designated by the Federal Emergency Management Agency. These areas are located north/northwest of SEA and include the Miller Creek Regional Detention Facility (Lora

² Anchor QEA, 2016. Seattle-Tacoma International Airport Flight Corridor Safety Obstruction Management Program Sensitive Areas Special Study. Prepared for: Port of Seattle. 2016.

Lake and Reba Lake), and Tub Lake.

- 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 Program does not involve any discharges of waste materials to surface waters.

b. Ground Water:

- 1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.**

Groundwater will not be withdrawn, nor will water be discharged to groundwater for the Program.

- 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.**

Waste materials will not be discharged into the ground from a septic system or other source.

c. Water runoff (including stormwater):

- 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.**

Implementation of the Program will not create a new source of runoff (including storm water). Stormwater on Port property where tree removal may occur drains into SEA's stormwater system that include infiltration and detention treatment systems and is subject to SEA's National Pollution Discharge Elimination System (NPDES) permit (#WA-0024651). Once treated, water is discharged to Puget Sound via Des Moines Creek, Miller Creek, and Walker Creek

Outside of SEA's stormwater system each site will be evaluated to assess whether stormwater discharge will infiltrate the ground or enter municipal stormwater systems. Work areas with run-off entering municipal stormwater systems will ultimately reach the Puget Sound via the Des Moines Creek, Miller Creek, Walker Creek or Gilliam Creek sub-basins.

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

Program design and construction management will prevent discharge of waste materials to surface waters through existing and upgraded stormwater best management practices (BMPs) as required by the local jurisdiction requirements (e.g., King County Stormwater Pollution Prevention Manual); the *Stormwater Management Manual for Western Washington* (Ecology 2024); SEA's individual NPDES permit; and SEA's Spill Prevention, Control, and Countermeasure Plan.

- 3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

Activities within the Program Area are not anticipated to alter or otherwise affect drainage patterns.

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

Program design and construction management will prevent discharge of waste materials to surface waters through required stormwater BMPs. Tree removal activity within the Program Area is not anticipated to involve disturbance greater than 1 acre. However, in the event that 1 acre or more is disturbed under the Program, water quality will be maintained by treatment under conditions of an approved NPDES Construction Stormwater General Permit and an associated Stormwater Pollution Prevention Plan.

Best Management Practices

During Program implementation, work plans will include BMPs to minimize impacts to critical areas, such as:

- Perform manual tree removal within critical areas, rather than using large equipment, which could involve felling, limbing, and bucking trees using chain saws.
- Protect existing native shrubs and groundcovers during tree removal to the extent practical.
- Leave stumps and roots in place on steep slopes to minimize disturbance to adjacent wetland; retaining stumps will also minimize excessive disturbance to slope.
- Complete removals or activities that occur within a steep slope area in a manner that will not steepen the existing slope any further.
- Mulch obstruction removal area to suppress weed growth.
- Remove invasive species in obstruction removal areas.
- Remove trees during the dormant season (October through March) and replant within the same season to minimize impacts to habitat and to limit potential erosion.
- Replant sites with a mixture of native vegetation made up of low-growing trees and shrubs. The vegetation mix will be designed to provide the same function as the removed trees but will not grow in size to encroach upon the flight corridor.
- Hydroseed area with a native species mix to provide erosion control.
- The contractor will be required to develop and implement a Spill, Prevention, Control, and Countermeasure Plan to be used for the duration of the Program to safeguard against an unintentional release of fuel, lubricants, or hydraulic fluid from construction equipment.
- The contractor will be required to implement and maintain temporary erosion and sediment control BMPs through obstruction removal until obstruction removal is complete and the site is revegetated.
- Erosion control measures that remain on site must be composed of 100% biodegradable materials.
- No petroleum products, chemicals, or other toxic or deleterious materials will be allowed to enter surface waters.
- The contractor will be required to retrieve any floating debris generated during construction using a skiff and a net. Debris will be disposed of at an appropriate upland facility.

- The contractor will be required to properly maintain construction equipment and vehicles to prevent them from leaking fuel or lubricants. If there is evidence of leakage, the further use of such equipment will be suspended until the deficiency has been satisfactorily corrected.

If a tree within a critical area is identified for removal during an implementation cycle, SEA may also elect to remove nearby trees that are likely to become future obstructions based on their species and current condition. This proactive approach helps minimize repeated disturbances to the critical area over time.

Revegetation and Tree Replacement

Wetlands, wetland buffer areas and stream buffer areas will be replanted with a mixture of native vegetation made up of low-growing trees and shrubs. The vegetation mix will be designed to provide the same function as the removed trees but will not grow to a size that could constitute a future obstruction. The vegetation mix could include native shrubs and low-height trees such as Oregon ash, red alder, and shore pine. When the required tree replacement and/or revegetation/ enhancement ratio cannot be met on site due to space constraints or owner/agency request, planting will occur at an off-site location within the same drainage basin, and/or in-lieu fees will be paid to a tree bank.

Vegetation Performance Monitoring

Tree survival, invasive cover and canopy cover will be monitored. Percent survival and species of trees and vegetation will be documented. Established performance standards for the Program will be compared to the monitoring results to record the success of the plantings. Where performance standards are not met, the Port shall develop a corrective action plan. Corrective actions may include, but are not limited to, additional plant installation and plant substitutions of type, size, quantity, and location.

4. Plants

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

- ☒ deciduous tree: alder, maple, aspen, other:
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrubs
- ☒ grass
- ☐ pasture
- ☐ crop or grain
- ☐ orchards, vineyards, or other permanent crops
- ☒ 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?

The Program will remove a variety of trees that may “affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication

facilities” (14 CFR Part 77). The trees to be considered for removal will be identified via aerial photogrammetry or Light Detection and Ranging (LiDAR) sensors throughout the Program Area. Trees could include heritage, historic and landmark trees as identified by the local jurisdictions. Trees likely to grow tall enough to become an obstruction requiring removal include, but are not limited to, the following species:

- Bitter Cherry (*Prunus emarginata*)
- Cascara (*Frangula purshiana*)
- Big Leaf Maple (*Acer macrophyllum*)
- Black Cottonwood (*Populus balsamifera*)
- Douglas Fir (*Pseudotsuga menziesii*)
- Ponderosa Pine (*Pinus ponderosa*)
- Red Alder (*Alnus rubra*)
- Willow (*Salix* sp.)
- Western Hemlock (*Tsuga heterophylla*)
- Western White Pine (*Pinus monticola*)
- Western Red Cedar (*Thuja plicata*)

As SEA continues to carry out the Program, and replanted trees are intentionally selected to avoid tall species that could pose future obstruction risks, the number of tree removals is projected to decline over time. In the most recent 2024 data collection, approximately 220 trees have been identified for removal.

Incidental clearing for access may also require alteration or removal of shrub and groundcover plant species. Incidental clearing will be minimized to the least extent required, and plant salvage will be conducted if feasible.

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

No threatened or endangered plant species are known to occur at SEA or in the Program Area.

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

An Implementation Plan for each obstruction removal cycle under the Program will provide specific details on the methods for tree removal, replacement, and monitoring and further details on environmental commitments, BMPs, tree replacement ratios and re-planting locations.

Best Management Practices

The Program’s BMPs preserve or enhance vegetation on the site include:

- Design staging and access to minimize disturbance
- Avoid ground disturbance in wetlands
- Protect and/or restore vegetative buffers near streets and buildings
- Protect existing native vegetation
- Implement construction BMPs (spill prevention, erosion control, machinery leaks) to avoid environmental contamination
- Replant densely to prevent future obstructions from establishing
- Meet or exceed minimum tree replacement requirements
- Remove and control invasive threats to native plant species

- Plant native trees and understory species to increase canopy cover and habitat structure
- Plant a range of species to increase biodiversity
- Avoid tree topping
 - Due to the Pacific Northwest's high concentration of birds of prey, tree topping is not recommended as it can provide perching/roosting habitat for raptors that present an aviation wildlife hazard. Additionally, the U.S. Department of Agriculture warns against topping trees as it makes them more prone to disease and mortality. Because it compromises safety and undermines principles of responsible land stewardship, topping trees is not considered an option for managing the flight corridor.

Additional BMPs for work within critical areas are listed above in Section 3d.

Plant Salvage

The Port may salvage native shrub and groundcover plant materials within an obstruction removal area for transplanting at restoration sites. Salvaged vegetation may be used within cleared areas during site treatment. After the removal of trees, new trees will be planted and would consist of native or ornamental varieties with mature heights that would not become future obstructions.

Tree Replacement

Trees offer ecological and social benefits to nearby communities, which prompted the Port to develop its Land Stewardship Plan and associated Tree Replacement Standards. It is anticipated that most trees requiring removal during implementation of the Program will be located in the Airport Activity Area (AAA) which encircles the runways. The AAA is a specific area defined in the 2018 Interlocal Agreement (ILA) between the Port and City of SeaTac. Within the AAA, the Port's Landscape Design Standards apply a rigorous four-credit tree replacement policy that supports urban forests and trees by requiring four actions to compensate for every tree removed. These actions include tree plantings, invasive species removal, maintenance on nearby Port-owned forest communities, or a combination of these efforts. At least 50 percent of the credits must be direct tree planting.

Local jurisdictions determine the replacement requirements for tree removals outside of the AAA. Affected jurisdictions may include WSDOT and the cities of SeaTac, Burien and Des Moines. A Regulatory Approach Memorandum will be developed each cycle to detail the current regulatory framework for tree removal and tree replacement standards. When the required tree replacement and/or revegetation/enhancement ratio cannot be met on site due to space constraints or owner/agency request, planting will occur at an off-site location within the same drainage basin, and/or tree bank funding would be pursued. Private property owners will be able to select the replacement tree species from the species list approved by the Port and local jurisdiction (as applicable).

Vegetation Performance Monitoring

Tree survival, invasive cover and canopy cover will be monitored. Percent survival and species of trees and vegetation will be documented. Established performance standards for the Program will be compared to the monitoring results to record the success of the mitigation. Where performance standards are not met, the Port shall develop a corrective action plan. Corrective actions may include, but are not limited to, additional plant installation and plant substitutions of type, size, quantity, and location.

- e. **List all noxious weeds and invasive species known to be on or near the site.**

Invasive species near obstructions primarily consist of ivy (*Hedera helix*), Himalayan blackberry (*Rubus ameniacus*), tansy (*Tanacetum vulgare*), poison hemlock (*Conium maculatum*), and white polar (*Populus alba*).

5. Animals

a. List any birds and animals which have been observed on or near the site or are known to be on or near the site. Examples include:

Birds: , , , other:

Mammals: deer, bear, elk, , other:

Fish: bass, , , herring, shellfish, other:

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

No known threatened or endangered animal species are on or near SEA properties.

No critical habitat is present in the Program Area. A search of the U.S. Department of Fish and Wildlife Service (USFWS) planning tool indicate that federally listed bird, reptile, fish, and insect species may be present within the Program Area (USFWS 2025), including:

- Marbled Murrelet (*Brachyramphus marmoratus*) - Threatened
- Yellow-billed Cuckoo (*Coccyzus americanus*) - Threatened
- Northwestern Pond Turtle (*Actinemys marmorata*) - Proposed Threatened
- Bull Trout (*Salvelinus confluentus*) - Threatened
- Monarch Butterfly (*Danaus plexippus*) - Proposed Threatened

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

The Program Area is not part of any known migration routes.

It is noted that most bird species in Washington State, except for introduced birds such as the European starling, rock doves (pigeons) and English house sparrows, are migratory birds, which may be present in the Program Area.

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

Replanted trees on Port property will adhere to SEA Landscape Design Standards to support safe airport operations and minimize wildlife hazards. Prior to construction, trees will be visually inspected for the presence of nesting birds. If active nests are found, BMPs will be used to develop measures to prevent disturbing nests, such as instituting a 100-foot buffer around the nests and/or timing restrictions.

e. List any invasive animal species known to be on or near the site.

Rock pigeons (*Columba livia*) and European starlings (*Sturnus vulgaris*), and American bullfrog (*Rana [Lithobates] catesbeiana*) are invasive animal species known to exist within the Program Area.

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.

Diesel fuel and gasoline will be used on site to power construction equipment including, but not limited to, chainsaws, excavators, dump trucks, and power generators.

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

The Program will 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:**

Contractors performing tree removals and other associated activities will be required to maintain and repair all equipment in a manner that minimizes emissions, where possible.

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.**

Implementation of the Program is unlikely to result in exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste. During each implementation cycle, field work will be conducted to characterize tree obstructions and assess general site conditions.

- 1) Describe any known or possible contamination at the site from present or past uses.**

It is possible that contaminated soils may be encountered during tree removal activities. Plans will be in place to handle contaminated soil if it is encountered during construction, and all pertinent local, state, and federal regulations will be followed.

- 2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

There are multiple utility corridors within the Program Area including underground natural gas pipelines and overhead electrical distribution/transmission lines. During each implementation cycle, field work will be conducted to locate and avoid utilities according to pertinent local, state, and federal regulations.

- 3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

Diesel fuel and gasoline will be used on site to power construction equipment including, but not limited to, chainsaws, excavators, dump trucks, and power generators.

- 4) Describe special emergency services that might be required.**

No special emergency services are expected as a result of implementing the Program construction activities. Construction-related accidents or injuries may require response from local fire, police, air units, or ambulances. The Port maintains its own police force and firefighting and rescue units that will be called upon for these types of incidents both on and off Port property. The Port also maintains a trained response team available to respond at all times to any spill or loss of contaminated or hazardous materials.

- 5) Proposed measures to reduce or control environmental health hazards, if any:**

If encountered, local, state, and federal regulations regarding safety and handling of hazards materials will be enforced.

b. Noise

- 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 vicinity is generated by aircraft operations. Local roadway traffic is also a source of noise in the vicinity.

- 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.**

Short-term noise is anticipated from the use of construction equipment during obstruction removal and revegetation activities.

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

Short-term noise from obstruction removal activities will be mitigated by the use of BMPs and adhering to the City of SeaTac, City of Burien, and City of Des Moines noise ordinances for work within these jurisdictions. No long-term noise mitigation measures are proposed because construction and removal activities will not change existing noise levels in the long term.

8. Land and shoreline use

- a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.**

Obstructions may be located on properties with a variety of current uses including airport operations, commercial business operations, industrial operations, local or state-owned right-of-way, schools, parks, private cemetery, and private residences. Implementing the Program will not affect current land uses on nearby or adjacent properties.

- b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?**

Anticipated object removal sites within the Program Area are not used as working farmlands or working forest lands.

- 1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:**

There are no surrounding working farms or forest lands near the Program Area.

- c. Describe any structures on the site.**

There are commercial and publicly owned buildings, residential houses, and airport navigational aids on and adjacent within and near the vicinity of SEA. It is not anticipated that there will be any impacts to existing structures.

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

It is not anticipated that structures will be demolished for the Program.

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

The zoning classifications will not change as a result of this Program, and there is no expected

impact to zoning classifications. The current zoning within, and surrounding SEA are as shown in Table 1.

Table 1. Zoning at SEA and Surrounding Areas within the Program Area

Jurisdiction	Zoning Classification
SeaTac	Airfield Operations (AVO) Avian Commercial (AVC) Commercial Low (CL) Industrial (I) Neighborhood Village High (NVH) Neighborhood Village Medium (NVM) Park (P) Regional Business Mix (RBX) Residential High (RH) Residential Low (RL) Residential Medium (RM) Urban Residential High (URH) Urban Residential High-Mixed Use (URH-MU) Urban Residential Medium (URM) Urban Village High (UVH) Urban Village Medium (UVM) Community Business (CB) Community Business in Urban Center (CB-C)
Burien	Single Family Residential Zones (RS-A, RS-7200) Multi-Family Residential Zones (RM-24) Special Planning Area (SP-3) Airport Industrial (AI-1, AI-2) Professional Residential (PR) Industrial (I) Community Commercial (CC) Regional Commercial (CR) Commercial Industrial (CI) Downtown Commercial (DC) Office (O) Urban Center (UC)
Des Moines	Business Park Zone (B-P) Residential Suburban Estate Zone (R-SE) Single Family Residential Zone (RS-7200)
Tukwila	Low Density Residential (LDR) Medium Density Residential (MDR) High Sensity Residential (HDR) Residential Commercial Center (RCC) Regional Commercial (RC)

Jurisdiction	Zoning Classification
Normandy Park	Neighborhood Center (NC) Residential Very Low Density (R-20, R-12.5) Residential Medium High Density; Multifamily (RM-2400)

Sources:

[Interactive Maps | City of SeaTac \(seatacwa.gov\)](https://www.seatacwa.gov/Interactive-Maps)

[Zoning – City of Burien \(burienwa.gov\)](https://www.burienwa.gov/Zoning)

[Plan Development – City of Des Moines, WA \(desmoineswa.gov\)](https://www.desmoineswa.gov/Plan-Development)

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

Table 2. Comprehensive Plan Designations within the Program Area

Jurisdiction	Zoning Classification
SeaTac	Airfield Operations Avian Commercial Industrial Park Regional Business Mix Community Business Community Business in Urban Center Urban Low-Density Residential Urban High-Density Residential
Burien	Professional/Residential Industrial Airport Industrial Community Commercial Office
Des Moines	Residential, Single- and Multi-Family
Tukwila	Residential Commercial
Normandy Park	Park Residential Neighborhood Center

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

Tree obstructions are not anticipated to be located within a shoreline area.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Before any trees are removed from a critical area, a critical areas review will be conducted in accordance with the requirements of the relevant jurisdiction. The critical areas located within and near the Program Area are classified by the local jurisdictions as follows:

- *SeaTac Municipal Code (SMC) 15.7 Critical Areas:* Any of those areas in the City which are subject to natural hazards or those land features which support unique, fragile or valuable natural resources including fishes, wildlife and other organisms and their habitat, and such resources which carry, hold or purify water in their natural state. Critical areas include coal mine hazard areas, erosion hazard areas, flood hazard areas, landslide hazard areas, seismic hazard areas, steep slope hazard areas, streams, volcanic

hazard areas, wetlands and critical aquifer recharge areas.

- *Des Moines Municipal Code (DMMC) 16.10 Environmentally Critical Areas:* Geologically hazardous areas, hillsides, wetlands, areas of special flood hazard, fish and wildlife habitat conservation areas, aquifer recharge areas and streams, and the buffers of these areas as defined in chapter 16.01 DMMC, together constitute critical areas that are of special concern to the City.
- *Burien Municipal Code (BMC) 19.40 Critical Areas:* Aquifer recharge areas, fish and wildlife habitat conservation areas, frequently flooded areas, geologically hazardous areas, streams, and wetlands.
- *Port of Seattle/City of SeaTac ILA:* The Port has a defined area called the Airport Activity Area (AAA) per a 2018 ILA between the Port and City of SeaTac. For trees located in designated critical areas within the AAA, the ILA specifies that the City's critical areas regulations will apply. The Port is responsible for administering this review, including preparation of critical area reports. The ILA further states that these regulations will be "flexibly administered on a case-by-case basis" to harmonize state and federal requirements (ILA Section 6.2(D)). The Port will oversee both the critical areas review process and the identification and implementation of any necessary mitigation for unavoidable impacts resulting from the Program.

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

None. There will be no new jobs created following the completion of construction activities for the Program.

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

There will be no displacement of people expected as a result of Program activities.

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

Not applicable. There will be no persons displaced as a result of the Program.

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

Not applicable. No measures are proposed because there will be no changes to existing or projected land use as a result of the Program.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

Not applicable. There are no nearby agricultural or forest lands.

9. Housing

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

There will be no housing units provided by this Program.

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

There will be no housing units eliminated by this Program.

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

There will be no housing impacts as a result of work conducted within this Program. Therefore,

measures to reduce or control housing impacts are not proposed.

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?

There are no structures proposed as part of the Program.

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

The Program will result in the removal of trees in airport operation, public spaces, local and state rights-of-way, industrial, commercial, and residential areas. Some trees to be removed may be near or on residential properties providing visual buffers or other aesthetic value. Obstruction removal and associated activities are not anticipated to alter the overall aesthetic quality of the Program Area but may have a localized impact on visual quality if a prominent or otherwise high-value tree requires removal.

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

The Program's BMPs to reduce and control aesthetic impacts on the site include:

- Design staging and access to minimize disturbance
- Avoid ground disturbance in wetlands
- Protect and/or restore vegetative buffers near streets and buildings
- Protect existing native vegetation
- Implement construction BMPs (spill prevention, erosion control, machinery leaks) to avoid environmental contamination
- Replant densely to prevent future obstructions from establishing
- Meet or exceed minimum tree replacement requirements
- Remove and control invasive threats to native plant species
- Plant native trees and understory species to increase canopy cover and habitat structure
- Plant a range of species to increase biodiversity
- Avoid tree topping

Private property owners will be able to select the replacement tree species from the species list approved by the Port and local jurisdiction (as applicable).

11. Light and glare

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

The Program does not anticipate producing light or glare.

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

Light and glare would not be produced and thus are not expected to be safety hazards or interfere with views.

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

There are no existing sources of light or glare that will affect Program activities.

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

Not applicable. This Program does not anticipate producing light or glare. If removal of trees occurs in areas that provide a visual barrier for residential areas, the Program will seek, when possible, to maintain vegetated buffer areas in addition to replanting requirements and minimize any potential impact.

12. Recreation

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

Designated King County parks within the Program Area include Crestview Park, North SeaTac Park, Highline SeaTac Botanical Garden, McMicken Heights Park, Moshier Memorial Park, Des Moines Memorial Park, Des Moines Creek Park, SeaTac Des Moines Creek Park, Sunset Playfield, Angle Lake Park, Manhattan Park & Playfield, Mathison Park, Wilson Park, Walker Creek Preserve, and Westwood Park.

The Program Area also overlaps with designated King County trails, including the Regional Lake to Sound Trail, the Des Moines Creek Trail, Westside Trail, South 156th Way Trail, and the South 200th Street Shared Use Path.

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

No, implementation of the Program will not displace any existing recreational uses. Tree removal may temporarily impact park use during removal activities, and after removal the absence of the large tree(s) would be noticeable to park users if the trees were located in a prominent location.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

For trees that must be removed in parks, the Port would coordinate closely with the city parks departments to minimize disturbances to recreational use and to select appropriate physical and/or monetary replacement measures.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

There are multiple buildings, structures, or sites located within the Program Area that are over 45 years old. A large portion of the Program Area was surveyed by Stell Environmental Enterprises, Inc. ([Stell] Brown et al. 2021). Stell documented four archaeological sites and 12 historic properties. None of the historic properties or archaeological sites were determined to be eligible for listing on the National Register for Historic Places (NRHP). The Program Area also includes privately-owned cemeteries (Hillgrove Cemetery, Washington Memorial Park). The two cemeteries are older than 45 years but not listed on the National Register of Historic Places or the state register and are not currently regulated as a local landmark.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

A portion of the Program Area was part of an analysis of archaeological potential that concluded that there is low potential for precontact or historic archaeological materials (Iverson et al. 2005). The Program Area has been heavily modified and filled, and the limited excavation for the Program will occur within the footprint of existing infrastructure. No

structures older than 45 years will be modified or demolished. Therefore, no impacts to cultural resources are expected.

- c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.**

Review of the NRHP, state register, and Washington State Department of Archaeology and Historic Preservation's databases would be conducted to confirm the presence of known recorded eligible historical or cultural resource properties prior to tree-removal activities.

- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.**

The Port would coordinate with landowners to minimize and/or mitigate any impacts to a site proposed for tree removal activity, including cemeteries. The Program does not currently anticipate acquiring any permits related to historic or cultural preservation.

14. Transportation

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.**

The Program is anticipated to require roadway access to sites for removing obstructions and replanting. The primary access routes will be on major arterials including State Route (SR) 518, SR 509, Des Moines Memorial Drive, and South 188th Street. Access routes could also be on arterials including South 24th Street, South 200th Street, South 188th Street, 8th Avenue South, and 24th Avenue South and collector streets including 18th Avenue South, South 192nd Street, South 194th Street, and South 142nd Street.

Additional roadways may be utilized as trees become identified for removal throughout implementation of the Program.

- b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?**

The Program Area includes Link light rail service at the Sea-Tac Airport Station and the Angle Lake Station. King County Metro bus transit also serves the airport and surrounding jurisdictions.

- c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

There will be no additional parking spaces created or eliminated by this Program.

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

The proposal will not require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities.

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

The Program will not require the use of water, rail, or air transportation. However, potential obstruction removal activities may be within the vicinity of SEA and Sound Transit’s Link light rail.

- f. **How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?**

There will be no additional vehicular trips generated as a result the completed Program.

Construction will result in a temporary increase in traffic volumes due to workers traveling to/from the sites and trucks removing logs and other tree components and transporting replanting materials.

- g. **Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

The Program will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

- h. **Proposed measures to reduce or control transportation impacts, if any:**

No transportation impacts are expected as a result of the Program, so no measures are proposed.

15. **Public services**

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

The Program will not require an increased need for public services.

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

There are not expected to be any direct impacts on public services.

16. **Utilities**

- a. **Circle utilities currently available at the site:** electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other: stormwater, communication.

- 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 which might be needed.**

There are no utilities planned for this Program.

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: Steve Rybolt
Name of signee: Steven Rybolt
Position /Organization Senior Environmental Program Manager, Port of Seattle
Date Submitted: November 6, 2025

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

[Find help for the nonproject actions worksheet³](#)

Do not use this section for project 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.

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?

Implementation of the Program will not increase discharge to water and will not increase the production, storage or release of toxic or hazardous substances. There would be a temporary and short term increase of emissions to air and the production of noise associated with construction-related operations during obstruction removal activities. However, these impacts are not expected to be significant.

- **Proposed measures to avoid or reduce such increases are:**

The contractor(s) implementing work under the Program will be required, per the Port's Guide Specifications, to maintain and repair all equipment in a manner that meets state regulations and reasonably minimizes emissions. Short-term noise from obstruction removal preparation activities will be mitigated by the use of BMPs and adhering to the City of SeaTac, City of Burien, and City of Des Moines noise ordinances for work within their jurisdictions. No long-term noise mitigation measures are proposed because construction and removal activities will not change existing noise levels.

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

As described in Section B.4 Plants and B.5 Animals, the Program will require vegetation removal and alteration. No effects to fish or marine life are anticipated. BMPs will be in place to minimize affects to plants and animals.

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

The Program will not deplete energy or natural resources.

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

None. The Program will not deplete energy or natural resources.

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 Program will not use or affect areas designated (or eligible or under study) for governmental protection, wilderness, wild and scenic rivers, historic or cultural sites or prime farmlands.

³ <https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/sepa-checklist-guidance/sepa-checklist-section-d-non-project-actions>

Tree removal may affect environmentally sensitive areas (critical areas), parks, wetlands, and floodplains.

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

The best management practices to protect such resources, and avoid or reduce impacts are listed in Section

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 Program will not affect land and shoreline use or allow or encourage land and shoreline uses incompatible with existing plans.

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

None. No shoreline or land use impacts are anticipated.

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

Implementation of the Program is unlikely to cause an increase in demand on transportation or public services.

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

None. No demands are anticipated.

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

The Program is not expected to conflict with local, state, or federal laws or requirements for the protection of the environment. As stated above, replanted trees on Port property will adhere to SEA Landscape Design Standards to support safe airport operations. Replacements in other locations will follow the requirements of each jurisdiction. Replanted trees on private properties within the adjacent municipalities will be selected by property owners using tree species approved by the Port and local jurisdiction (as applicable).

REFERENCES

- Brown, James W., Johnson, Michael A., Steinkraus, Sarah M.H., 2021. *Cultural Resources Survey of the Seattle-Tacoma International Airport Sustainable Airport Master Plan (SAMP) Near-Term Project, King County*. On file at the Department of Archaeology and Historic Preservation, Olympia, Washington.
- Ecology (Washington State Department of Ecology), 2024. *Stormwater Management Manual for Western Washington*. Washington State Department of Ecology, Water Quality Program. Publication Number 24-10-013, July 2024. .
- Iverson, David, Leonard A. Forsman, Dennis E. Lewarch, and Lynn L. Larson, 2005. *Port of Seattle, Seattle-Tacoma International Airport Master Plan, Proposed third Runway Archaeological Resources and Traditional Cultural Places Assessment*. On file at the Department of Archaeology and Historic Preservation, Olympia, Washington.
- USFWS (U.S. Department of Fish and Wildlife Service) 2025. IPaC Resource Report. Generated for Program Area. July 2025. <https://ipac.ecosphere.fws.gov/>

ATTACHMENT A

**Greenhouse Gas Emissions Worksheet Supplemental
Information for SEPA Environmental Checklist**

GHG Emission Sources (CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆) ¹	What sources are likely from the proposal? <i>List specific type of activities and duration of emissions</i>	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	Not applicable	Not applicable	
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	Limited temporary impacts to vegetated areas where excavation and backfill will occur.	Removal of existing trees will cause a temporary release of sequestered carbon, but this carbon is anticipated to be replaced by re-planting. Therefore, a lifecycle net reduction in carbon emissions is expected from this project.	After the removal of obstructions, trees will be replanted according to the standards and requirements in place at the time and according to jurisdiction.
Purchased Electricity and Steam	Not applicable	Not applicable	
Construction	Construction vehicles and equipment during obstruction removal preparation activities.	Temporary and short-term use associated with construction-related emissions during obstruction removal preparation activities are not expected to be significant.	Contractor performing obstruction removal preparation activities will be required to maintain and repair all equipment in a manner that reasonably minimizes emissions.
Extraction of Purchased Materials	Not applicable	Not applicable	
Processing of Purchased Materials	Not applicable	Not applicable	
Transportation of Purchased Materials	Not applicable	Not applicable	

GHG Emission Sources (CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆) ¹	What sources are likely from the proposal? <i>List specific type of activities and duration of emissions</i>	What is the quantitative or qualitative assessment of those emissions?	What available mitigation will avoid or reduce those emissions?
New Facility Operations	Not applicable	Not applicable	
Other Mobile Emissions	Not applicable	Not applicable	
Water Use and Wastewater Disposal	Not applicable	Not applicable	
Waste Management	Not applicable	Not applicable	
Product Use – New Pavement	Not applicable	Not applicable	

**Calculated via City of Seattle Department of Planning and Development SEPA GHG Emissions Worksheet.*

CH ₄	Methane	Landfills, production and distribution of natural gas and petroleum, fermentation from the digestive system of livestock, rice cultivation, fossil fuel combustion, etc.
N ₂ O	Nitrous Oxide	Fossil fuel combustion, fertilizers, nylon production, manure, etc.
HFCs	Hydrofluorocarbons	Refrigeration gases, aluminum smelting, semiconductor manufacturing, etc.
PFCs	Perfluorocarbons	Aluminum production, semiconductor industry, etc.
SF ₆	Sulfur Hexafluoride	Electrical transmissions and distribution systems, circuit breakers, magnesium production, etc.

ATTACHMENT B

**Flight Corridor Management Program
Program Description**



August 2025
Flight Corridor Management Program

Flight Corridor Management Program



Port of Seattle
P.O. Box 68727
Seattle, Washington 98168

August 2025
Flight Corridor Management Program

Flight Corridor Management Program

Port of Seattle
P.O. Box 68727
Seattle, WA 98168

TABLE OF CONTENTS

1	Program Background.....	0
1.1	Overview.....	0
1.2	Purpose.....	1
1.3	Categories of Obstructions.....	2
1.3.1	Current Obstructions.....	2
1.3.2	Incidental Trees.....	2
1.3.3	Future Obstructions in Critical Areas.....	2
1.3.4	Obstructions to Navigational Aid (NAVAID) Equipment.....	3
1.4	Part 77 Flight Surfaces.....	3
1.4.1	Obstacle Free Zones.....	3
1.4.2	Final and Missed Approach Surfaces.....	3
2	Identification of Obstructions.....	5
2.1	Aerial Data Collection and Analysis.....	5
2.1.1	Aerial Imagery Collection.....	5
2.1.2	Photogrammetry.....	6
2.1.3	Flight Surface Modeling.....	6
2.1.4	Point Data Analysis.....	7
2.2	Field Data Collection and Tree Inventory.....	8
2.2.1	Field Verification and Tree Tagging.....	8
2.2.2	Re-Planting Area Data Collection.....	8
2.2.3	Geospatial Analysis.....	9
3	Planning, Coordination, and Public Notification.....	10
3.1	Property Owner Coordination.....	10
3.1.1	Public Property.....	10
3.1.2	Private Property.....	10
3.2	Implementation Plan.....	10
3.2.1	Plan Contents.....	10
3.2.2	Tree Replacement Calculations.....	11
3.3	Regulatory Memo.....	12
3.4	Public Notification.....	13
4	Tree Removal.....	14
4.1	Timing.....	14

4.2	Site Preparation	14
4.2.1	Site Visit.....	14
4.2.2	Establishing Site Access	15
4.2.3	Erosion and Sediment Control	15
4.3	Tree Removal and Material Disposal	16
4.3.1	Tree Removal Methods	16
4.3.2	Material Disposal Options.....	18
5	Tree Replacement, Revegetation, and Monitoring	20
5.1	Timing	20
5.2	Site Preparation	20
5.3	Planting	20
5.4	Monitoring	21
5.5	Performance Monitoring	22
5.6	Revegetation As Needed	22
6	Relevant Regulations	23
6.1.1	Federal	23
6.1.2	State.....	24
6.1.3	Local.....	26
7	References	29

ACRONYM LIST

AAA	Airport Activity Area
BMC	Burien Municipal Code
BMP	best management practice
CFR	Code of Federal Regulations
DBH	diameter at breast height
DMMC	Des Moines Municipal Code
FAA	Federal Aviation Administration
GIS	Geographic Information System
IFR	instrument flight rules
ILA	Interlocal Agreement
ILS	Instrument Landing System
NAVAID	Navigational Aid
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
OPUS	Online Positioning User Service, National Geodetic Survey
RCW	Revised Code of Washington
SEA	Seattle-Tacoma International Airport
SMC	SeaTac Municipal Code
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TERPS	Terminal Instrument Procedures
WSDOT	Washington State Department of Transportation

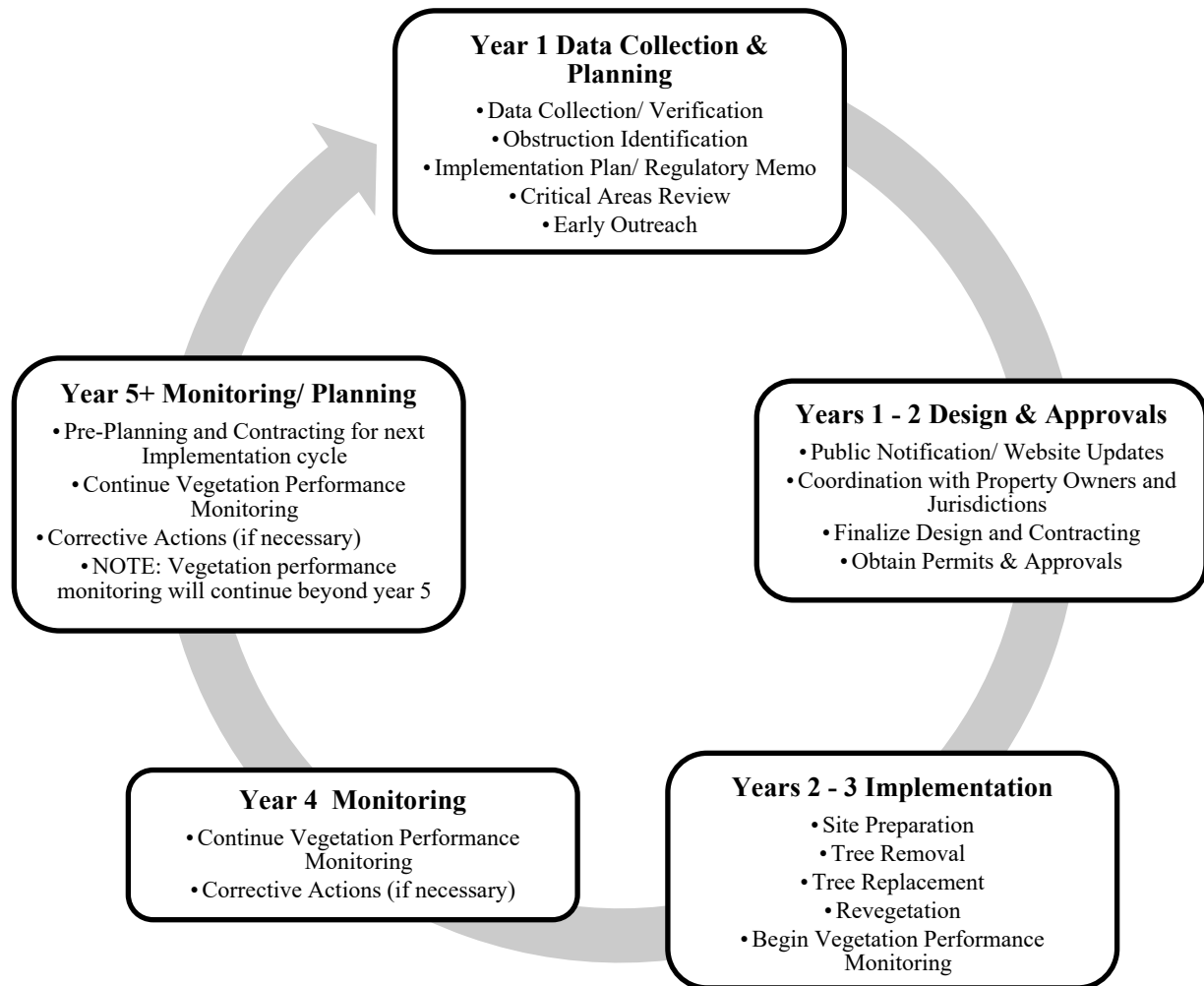
1 Program Background

The Port of Seattle (Port) routinely implements a Flight Corridor Management Program (Program) to maintain arrival and departure flight paths Seattle-Tacoma International Airport (SEA). SEA has three parallel runways, all with instrument-guided, very precise flight procedures to ensure arrivals and departures use airfield facilities as published. The SEA flight corridor is made up of flight surfaces: a set of imaginary surfaces that define a volume of airspace horizontally and vertically from the intended flight path. The Federal Aviation Administration (FAA) sets rules and regulations for the flight corridor, ensuring that potential obstructions including buildings, towers, trees, and even drones stay clear of the flight corridor to avoid any potential hazards. The Port first instituted a comprehensive Flight Corridor Management Program in 2014, while having previously conducted several obstruction removal projects over the preceding years. All of the flight surface obstructions that have been identified over the past decade are trees that grew tall enough to penetrate a flight surface and required removal. These trees were located on Port-owned properties; public properties (owned by the Washington State Department of Transportation [WSDOT], Highline School District and the cities of SeaTac, Burien and Des Moines; and commercial and private lands in the cities of Burien, SeaTac, and Des Moines.

As SEA continues to carry out the Program and replanted trees are intentionally selected to avoid tall species that could pose future obstruction risks, the number of trees requiring removal is projected to decline over time. The Port first instituted a comprehensive Flight Corridor Management Program in 2014, including required tree replacement and habitat restoration while having previously conducted several obstruction removal projects over the preceding years. In the Program's first year of implementation, 1,167 trees were removed. During the 2019 cycle, that number dropped significantly to 174. In the most recent 2024 data collection effort, approximately 220 trees have been identified for removal.

1.1 Overview

The Program follows a sequence of steps, implemented on a regular basis (approximately every 5 years), to ensure obstructions (trees) are identified and removed, and includes ongoing site management and monitoring to support healthy ecological communities. Local jurisdictions determine the tree removal and replacement requirements for activities on public property. Affected jurisdictions may include the Port, WSDOT, Highline School District, and the cities of SeaTac, Burien and Des Moines. Removals may also occur on commercial and private lands in coordination with the landowners. The Port will coordinate directly with commercial and private property owners and affected jurisdictions. A summary of the Program steps is provided below and shown below.



1.2 Purpose

The Port is required to follow conditions of Title 49 of the United States Code (49 U.S.C.) Subtitle VII and Title 14 of the Code of Federal Regulations (14 CFR 139), as stipulated in SEA's Airport Operating Certificate issued by the FAA. These require the Port to ensure there are no obstacles or obstructions on or around SEA that could affect the flight corridor. Hazardous obstructions to air navigation are defined by the FAA as features that:

"affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities" (14 CFR Part 77).

In addition, state law expressly identifies "airport hazards" as any obstructions that:

"in effect reduce the size of the area available for the landing, taking-off, and maneuvering of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein" (Revised Code of Washington [RCW] 14.12.020).

This provision also declares that the creation or establishment of airport hazards is a "public nuisance." "RCW 14.08.030(4) further provides that it is unlawful for anyone to 'permit to grow higher any tree or trees or other vegetation, which shall encroach upon any airport protection privileges.'

To meet these requirements, the Program is implemented to maintain the approach and departure airspace (or the flight corridor, made up of flight surfaces) at SEA. The Program primarily concerns flight surfaces that are defined for airplanes operating under instrument flight rules (IFR). This Program is necessary to identify and remove obstructions to the flight corridor, understood to be trees. Maintenance of SEA flight corridors is a priority for the Port of Seattle, the state of Washington, and the FAA.

1.3 Categories of Obstructions

Obstructions are obstacles within a protected surface, usually trees. For the purposes of this Program, an obstruction is a tree. Trees change and grow over time, necessitating that the Program consider both current and future tree heights. In addition, trees are often surrounded by other trees and vegetation, resulting in the incidental take of trees and vegetation during tree clearing activities. Consequently, the Program has defined the following categories of obstructions.

1.3.1 *Current Obstructions*

Current obstructions are trees that currently obstruct a flight surface (see Section 1.4) as identified through data collection and verification. Current obstructions also include trees that are anticipated to penetrate a flight surface within the next 5 years before the next implementation cycle. Current obstructions are the primary category of trees that would require removal under the Program.

1.3.2 *Incidental Trees*

Incidental trees are those which must be removed to allow access to current obstructions. The number of incidental trees is first estimated in the Implementation Plan and further refined during the design stage as construction access and staging needs are defined.

1.3.3 *Future Obstructions in Critical Areas*

Critical areas such as wetland and buffers provide unique ecological functions that are sensitive to disturbance. To avoid repeatedly disturbing these functions, SEA may proactively remove trees in these areas with a high potential to become an obstruction in the future.

1.3.4 Obstructions to Navigational Aid (NAVAID) Equipment

Trees may interfere with the visibility and/or operation of NAVAIDs at SEA. NAVAIDs include the six runway light bridges and associated approach lights, as well as other equipment installations. The FAA has the statutory authority to establish, operate, and maintain these NAVAIDs. The FAA may remove these obstructing trees at any time or may require the Port remove these trees. Historically, the FAA has conducted these removals without involving the Port.

1.4 Part 77 Flight Surfaces

Under 14 CFR Part 77, the FAA has established a series of imaginary surfaces to define navigable airspace surrounding public-use airports. These surfaces are used to identify potential obstructions and assess the impact of proposed structures on safe aircraft operations. Like every regulated airport, the SEA flight corridor is made up of these imaginary flight surfaces which define a volume of airspace horizontally and vertically from intended flight paths. Multiple three-dimensional spatial surfaces are analyzed in the Program, as each surface indicates the safe limits for airplanes under specific operating conditions (HNTB 2024). For all three runways at SEA, each of the surfaces described below is analyzed for potential obstructions.

1.4.1 Obstacle Free Zones

This is an area around the runway that must be clear of obstacles to ensure safe landing and takeoff. This zone includes the following:

1. Precision Obstacle Free Zone: This zone is specifically for runways used for precision instrument approaches. It needs to be clear of obstacles to allow precise landings during bad weather.
2. Inner-Approach Obstacle Free Zone: This is a protected area near the beginning of the runway. It ensures that the path is clear when an airplane is on its final approach to land.
3. Inner-Transitional Obstacle Free Zone: This zone extends outwards from the sides of the runway. It ensures that the space around the runway is clear of obstacles that might interfere with the aircraft's takeoff and landing paths.

1.4.2 Final and Missed Approach Surfaces

1. Final Approach Surface: This is the path an airplane follows when it is on its final approach to land. It needs to be clear of obstacles to ensure a safe landing.
2. Missed Approach Surface: If an airplane cannot land for some reason (like poor visibility or an obstruction on the runway), it will follow this missed approach surface to go around and try again. This area needs to be clear to ensure the airplane can safely climb back up.

1.4.2.1 Departure Surfaces

1. TERPS Departure Surface: TERPS stands for Terminal Instrument Procedures. This surface is the designated path an airplane follows after takeoff. It needs to be clear of obstacles to ensure a safe climb.
2. Advisory Circular Surface: These are additional guidelines provided by the FAA to ensure safe takeoff and departure. This surface needs to be clear of obstacles to ensure the safe departure of the aircraft.

1.4.2.2 20:1 and 34:1 Visual Approach Surface

1. 20:1 Visual Approach Surface: This surface has a slope of 20 feet horizontal for every 1 foot vertical. It is used for visual approaches where pilots rely on sight rather than instruments.
2. 34:1 Visual Approach Surface: This surface has a slope of 34 feet horizontal for every 1 foot vertical. It is also used for visual approaches, ensuring a clear path for the aircraft.

1.4.2.3 Vertical Guidance Surface

1. This is a surface used for approaches where vertical guidance is provided to the pilots. It ensures a clear path for the aircraft to descend safely during landing.

2 Identification of Obstructions

The methods to collect data and identify obstructions requiring removal has been established over multiple Program implementation cycles and is described below. The identification process begins with aerial data collection and database development, which is then supplemented and verified by on-the-ground field work. The data collection and field work are used to develop a final list of obstructions, referred to as a final tree inventory.

2.1 Aerial Data Collection and Analysis

Aerial photogrammetry is an FAA-approved method of conducting data collection to identify obstructions. Data must meet the accuracy requirements for the “Obstacle” feature-type, as provided in the FAA’s Advisory Circular AC-150/5300-18B, *General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards*. Multiple steps of data collection and analysis are required:

1. Digital aerial photographic data are collected.
2. Through photogrammetry, these data are geo-referenced and further composited into a three-dimensional photographic blanket, which is subsequently analyzed for objects that potentially occur as obstructions to flight safety through comparison to three-dimensional flight surfaces.
3. Obstructions are further analyzed to determine if they require removal.
4. To assist in removals of obstacles, the type, quantity, and locations of obstructions are attributed with land use and ground information, which is identified through the use of available geospatial data.

2.1.1 Aerial Imagery Collection

Digital three-dimensional aerial imagery is collected under clear weather conditions with good visibility to capture the area surrounding SEA. Pre-planned transects or flight lines are flown to provide comprehensive photographic coverage. Photographs are taken with 60 percent overlap between successive images and 30 percent overlap between adjacent images.

To accurately geo-reference the aerial imagery and build the three-dimensional model, ground control points—either photograph-identifiable locations or painted targets—are selected and surveyed. Each point is photographed and measured with high accuracy to record northing, easting, and elevation values. A portion of the selected ground control points are OPUS (Online Positioning User Service) control points, which tie the collected data to the high-accuracy National Spatial Reference System. This step provides a quality assurance check on the integrity of the geo-referencing process prior to data extraction.

This data collection effort results in thousands of geo-referenceable three-dimensional digital images of the area—including hills, buildings, antennae, cranes, tree canopies, individual trees, and clusters of trees.

2.1.2 Photogrammetry

Photogrammetry is the technology and science of extracting three-dimensional information from photographs. Using the acquired aerial digital imagery, a three-dimensional aerial image can be created by digitally overlapping adjacent photographs. The raw aerial photographs often have distortions due to camera angle, terrain elevation, and other factors. For example, buildings may appear tilted, and distances may not be true to scale. This can make the imagery unreliable for measurements or mapping. The imagery is processed to include aero-triangulation and ortho-rectification to create a highly accurate three-dimensional model. Aero-triangulation is done utilizing ground control survey information to determine the exact position and angle of each image, ortho-rectification uses that information to adjust the photos. It transforms them so that:

- Each feature appears as though viewed straight from above
- Shapes, sizes, and distances are accurate
- The image aligns correctly with maps and coordinates
- The result is a geometrically accurate, scaled image

Using GIS and other digital tools, the refined aerial photography data is analyzed to identify potential obstructions. Each unique potential obstruction point identified is assigned an Obstacle Identification Number. The GIS data is exported to a spreadsheet containing the Obstacle Identification Number (referred to as point data) and other relevant three-dimensional geospatial information along with noted other general observations. This spreadsheet output contains a collection of initial point data identifying high locations, loosely called “obstacles,” to be further analyzed.

2.1.3 Flight Surface Modeling

Following creation of the “raw” obstacle database, the flight surfaces are modeled to overlay and with potential obstructions in two steps:

1. Creation of modeled flight surfaces
2. Subsequent intersectional analysis of raw obstacle data with modeled flight surfaces.

Every flight procedure (approach/departure/enroute) has a set of imaginary surfaces that define a volume of airspace horizontally and vertically from the intended flight path (see Section 1.3). The regulations that define the surfaces analyzed for the Program are listed in the following:

- FAA Advisory [150/5300-13B](#) – *Airport Design* (issued 2022-03-31).

- FAA Order 8260.3F – *United States Standard for Terminal Instrument Procedures* (referred to as “TERPS”; Issued 2023-09-07).

Using the definitions published in the documents and applicable information relevant to SEA, three-dimensional, coordinately correct models of each of the imaginary flight surfaces is developed in AutoCAD (Civil 3-D, 2022, Autodesk). All three runways are modeled to provide three-dimensional spatial surfaces indicating the limits for air traffic positioning under specific operating conditions.

Following initial surface modeling, a quality review is systematically performed to ensure the surfaces meet the specified criteria, including accuracy and adherence to requirements. The review includes evaluation of scale and dimensions to determine if the modeled surface faithfully meet the intended surface. Modeled surfaces are adjusted as needed based on this review.

2.1.4 Point Data Analysis

The point data are then compared against the height of each flight surface. The result of this analysis is a listing of each point, the surfaces over that point, and the amount by which that point exceeds or is clear of the surface. Since numerous flight procedures are analyzed for each runway, multiple surfaces exist over any given point.

The CAD files are imported into ArcGIS and logical queries are developed to determine if any identified raw obstructions meet the following conditions:

- Penetrated an existing surface, or
- Were within 15 vertical feet of penetrating an existing surface, or
- Penetrated more than a single modeled surface

To evaluate each potential obstruction, the height of the obstacle above mean sea level is compared to the height of the surface feature. Any point value greater than 0.001 foot higher than the surface is considered as a potential obstacle. An additional evaluation is performed to evaluate trees with heights that could become an obstruction within 5 years, assuming a 3-foot-per-year height addition (15 feet total). Height values on raw data are therefore increased by 15 feet. This produces a second dataset identifying potential penetrations of surfaces over the next five years.

Quality analysis is conducted on point data to evaluate several key dimensions: attribute accuracy, logical consistency, completeness, positional accuracy, and data source lineage.

- Attribute accuracy refers to the precision with which attributes are assigned to point data. This includes both qualitative (e.g., text or categorical values) and quantitative (e.g., numerical values) data.

- Logical consistency assesses the integrity of relationships within the dataset. It ensures the data adheres to expected rules and structures, identifying issues such as missing areas, duplicate entries, or other inconsistencies that may result in invalid values.

2.2 Field Data Collection and Tree Inventory

After the data collection and modeling described above, an identified “obstruction” is not necessarily an individual tree, since multiple trees are often indicated by a single obstruction point. A field verification step and additional data analysis are conducted to create the final tree inventory and GIS database.

2.2.1 *Field Verification and Tree Tagging*

A field verification effort confirms the number of trees, documents site conditions (e.g. critical areas), and determines incidental clearing required for access. Field verification involves visiting each of the mapped obstruction points and assigning attributes to individual trees. During an initial visual verification, the location, number, and species of trees per point is collected and the data is entered into GIS along with a tree identification (ID) number, creating a GIS field map. Once all rights-of-entry are secured, then a certified arborist collects tree characteristics and risk data, physical tree tags are added (marked in multiple places on the trunk), and the incidental clearing requirements are assessed. This process is an important step to finalize the inventory and as a due diligence to make sure that only the intended trees are removed.

2.2.2 *Re-Planting Area Data Collection*

Once the analysis determines the number of trees requiring removal, potential replanting sites on Port property are evaluated for suitability. To identify appropriate locations for replacement trees and associated ecological functions, field efforts include:

- Documenting the location, extent, and conditions of potential planting areas
- Flagging boundaries of invasive plant species
- Tagging and identifying existing trees with a diameter greater than 6 inches diameter at breast height (DBH)
- Mapping invasive species distribution.

To perform these tasks, the field team employs a transect survey method and uses a GIS field map to record vegetation data. Trees over 6-inch DBH are marked with flagging tape and logged as point features in the GIS database, along with species ID, DBH, and photographs. All other vegetation is cataloged as polygon features, with species ID, percent cover, and whether the species is invasive. This data is considered during the design stage to select suitable replanting areas.

2.2.3 *Geospatial Analysis*

Once the database of penetrating obstructions is created, each point is reviewed to determine how to manage obstructions effectively within their specific land use context. An obstruction attribution analysis is based on available geospatial data on existing ground conditions, including:

- Property boundaries
- Wetlands
- Streams
- Critical areas and buffers
- Port and city jurisdictions
- Land use
- Rights-of-way maps (WSDOT).

In GIS, a potential obstruction is considered a point without a specified area on the ground. Therefore, each obstruction point is assigned a 10-foot radius to capture attributed ground conditions. The analysis answers questions regarding land ownership, local jurisdiction, site conditions, and land use at each obstruction point and the answers became assigned attributes for each obstruction.

Following identification of obstructions, the obstruction attribute dataset is exported to a spreadsheet or database and ArcGIS dataset (2024 ESRI) to become part of the geodatabase and used for display and attribution. Some initial attributes for each obstruction are provided in the obstruction dataset determined during data refinement. These include tree type (deciduous or conifer) and general locations of dense trees in the study area.

Quality control of the GIS spatial analysis is performed to validate the quality, objectivity, utility, and integrity of the analysis data. The quality review combines automated and human-guided checks of attribute consistency, geometric integrity, and spatial relationships. The human-guided review identifies missing, misplaced, or miscoded information that could be overlooked by the integrated tools. This includes evaluation of consistency, validity of data type, and general accuracy. Data quality information includes attribute accuracy, logical consistency, completeness, positional accuracy, and data source (lineage). An evaluation of the fidelity of the relationships in the datasets is performed through logical consistency to ensure there are no issues. Once the obstructions have been identified, the datasets are combined into a single database, or tree inventory, and assigned the following priorities:

- 1a for penetration of one existing surface,
- 1b for penetrations within 5 years, and
- 1c for penetrations of two surfaces.

3 Planning, Coordination, and Public Notification

Once the tree inventory has been finalized, the Port will continue direct coordination with property owners, develop the Implementation Plan and Regulatory Memo, and begin design drawings. The tree inventory, Implementation Plan and Regulatory Memo are made publicly available on the Port's website.

3.1 Property Owner Coordination

Close coordination and collaborative negotiation with affected property owners and jurisdictions is an important step to successfully remove trees. There is flexibility for private property owners and jurisdictions to determine access and choose the type of tree replacement, including direct replacement or receiving in-lieu fees. Section 4 and Section 5 provide additional details on site preparation, including access, removal methods, and replanting.

3.1.1 *Public Property*

Public properties that may have obstructions include state-, city-, and school district-owned lots, parks and recreational areas, and local or WSDOT rights-of-way. The Port will meet with affected public entities during the planning stage to coordinate access and confirm regulatory requirements for site access, including the need to obtain right-of-way permits.

3.1.2 *Private Property*

The Port will coordinate with affected property owners during the planning stage to communicate the need to remove trees, secure site access, coordinate removals, and provide appropriate compensation and/or replacement. The goal is to minimize disruptions and other impacts to the private owner to the greatest extent possible, while successfully removing trees.

3.2 Implementation Plan

Once the final tree inventory is completed for the implementation cycle and property owner coordination has commenced, an Implementation Plan can be developed. The Implementation Plan is used as a basis of design and to inform the public. The Implementation Plan is based on collected data, field visits, coordination with affected property owners and jurisdictions, and the relevant tree replacement standards for each location.

3.2.1 *Plan Contents*

For each affected jurisdiction the Implementation Plan describes the following:

- Number and mapped location of trees to be removed
- Access and construction staging requirements

- Site condition review (e.g. critical areas)
- Site preparation methods
- Tree removal and material disposal methods
- Site treatment requirements
- Tree replacement calculations and methods
- Schedule for tree removal and replacement.

3.2.2 *Tree Replacement Calculations*

Tree replacement calculations and methods are subject to regulatory requirements which vary depending on the location where a tree is removed. For each implementation cycle, the current tree replacement standards would apply and may include direct replacement, functional replacement, or in-lieu fees. The Implementation Plan and Regulatory Memo will reflect the current standards applicable to each implementation cycle at the time of preparation. For reference, the current (2025) standards for tree replacement by jurisdiction are described below.

3.2.2.1 Port Airport Activity Area (AAA)

The Port has a defined area called the Airport Activity Area (AAA) per an Interlocal Agreement between the Port and City of SeaTac. Requirements differ depending on whether the Port-owned property is located within the AAA or outside the AAA, as discussed further below. The Port will follow its latest Land Stewardship Plan and Tree Replacement Standards to compensate for obstruction removal within AAA. As of March 2024, the Commission has adopted a functional 4:1 tree replacement standard (Port of Seattle, 2024). The Port's current Tree Replacement Requirements within the AAA require that trees removed (debits) are offset by tree stewardship actions (credits). Four credits are required to offset one debit. The requirements identify potential credits for the following tree stewardship actions:

- Tree Planting (1 credit): Planting one tree in an on-site or off-site location. At least 50 percent of the credits for tree removal must be tree planting
- Tree Protection (1 credit) = Removing 200 square feet of invasive vegetation from an off-site location and replanting the area with native vegetation
- Tree Protection (1 credit) = Retaining one high-value tree in an on-site location through project design and construction methods or protecting one high-value tree in an off-site location through invasive removal (for example, removing English ivy from a high-value tree)

The requirements also prioritize the on-site stewardship actions prior to tree planting and tree retention before proposing off-site stewardship actions. Future obstruction removal within the AAA would comply with this or any applicable future standard adopted by the Port Commission as appropriate.

For trees removed from Port-owned property outside the boundaries of the AAA, the Port will comply with the latest replacement standards set forth by the jurisdiction with authority as described below.

3.2.2.2 Other Jurisdictions

Table 1 described the current tree replacement standards by jurisdiction. WSDOT has established specific ratios for tree removal and replacement on their properties and easements. The cities of Burien and Des Moines also have tree replacement codes relevant to the Program. As of August 2025, the City of SeaTac does not have applicable tree replacement requirements as their standards are only applicable to land development. However, if the City of SeaTac adopts applicable tree replacement standards by the time of tree removal, those standards would be followed. Tree removal on Highline School District property would follow the replacement standards for the jurisdiction of the school(s) location.

Table 1
Summary of Off-Port Property Current Tree Replacement Standards

Property Jurisdiction (on which tree(s) will be removed)	Source of Tree Replacement Ratio	Applicable Replacement Ratio	Location of Tree Replacement
WSDOT	<i>Roadside Policy Manual</i>	Based on tree diameter (i.e., DBH) ¹	WSDOT right-of-way ²
City of SeaTac ³	SeaTac Municipal Code	N/A	N/A
City of Burien	Burien Municipal Code	3:1	Within city limits or city right-of-way ⁴
City of Des Moines	Des Moines Municipal Code	3:1	Within city limits or city right-of-way ⁴

Notes:

1. *Roadside Policy Manual*, Section 2 (WSDOT 2022). Note that WSDOT agreed through some real estate transactional documents to conduct tree replacement on certain parcels of land acquired from the Port. DBH: diameter at breast height.
2. Specific locations of tree replacements to be determined through use of WSDOT's *Roadside Policy Manual* and coordination with WSDOT.
3. The SMC does not currently provide tree replacement requirements outside of development standards, which are not applicable to the Program. Any new standards in place relevant to the Program at the time of tree removal will be adhered to.
4. The Port will coordinate with private property owners and municipalities regarding preferred replanting location.

3.3 Regulatory Memo

Since regulations are continuously evolving, the regulatory requirements must be identified for each obstruction removal cycle under the Program. The regulations applicable to tree removal and replacement may be federal, state, and local regulations along with Port policies and standards. The current regulatory environment is described in Section 7.

An updated Regulatory Memo will be prepared to guide compliance for that implementation cycle. The Port then reviews the regulatory requirements with each affected agency to confirm applicability, compliance details, and documentation requirements. A final Regulatory Memo is prepared following agency input and coordination.

3.4 Public Notification

Once the Implementation Plan and Regulatory Memo are finalized, the Port will announce that implementation cycle details are available on the Program website. The Port will share instructions on accessing the website through multiple channels including emails to subscribers, newsletters, and presentations at public forums such as the Highline Forum and StART.

The Program website will serve as a centralized, transparent resource for the public to understand and engage with the Port on planned removals. The Program website will include:

- A clear overview of the implementation cycle timeline and process
- Interactive maps showing planned tree removal locations
- Details on environmental commitments and best management practices
- SEPA compliance information with direct links to relevant documentation
- Language assistance options and a way to contact the Program team
- Full access to the finalized Implementation Plan and Regulatory Memo

Public notification will occur several months before any tree is removed to provide the public time to review the documentation. After the public is notified, the Port will proceed with completing a 100 percent design package, obtain required permits and approvals, including Commission authorization to proceed, and engage contractors.

4 Tree Removal

4.1 Timing

Site preparation and tree removal will occur after permits and approvals are obtained, coordination with public agencies and affected private property owners is complete, and the public has been notified. Before any work commences, the Port will develop a detailed sequencing plan for tree removal.

4.2 Site Preparation

Tree removal preparation activities include verifying and inspecting site conditions, and could include identifying and installing access barriers, access routes, and staging areas; identifying and installing erosion and sediment control measures; and salvaging vegetation. For trees located outside Port jurisdiction, the relevant clearing standards in place at the time of implementation will apply.

4.2.1 *Site Visit*

Before any work commences, site visits will be held with both the contractor and Port staff in order for the contractor to verify the following:

- Hazardous features: Permanent features should be marked or flagged to protect site personnel and biological hazards (e.g., unsanitary conditions, discarded syringes) should be identified and removed.
- Access issues: Traffic control measures may be required for tree removal along busy or congested public rights-of-way.
- Utilities in need of protection: Stormwater and electrical utilities, including large stormwater ponds, will likely be the main utilities that will require protection. However, any areas that will require excavation for tree removal will also require a utility location and verification through the Utility Notification Center (Call Before You Dig).
- Existing facilities in need of protection: These features could include SEA features such as the Airport Operation Area perimeter fence, the Port's west side office, or supports for runway approach lighting systems with flashing lights. Existing facilities on private sites include structures, grounds, and landscaping outside of the tree removal area. Additional steel plates or mats and barricades will likely be required to safely remove trees on private sites without impacting existing structures.
- Critical areas in need of protection: These features could include steep slopes, wetlands, streams, and their buffers. In addition, topographic swales and ditches that could direct additional stormwater or sediment-laden runoff to these critical areas, and areas of potential erosion, should also be identified.

4.2.2 *Establishing Site Access*

Access barriers are necessary to control the removal area from trespass or unintentional entrance by unauthorized personnel during construction activities. While most Port sites have adequate access control from existing fencing, publicly accessible sites may need to be barricaded. Temporary chain-link fencing, with lockable gates along the construction equipment access route(s), can provide a suitable barrier. Small public or private sites, or those along roadways, may require additional signs, barricades, or qualified flaggers to ensure the public is protected from hazards associated with tree removal.

Access and exit points should be limited to one route, if possible. The route should be a truck or equipment driveway and should be stabilized to avoid tracking sediment on adjacent roadways. Stabilization can include placing a minimum 12-inch layer of 4- to 8-inch-sized quarry spalls over geotextile fabric, for a length of 25 feet and width of at least 15 feet. Longer access routes into a site may be required depending on the substrate/groundwater site characteristics and the size and weight of equipment used; pads of quarry spalls and geotextile can also be used for this application.

4.2.2.1 Native Plant Salvage

Through community service events, or partnering with native plant organizations, the Port may salvage native shrub and groundcover plant materials within the tree removal area for reuse. Plant materials should be carefully stockpiled for later relocation, exercising care when moving the plant materials to avoid breaking branches or roots. Salvaged vegetation may be used within cleared areas during the site treatment step in the process. This vegetation may also be used on other Port properties or provided for restoration work by other agencies (e.g., King County, EarthCorp).

4.2.3 *Erosion and Sediment Control*

A construction stormwater pollution prevention plan and erosion and sediment control measures are required to control the quantity and quality of stormwater that may pass through the tree removal sites. SEA's Individual National Pollutant Discharge Elimination System (NPDES) permit includes erosion and sediment control measures for ground-disturbing work on Port property. A separate Construction Stormwater General Permit would be required for non-Port property areas (e.g., WSDOT right-of-way) where clearing and grading will exceed 1 acre. Tree removal efforts on Port Property would be required to meet the 13 BMP elements described in the Port's Programmatic Construction Stormwater Pollution Prevention Plan (SWPPP): NPDES Permit WA0024651. For locations off Port property, a separate SWPPP may be required. More detail on the BMPs identified here is available through the *Stormwater Management Manual for Western Washington* (Ecology 2024).

4.3 Tree Removal and Material Disposal

4.3.1 Tree Removal Methods

Tree removal methods and equipment vary depending on site characteristics, the distribution and characteristics of trees on a site, and the type of disposal method or sale of the cleared material. The range of tree removal and clearing methods, and their suitability, are summarized in Table 2, followed by a more detailed discussion.

Table 2
Summary of Tree Removal Methods

Method Description	Suitability
Tree Removal (excludes stump grubbing)	
Fell, limb, and buck trees using mechanical means and/or chain saws (manual) as needed. Remove invasive species, and retain, as practical, the remaining understory.	Suitable for areas with dense tree groupings where adjacent areas are not congested or major traffic corridors, and where full stump removal (grubbing) is not required
Selective Clearing and Tree Removal (manual work)	
Fell, limb, and buck trees using chain saws. Remove invasive species but retain remaining understory.	Suitable within or near critical areas, and/or where isolated trees occur, particularly on congested sites
Retain Stumps	
Follow tree removal or selective removal of trees, which leaves a 1- to 2-foot stump above the ground surface. To inhibit resprouting, stumps can be treated using broad-spectrum glyphosate or fungus (mycelia) tablets that encourage fungus to eat away at the remaining structure.	Suitable where isolated or small groupings of trees occur, and retaining stumps is used to protect critical areas like steep slopes or wetlands
Remove Stumps	
Cut or grind and mulch stumps, and the associated root mass below the ground level, using a stumper or stump grinder attachment. Another option is to use a grubbing blade mounted on the front of a carrier vehicle or cut a tree part-way down and push it over (clearing and grubbing operation).	Suitable on areas outside of critical areas

Tree removal could take the form of selectively removing trees with a chain saw or using mechanical means. Manual removal involves felling, limbing, and bucking trees using chain saws. A tree removal area that is congested or contains many existing facilities or grounds to be preserved, or is inaccessible to large equipment, will require manual methods of removal.

Mechanical felling has worker safety, productivity, and efficiency benefits compared to manual removal; however, this method is infeasible for certain sites where equipment cannot fit, or where

equipment would damage existing facilities or impact critical areas. Common equipment used for large mechanical felling operations includes the following:

- Feller buncher, which has motorized vehicle base (tracked or wheeled) with a head that can cut and gather several trees at once; the most common tracked feller bunchers in the western United States are 12 feet wide, with excavator bases and swing booms with a 25-foot reach (USDA 2011)
- Delimber, which is used to remove branches from felled trees
- Harvester, which consolidates felling, delimbing, and bucking (cutting tree into appropriate lengths) into one machine
- Skidder, which is used to bundle and pull logs out of a forest
- Forwarder, which is a vehicle that uses a boom arm to load and carry logs out of the forest clear of the ground

Stump removal can occur using a grubbing blade (for clearing and grubbing operations) that can be mounted on the front of a carrier vehicle. Using this method, or cutting a tree part-way down and pushing it over, is an option to harvest material for large woody debris applications for restoration projects. Another option for stump removal is to cut or grind and mulch stumps, and the associated root mass below the ground level, using a stumper or stump grinder attachment. Grinding stumps can lead to sinkholes and grade irregularities when the remaining root systems decompose overtime. These grade irregularities are not an issue within natural forested areas, but they do have moderate safety implications on sites used by the public. Within private sites and recreation areas, grubbing, rather than grinding of stumps, is recommended.

Grubbing a clearing area (i.e., removing organic matter in the soil, often to a minimum of 12 inches in depth), provides an opportunity for stripping topsoil to be salvaged for use in future restoration planting efforts. Salvaged topsoil should be segregated and stockpiled separately from other cleared material; it can be spread over disturbed areas upon completion of tree removal activities. If a site will not support future planting, topsoil can alternatively be transported to other sites for use in restoration and revegetation efforts.

Areas within sites that are on steep slopes or in wetlands will benefit from retaining stumps after tree removal to stabilize soils and minimize impacts to these critical areas. To inhibit resprouting, stumps can be treated using broad-spectrum glyphosate or using fungus (mycelia) tablets that encourage fungus to eat away at the remaining structure.

Erosion and sediment control measures will need to be actively managed during the tree removal phase of the Program. If monitoring or inspection shows that the control measures are ineffective, repairs should be made, or replacement measures should be installed. If sediment reaches one-third

of the exposed height of the control measure, the sediment should be removed and disposed of properly.

4.3.2 *Material Disposal Options*

Options for disposal of trees are summarized in Table 3, followed by a more detailed discussion.

Table 3
Summary of Material Disposal Methods

Method Description	Suitability
On-Site Disposal (including chipping and mulching)	
Leave cleared materials on site with minimal processing, though cutting large tree pieces into manageable log segments may be required. Alternatively, material may be processed into wood chips/mulch, which can provide benefits to the site through invasive species control and soil nutrient inputs. On-site disposal cannot be used for invasive vegetation.	Suitable for most sites (with owner's permission), outside of wetlands. Not suitable for invasive material.
Off-Site Disposal	
Remove material from site and dispose at an approved location, or to a beneficial reuse site identified by the Port. Invasive vegetation must be disposed of off site in an approved location.	Suitable for wetland areas where on-site disposal is not feasible, or other sites at owner's discretion. Required for invasive vegetation.
Timber Sale	
Establish board foot volumes, market, and prepare trees for sale.	Large, forested tracts with merchantable timber

4.3.2.1 On-Site Material Disposal

Cleared materials may be left on site with minimal processing, though cutting large tree pieces into manageable log segments may be required. Alternatively, material may be processed into wood chips or mulch, which can provide benefits to the site through invasive species control and soil nutrient inputs. For small diameter trees, this mulching option can be combined with the tree removal step through the use of a mechanical mulcher. Invasive vegetation cannot be disposed of on site.

Disposing of material on site is not suitable for non-Port sites unless permission for this disposal method is approved by the owner. Disposing of material within wetland areas is also prohibited as this material could be interpreted as wetland fill.

4.3.2.2 Off-Site Material Disposal

Cleared material may be disposed of off site through the contractor taking ownership of the material and disposing of it at an off-site, permit-compliant location of their choosing. Alternatively, the Port may wish to take ownership of some of the cleared tree material for beneficial uses in other Port locations as restoration (e.g., large woody debris) or site furnishings (e.g., log edging, seating, or art

features). This Port beneficial reuse option can be facilitated by identifying this material on site and specifying a location where the contractor can deliver the material to be stockpiled. Invasive vegetation must be disposed of off site in an approved location.

5 Tree Replacement, Revegetation, and Monitoring

5.1 Timing

Plantings should be performed within the wet season if possible (between October and May) unless an irrigation system is available and utilized. Species with mature tree heights that are well below obstruction levels would be selected for replanting.

5.2 Site Preparation

Soil preparation and the installation of erosion control fabrics (if warranted) will precede plant installation tasks. Soil amendment may be needed for areas with compacted soil or areas where an excessive amount of topsoil had to be removed for tree removal operations. Soil amendment can be placed in planting areas and rototilled into the existing subgrade.

5.3 Planting

The tree species and vegetation mix will be designed to provide the same function as the removed trees but will not grow to a size that could constitute a future obstruction. The vegetation mix could include native shrubs and low-height trees such as Oregon ash, red alder, and shore pine. When the required tree replacement and/or revegetation/ enhancement ratio described above cannot be met on site due to space constraints or owner/agency request, planting may occur at an off-site location nearby, or in-lieu fee (monetary compensation) will be pursued.

Trees that are installed in public spaces and rights-of-way are generally larger planting stock and must meet the relevant jurisdictional requirements for tree height and trunk width. Additional requirements may include the following:

- Conifer trees should have only one leader (growing apex).
- Deciduous trees that have a solitary leader shall have only lateral branches thinned by pruning.
- Pruning requirements for low branches for accessibility on sidewalks and clear sight distances (branches typically pruned 5 to 8 feet above ground level).

Container plants should be installed according to the following requirements:

- Remove plants from containers in a manner that prevents damage to their root system. Containers may require vertical cuts down the full depth of the container to accommodate removal. All circling roots shall be loosened to ensure natural directional growth after planting.
- Install plants within pits that are sized at least twice the diameter of the root system or container, with scarified sides and bottom.

- Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set the crown of plant material at the finish grade. No filling will be permitted around trunks or stems or above grafts on grafted trees.
- After plants are set, water in soil mixture around bases of root balls and fill all voids.
- Mulch shrub beds immediately after planting. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface. Mulch shall be feathered back from base of trees and shrubs to reduce potential plant rot.

Plant materials for understory restoration can be supplemented with salvaged material removed during site preparation activities. Purchased plant materials can include both container-grown stock and livestake cuttings. Container-grown stock should be inspected prior to installation to ensure plants meet the following standards:

- Neither overly loose in the container with underdeveloped root systems, nor container bound
- Free of weeds, disfiguring knots, injuries and abrasions, and all forms of infestation

Livestake cuttings are live plant materials without a previously developed root system. This type of material is often used for willow installations within moist areas; livestake installation is not suitable for non-irrigated, dry soils. The source material for livestakes should be dormant when the cuttings are made and cut from material on a plant that is 1 to 2 years old. Cuttings can only be stored for 2 weeks (kept moist and shaded) before installation. Installation during fall to early spring (October 15 to March 15) is recommended. The top cut for the stake should occur immediately above a bud. The lower root end shall be cut at about a 45-degree angle. Livestake cuttings should be cut and installed with the bark intact, but with no other branches or stems included. Prior to installation, the stakes should be soaked continuously.

Livestake plants should be installed according to the following requirements:

- Pound livestakes into the ground with a mallet or create a hole using a pilot bar in firm soils.
- Plant at least 80% of the stake length within the ground and ensure that two to five bud scars are present above the ground.
- Tamp soil around the stake.
- Mulch the livestake planting area and thoroughly water mulched areas.

5.4 Monitoring

Where black cottonwood or maple stumps remain (steep slopes and wetlands), they should be monitored to ensure resprouting does not lead to future obstructions. Sprouts from stumps can rarely achieve heights above 80 feet, but in certain areas near SEA, these sprouts may still reach

obstruction levels. Stumps can be treated using broad-spectrum glyphosate or using fungus (mycelia) tablets that encourage fungus to eat away at the remaining structure.

5.5 Performance Monitoring

Long-term monitoring will be required to document potential future obstructions and provide regular maintenance of areas with low-height trees.

Monitoring will also occur for all revegetation areas to ensure an appropriate level of establishment and survivability. If monitoring reveals that the revegetation mitigation measures are not meeting the performance standards, corrective action will occur in accordance with applicable regulations. For example, in past Program implementation cycles the following performance standards have applied:

- Performance Standard 1: Average survival of all native planted stock will be 100% at the end of Year 1 and at least 80% at the end of Year 2.
- Performance Standard 2: Invasive plant species are maintained at levels below 20% cover averaged over the entire tree removal area.

5.6 Revegetation As Needed

Corrective actions such as re-planting or temporary irrigation will be considered if vegetation performance standards are not met. If feasible, a 1-year plant warranty requirement will be in the contract specifications. This will require the contractor to warrant plant materials to remain alive and be in healthy, vigorous condition for a period of 1 year after the date of physical completion. The warranty will require replacement of plants that are dead or in unhealthy conditions. Typically plant warranties do not include damage or loss of plants caused by fires, floods, freezing rains, lightning, or windstorms; extreme winter weather conditions; vandalism; or negligence on the part of the Owner. Following the 1-year warranty, the Port may conduct revegetation as needed to meet the survival requirements described in the above performance standards.

6 Relevant Regulations

This section describes the regulatory reviews, permits, and approvals that may be required prior to removing trees under this Program. As noted above, regulations and policies change, and the Port would comply with the latest standards at the time of each implementation cycle, as defined in the relevant Regulatory Memo.

6.1.1 *Federal*

6.1.1.1 FAA Airport Operating Certificate

As a condition of the FAA-issued Airport Operating Certificate, the Port is required to ensure there are no obstacles or obstructions on or around SEA that could affect aviation safety. Hazardous obstructions to air navigation are defined in 14 CFR Part 77. The Port will demonstrate to the FAA that obstruction standards, vegetation management, grant assurances, and wildlife hazard management requirements are being met.

6.1.1.2 Clean Water Act

Section 404 of the federal Clean Water Act (33 CFR 1344) requires avoidance and minimization of potential impacts to waters of the United States, including wetlands and streams. Should any trees be identified within a wetland or adjacent to a stream, then the Port would review requirements under the Clean Water Act.

The Clean Water Act also requires a National Pollutant Discharge Elimination System (NPDES) permit for discharge of pollutants (including soil) into waters of the United States. In Washington State, the NPDES program is administered by the Department of Ecology (Ecology).

In accordance with Chapter 90.48 RCW and the U.S. Clean Water Act, a Construction Stormwater General Permit (NPDES) is anticipated to be needed for sites where the area of disturbance will exceed 1 acre, or the risk of surface water quality degradation exists during construction.

6.1.1.3 Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

Two federal regulations administered by the U.S. Fish and Wildlife Service (USFWS) address protection of bird species. The Migratory Bird Treaty Act (16 U.S.C. 703-712) makes it unlawful to take, import, export, possess, sell, purchase, or barter any migratory bird, with the exception of the taking of game birds during established hunting seasons. "Take" includes removal of trees with active nests. A permit is not required to destroy an inactive nest of migratory birds (i.e., nests without viable eggs or chicks), provided the nest is destroyed and not retained.

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) makes it unlawful to take, import, export, sell, purchase, or barter any bald or golden eagle, their parts, products, nests, or eggs. "Take"

includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing eagles. USFWS developed National Bald Eagle Management Guidelines (USFWS 2007) which provide information about when and under what circumstances eagles may be disturbed by certain types of activity. The guidelines are intended to help people avoid and minimize impacts on bald eagles, particularly where actions or activities may result in “disturbance” of a nest, which is prohibited by the BGEPA.

6.1.1.4 National Environmental Policy Act

Currently, no federal nexus has been identified for the Program; thus, the Program is not subject to the requirements of the National Environmental Policy Act (NEPA). The NEPA process, a NEPA determination, and supporting documentation are not required. However, should a federal nexus be identified in the future, such as permitting under the federal Clean Water Act, for example, then the Port will work with the relevant federal agency to comply with applicable NEPA requirements.

6.1.2 State

6.1.2.1 Municipal Airports Act

The Washington State Municipal Airports Act (RCW 14.08) authorizes municipalities to acquire property for air navigation facility purposes, including, where necessary, acquiring property to provide unobstructed air space for landing and take-off areas (RCW 14.08.030). “Municipality” is defined as “any county, city, town, airport district, or port district of the state” (RCW 14.08.010).

The Municipal Airports Act prohibits vegetation growing in a manner that encroaches upon airport protection privileges and allows for the municipality to remove these encroachments without being liable for damages.

6.1.2.2 Airport Zoning Act

Within Washington State, the Airport Zoning Act (RCW 14.12) defines an “airport hazard” as:

*“any structure or tree or use of land which obstructs the airspace required for the flight of aircraft in landing or taking-off at an airport or is otherwise hazardous to such landing or taking-off of aircraft”
(Chapter 14.12 RCW).*

Airport hazards endanger the lives and property of airport users and the occupants of land in the vicinity of the airport (RCW 14.12.020). The Airport Zoning Act further identifies airport hazards as “public nuisances”—the creation of which should be avoided (RCW 14.12.020). Implementing the Program is consistent with compliance to the Airport Zoning Act.

6.1.2.3 Noxious Weed Law

The state noxious weed law (RCW 17.10) serves to prevent the spread of noxious weeds, which are non-native plants that, once established, are “highly destructive, competitive, or difficult to control by cultural or chemical practices” (RCW 17.10.010). Some noxious weeds are toxic or a public health threat to humans and animals, while others destroy native and beneficial plant communities (King County 2023). Property owners have the duty to control the spread of noxious weeds (RCW 17.10.140).

The Port’s functional tree replacement efforts described in Section 3.2 are designed to protect the life of high-value trees and to convert areas supporting invasive, non-native plants to native vegetation.

6.1.2.4 State Environmental Policy Act

As the lead agency, the Port has prepared a SEPA Environmental Checklist and Threshold Determination for the Flight Corridor Management Program, which includes review of pertinent and available environmental information, including this Program documentation. Through multiple implementations cycles, the number of trees requiring removal has steadily declined and the implementation process has become well established. The Port has determined that this Program review is more appropriate than separate project-level evaluations. If significant changes to the Program process and implementation are required, the Port will determine if additional SEPA review is warranted.

The SEPA documentation is posted on the Port of Seattle's SEPA/NEPA webpage available at <https://www.portseattle.org/environment/sepa-nepa>.

6.1.2.5 Forest Practices Act

The state Forest Practices Act (Chapter 76.09 RCW) requires a Class IV Forest Practices Permit for timber harvesting on forestland located within urban growth boundaries, as defined by the Growth Management Act (Chapter 36.70A RCW). All of the Port’s property is designated either Aviation Operation or Aviation Commercial within the City of SeaTac, and none of it is used to grow merchantable stands of timber. For the obstructions removed from the Port's airport property in 2017, the Department of Natural Resources advised that removal of obstructions on the Port’s property did not require a Forest Practices Permit because the Port’s property does not qualify as “forestland.”

Local jurisdiction regulations for clearing and grading activities are established to be consistent with and to comply with environmental protection measures of Class IV Forest Practices requirements, such as erosion control and protection of critical areas.

As part of the approach to regulatory requirements, each Implementation Plan will include an evaluation of the attributes for properties where an obstruction is identified for compliance with the Forest Practices Act.

6.1.2.6 Washington State Department of Transportation Policy

Some obstructions may be located on land owned by WSDOT. WSDOT has its own policies and requirements. In addition, the Port has easements related to obstruction removal for some WSDOT lands. Both WSDOT policies and Port easements will be reviewed if obstructions are identified on WSDOT-owned property. In some areas, WSDOT has projects planned which will result in tree clearing by WSDOT's contractors. The Port and WSDOT will coordinate to determine an appropriate division of labor with respect to obstruction removal and tree replanting. Vegetation removal within the WSDOT right-of-way would comply with applicable WSDOT policy and requirements.

For example, at the southern extent of the AAA, most of the currently undeveloped WSDOT right-of-way is slated to be developed for a new four-lane expressway extending State Route (SR) 509 from SEA to Interstate 5. SR 509 is anticipated to be under contract in 2024, with clearing expected possibly as early as 2025. Within the proposed SR 509 right-of-way, WSDOT will be responsible for removal of obstructions as part of the SR 509 construction. Trees identified as obstructions as part of the Program would be removed by WSDOT's contractor for the SR 509 construction.

WSDOT policy specifies replacement ratios based on the size of trees removed. The replacement ratio for moderate-size coniferous and other late successional species trees (between 4 and 30 inches in diameter) is one 1-gallon replacement tree for each 1 inch of trunk diameter at breast height (DBH). WSDOT's Roadside Policy Manual provides that,

"all projects [are required to] to restore the area they disturb to the ecosystem appropriate to that location and within the applicable roadside zone." (WSDOT 2022, page 2-1).

6.1.3 Local

In addition to the tree replacement standards listed in Section 3, the Port would comply with the local municipal requirements for tree removal (e.g. critical areas reviews, clearing and grading, and access permits). The Port and the City of SeaTac have executed an Interlocal Agreement (ILA) regarding a portion of Port-owned property within the city limits of SeaTac (SeaTac 2018). The ILA provides that Port-owned property within the AAA is governed by the development standards in Section 3.4(B) of the ILA and are exempt from the development standards and regulations of the SeaTac Municipal Code (SMC; SeaTac 2023). Port of Seattle property located outside of the AAA is subject to the relevant SeaTac codes and regulations. A summary of the current state and local regulatory environment is outlined below in Table 4.

Table 4 Current Applicable Local Regulations (2025)

Permit or Requirements	Port of Seattle Property Within AAA	City of SeaTac/ Port Property Outside of AAA	City of Burien	City of Des Moines	WSDOT/ Highline School District
Critical Areas Review	ILA Section 6.2(A), referencing City of SeaTac's Environmentally Critical Areas Code including: SMC 15.700.290 and 15.700.310 Wetlands	SMC 15.700.290 Environmentally Critical Areas, and SMC 15.700.310, Wetlands	BMC 19.40 Critical Areas	DMMC 16.10 Environmentally Critical Areas	Subject to city jurisdictional standards for the specific location(s).
Clearing and Grading	The Port will conduct a clearing and grading review through the Airport Building Department. ILA Section 5.4(A)(2)(d))	SMC 13.190 – Clearing and Grading Code SMC 13.190.050 – Clearing and grading permit required – Exceptions A. The project includes less than seven thousand (7,000) square feet of land disturbing activity; and B. The performance and restoration requirements of this chapter are met and best management practices are utilized to protect water quality; and C. The activity does not occur in a sensitive area or its buffer regulated under SMC Title 15	BMC 15.05.245 <i>Work exempt from permit.</i> 6) Grading. (a) Grading that disturbs less than 7,000 square feet of land in an isolated, self-contained area; provided, that there is no danger to the public and such grading will not adversely affect adjoining properties, as determined by the building official	DMMC Chapter 14.20.180 Exemptions (1) A grading or land clearing permit shall not be required for any of the following activities; provided, that the land clearing activity shall not exceed 2,000 square feet; the grading and filling activity shall not exceed 50 cubic yards; and that the clearing, grading, and filling activity shall be subject to the minimum requirements specified in this chapter.	Subject to city jurisdictional standards for specific the location(s).

Permit or Requirements	Port of Seattle Property Within AAA	City of SeaTac/ Port Property Outside of AAA	City of Burien	City of Des Moines	WSDOT/ Highline School District
Right-of-Way Use	None.	SMC 11.10.080 B. Class C – Disturbance of City Right-of-Way. Class C permit issued for work in the City right of-way include but are not limited to: i. Maintaining or removing street trees;	None.	None.	Port would coordinate directly with WSDOT and/or Highline School District to obtain any required access agreements.

7 References

Ecology (Washington State Department of Ecology), 2024. Stormwater Management Manual for Western Washington. Washington State Department of Ecology, Water Quality Program. Publication Number 24-10-013, July 2024.

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Port of Seattle 2024. Final Land Stewardship Plan. March 2024. Available from:
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USDA (U.S. Department of Agriculture), 2011. Danger Tree Mitigation Guidelines for Managers. Cited April 7, 2025. Available from: <https://www.fs.usda.gov/t-d/pubs/pdfpubs/pdf11512815/pdf11512815dpi72.pdf>.

USFWS (U.S. Fish and Wildlife Service) 2007. National Bald Eagle Management Guidelines. May 2007. 25 pages. Available at: <https://www.fws.gov/media/national-bald-eagle-management-guidelines>.

WSDOT (Washington Department of Transportation). 2022. Roadside Policy Manual. M 3110.04. February 2022. Engineering and Regional Operations, Development Division, Design Office. Available at: <https://www.wsdot.wa.gov/publications/manuals/fulltext/M3110/RPM.pdf>.

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Final Audit Report

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